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Cretaceous-Tertiary High-Latitude Palaeoenvironments, James Ross Basin, Antarctica, edited by J.E. Francis, D. Pirrie, and J.A. Crame, 2006, Geological Society Special Publication No. 258, 206 p., ISBN 1-86239-197-1; List USD 150.00 (GBP 75.00); GSL bookshop registered price, GBP 45.00.

It surely must rank among the most extraordinary events in the history of Antarctic exploration. Swedish geologist Otto Nordenskjöld landed on the northern tip of the Antarctic Peninsula in the summer of 1901, planning to reconnoiter James Ross Island and the surrounding area. The trip went disastrously wrong, however, when his vessel became crushed in the sea ice and sank. The party was subsequently stranded for over two years with only stone huts for shelter and penguins for food. But, as Francis et al. remark in the introduction to their excellent new book on the geology of that region, Nordenskjöld's enforced stay was not entirely without reward. The party became one of the first to discover fossil plants on Antarctica, providing tantalizing hints that this continent had not always been such an unyielding, frozen wasteland.

It is that oft-told story of the balmy Cretaceous–Tertiary greenhouse climate mode, with all its implications for future global warming, that forms the focus of Francis et al.'s exploration of the geology and paleoenvironments of the James Ross Basin. The 14 peer-reviewed articles that comprise this edited volume cover a broad suite of useful topics, including regional stratigraphy, volcanism, and evolution of paleoclimate, flora, and fauna, as well as documentation of the progressive slide toward full glaciation in the Neogene. In a book featuring such disparate topics, it is perhaps worth only emphasizing some of the highlights rather than attempting an encyclopedic overview. In particular, three papers are noteworthy.

Imogen Poole and David Cantrill's paper on fossil wood occurrences stands as one of the most synthetic and mature contributions to the volume. As they note, spectacular occurrences of fossil woods occur across the continent, and specifically in the James Ross Basin. In fact, entire fossil forests are locally buried in their position of growth, with individual trees preserved upright to heights of 8 m. This extraordinary material has been studied for more than a century, but in recent decades the pace of research has accelerated. Although largely a review in nature, the authors' complimentary knowledge—Poole is a fossil wood expert while Cantrill has a deep understanding of extant and extinct Southern Hemisphere ecosystems—has resulted is an engaging exploration of the rise and fall of Antarctica's arborescent vegetation.

Just as intriguing as the evidence for forests growing beneath the midnight sun is Tambussi et al.'s work on the Eocene penguin faunas of West Antarctica. Some of these wonderful diving birds, as the authors enthusiastically refer to their fossils, grew to giant size. Ironically, the first fossil penguins were discovered during the 1901–1903 Swedish Polar Expedition, and one imagines that Nordenskjöld might have wished for a diet of giant penguins in the course of his two-year-long icy exile. Tambussi et al. conclude their systematic revision of the fauna with an attractive reconstruction of penguins (of all sizes) frolicking on rocky shores overlooked by forests of the southern beech, *Nothofagus*.

As a piece of original science, arguably the most important contribution to this volume is the documentation of Neogene glacial events by Mike Hambrey and John Smellie. As the authors note, there is much controversy concerning the growth and stability of the Antarctic Ice Sheet in Neogene times, and uncertainty has been exacerbated by the lack of secure dates for key deposits. Here the authors describe glacial deposits interbedded with datable volcanic tephra. They improve knowledge of ice sheet dynamics, describing at least three phases of major ice sheet advance. These kinds of studies of Antarctic ice sheet evolution across a greenhouse-icehouse transition will likely prove crucial for better constraining models of future ice cap collapse should present global warming continue unabated.

In summary, Francis et al.'s volume represents another valuable contribution to the Geological Society of London's flagship series of Special Publications. It will provide a convenient one-stop shop for academics and students wishing to quickly access information on the geological and paleontological evolution of the northern Antarctic Peninsula, and I heartily recommend it for your library.

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