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Land of wondrous cold: The Race to discover Antarctica and unlock the secrets of its ice, Gillen D’Arcy Wood, Princeton University Press, Princeton (2020). xv+287 pp., Hbk., ISBN: 9780691172200. US$27.95.

There are few aspects of Antarctica that fail to captivate natural scientists. It is a land of ice associated with names of great explorers, and with a fascinating climate and meteorology, geology and geomorphology, and marine biota. The south polar ice records an environmental history of the Holocene with remarkable fidelity and is only rivalled by Greenland’s glaciers. Thus, in a few opening sentences, the promise of any book on the natural science of the great southern continent is summarised. But Wood’s approach is both different and an entertainment. He examines Antarctica from two complementary directions, contrasting the early explorers in the age of sail, from a time when the continent was known only from rumour and hearsay, with our current understanding of its geography and natural science, the details of which are forever changing and continue to surprise.

‘Wondrous Cold’ is comprised of an introduction, nine ‘interludes’ interspersed between 13 chapters, a ‘postlude’, acknowledgements, a detailed bibliography (16 pages) and index (nine pages). Figures are few, but pertinent, the paper allowing good black and white reproduction of diagrams, although it would have been even more attractive if at least some of the paintings could have been printed in colour. The chapters are concerned with history, men and exploration (and science); the interludes are more focussed on the natural science (and history, men and exploration). This division of labour works well as Wood shuffles what we now know about Antarctica with the heroic voyages of discovery, under sail, in the late 1830s and early 1840s. Wood writes well – the text reads like a thriller interspersed with the Ocean Drilling Project and bad weather. This structure is enthralling, even if quirky. If I have one criticism, it is that some of the early illustrations could have been prepared with more care. The fine map of Antarctica opposite p. 1 is horribly spoiled by the Transantarctic Mountains being labelled, ridiculously, Transatlantic. The geologic time scale (p. 7) shows two unnamed subdivisions of the early Mesozoic era, corresponding to the early and middle Triassic – just sloppy use of the drawing program, I assume.

The three explorers – Dumont D’Urville (France), Charles Wilkes (USA) and James Ross (Great Britain) – were all at sea, probing the edges of the continent and its ice cap, in the late 1830s and early 1840s, searching for knowledge as well as personal, national and international prestige. The explorers each make an interesting study, but so do their scientific staff. Wood pays early attention to the assistant surgeon of the Ross flotilla, Erebus and Terror, one Joseph Hooker, a name that sparkles in the firmament of great names in Victorian natural science, but, at that time, a most junior cog in the scientific wheel. This was one of the three great voyages by British Victorian natural scientists, the stuff of scientific legends – Darwin on the Beagle, Huxley on the Rattlesnake and Hooker on the Erebus. Chapter 2 describes Hooker’s exploration of Desolation Island – its botany, palaeobotany, geology and biogeography – in tandem with the senior naturalist, Robert McCormick. The following interlude shows how modern were Hooker’s ideas of biogeography, only now confirmed by the Ocean Drilling Project. But did Cook’s naturalist, in 1775, really only collect 18 specimens of plants from Desolation Island (p. 47) or should that read species?

The chapters tell a story of exploration and discovery; in contrast, the interludes jump hither and thither, each self-contained and emphasising some aspect of the natural environment. These scientific interludes are all good; I focus on two to convey something of their flavour. The shipwreck of the self-financed, Swedish Nordenskjöld expedition in 1901 was unfortunate for the explorers, who survived on a monotonous diet of salted Adélie penguin, but serendipitous for palaeontology. Among the treasures that they uncovered were fossils of giant penguins, previously unknown and about two metres in height. Two Eocene species were named after members of the expedition, including one for the leader, Anthropornis nordenskjoldi. The Eocene was the Age of Penguins, at least on Seymour Island, where at least fourteen coerval species have been found. These swam in hothouse seas off the Weddellian coast of Gondwanaland, where southern beeches and marsupials populated the land.

Ross had discovered the North magnetic pole and was only kept from the South magnetic pole by his primitive resources; a party led by Mawson, part of Shackleton’s first expedition, were the first to reach it in 1909. Terrestrial magnetism was an important topic of study for Ross and his contemporaries, but less so by the 20th Century. It was only in the 1950s that studies of palaeomagnetism were ascendant, identifying reversals of polarity and determining polar wandering. This was the prelude to confirmation of Alfred Wegener and continental drift, and the modern synthesis that is plate tectonics.

None of the leaders of these three expeditions was able to bask in their glory for long after their returns. D’Urville had lost a son to cholera while he was in the south; after his return, this truly great explorer died with the rest of his family in a major railway accident. Wilkes’s and Ross argued the position of the former’s Antarctic coastline, inaccurately recorded on a ‘. . . botched chart’ (p. 241). Further, Wilkes was court-martialled on a charge by his own officers who accused him of ‘. . . never having seen Antarctica at all on the discovery date . . . ’ (p. 243) in his log. Wilkes was likely a model for Captain Ahab in Melville’s Moby Dick; both had mental health problems. Ross’s Erebus and Terror, ‘. . . the two best ships in the world for polar exploration . . . ’ (p. 27), and a party of 128, went looking for the North-West Passage under Franklin and never returned; they were great ships for exploration only in the hands of a great explorer. Later, Ross turned to drink after personal tragedy; he never published the natural history collections he made in the South, which ended as ‘. . . a dirty rubbish pile of broken jars’ (p. 245).
I have greatly enjoyed reading 'Wondrous Cold'. This is a book that deserves to be widely read. Wood expertly interleaves aspects of exploration by sailing ship in the 19th Century with varied aspects of 21st Century natural science; all are enthralling. In these days when the explorer in all of us is kept in check by COVID-19, 'Wondrous Cold' will both fascinate and inform. It will make any reader yearn for the freedom, once again, to explore, collect and study.

Declaration of Competing Interest

The author declares that he has no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.