

The appendices comprise a moving sonnet to Attaguvtaalluk, who ate the flesh of her family to survive; an Inuit board game; brief life histories of twelve men mentioned in the book; and a list of publications by expedition members. Graham Rowley reaches his goal of recording a significant piece of Arctic history from personal experience.

The book, however, is more than a history. It is a warm, colourful tale of scientific and self-discovery, of two distinct cultures sharing and shaping a region and an era. The phrase “something for everyone” is hackneyed, but it describes well the wide spectrum of readership that *Cold Comfort* can serve.

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**WEDDELL SEA TECTONICS AND GONDWANA BREAK-UP.** Edited by B.C. STOREY, E.C. KING, and R.A. LIVERMORE. Bath, England: The Geological Society Publishing House, 1996. 284 p., maps, b&w and colour illus., index. Hardbound. US\$93.00/£56.

This moderately technical book is the culmination of perhaps decades of research on a little-known part of the Antarctic continent's adjoining seafloor, the Weddell Sea, lying between about 0° and 60° West longitude. Its visible southern boundary is the barrier of the Filchner-Ronne Ice Shelf at about 75° to 78° South latitude, and northeast of the barrier is the coastline of the more ancient landmass known as East Antarctica, where rocks along that coast have been dated at more than a billion years old. (The oldest rocks found in Antarctica are much older, comparable with those forming the foundations, or basements, of all continents, approaching nearly four billion.) Those familiar with the concept of Gondwana (or Gondwanaland) will assume correctly that the contents of the book pertain to the formation of the Weddell Sea as a result of the separation of the various components of a large southern hemisphere landmass (Gondwanaland) that began to break up into smaller units beginning about 180 million years ago or so, depending on the location. Those major components are presently Antarctica, South America, Africa, Australia, and India, with lesser crustal units including New Zealand, Madagascar, and the Falkland Islands, for example.

Geologically speaking, this is a very significant volume, consisting of 18 individual chapters by well-known investigators writing on separate aspects of the subject. For geological reasons, the subject area extends into southern South America, the Falkland Islands, and the coastal area east of the Greenwich Meridian. An introductory chapter by the book's editors provides a very good summary of what follows. The objective of the volume is to answer questions relating to the history of seafloor spreading in the Weddell Sea and a number of related questions. The volume is the product of an international conference held in Cambridge, England in June 1994.

Most of the authors are from Britain, but representation from Germany is high because of the continuing studies in the Weddell Sea from the German icebreaker *Polarstern*. The remaining authors are from Belgium, Japan, Russia, South Africa, and the United States.

The reader should keep in mind that “seafloor spreading” is a term related to plate tectonics and continental drift, all of which gained considerable recognition in the late 1950s and early 1960s, when the process became better understood. The mechanics of plate movement could explain the distribution of landmasses on the globe, as well as many geological features such as volcanoes, earthquakes, and oceanic trenches. Crustal plates move at rates of only several centimetres per year, on average, but given geological time of millions of years, this movement can displace entire continents over considerable distances.

The first person to sail into the Weddell Sea was James Weddell, on the sealing brig *Jane* in 1823. Weddell did not know or care about the formation of the seafloor, of course. Nor did the later explorer Sir Ernest Shackleton on the *Endurance*, a ship that became trapped in the sea ice and eventually sank in 1915. Ships in the Weddell Sea today are often there on seismic surveys or to collect bottom samples in efforts to accumulate data on the history of the seafloor and of the Antarctic ice sheet, for example.

It is apparent from some of the chapters that the general or regional fit of major continents within Gondwana is reasonably well established, but there is still debate over the number and earlier positions of microplates within the Weddell Sea region. For example, instead of neat and orderly major landmasses like the crust of East Antarctica (not all of which is simple), West Antarctica has smaller crustal units (“blocks”) composed of major mountain ranges plus adjacent outlying mountains that seem to have become detached from perhaps larger features. Their crustal properties are in some cases not well known, but might be transitional between oceanic and continental crust in thickness. As scientists reassemble these “blocks” to form the earlier Gondwana, some of them do not appear to fit the overall configuration because there is not enough room for them. The puzzle of the Falkland Islands (Islas Malvinas) block, believed by Adie (1952) and others on geological grounds to have become detached from the southeastern coast of Africa, rotated about 180 degrees, and then been carried along with the South American plate to its present location, now has a different explanation. In their contribution on the geological evolution of the Falkland Islands continental shelf, Richards et al. favour a nonrotational history on the basis of offshore seismic and gravity-magnetic data. This is only one example of reinterpretations resulting from later technological developments of a more sophisticated nature, including satellite mapping of large-scale crustal features through high-resolution Geosat altimetry, ERS-1, and others.

Some chapters benefit from colour illustrations of satellite imagery, geophysical maps, and geologic cross sections, which provide easier viewing of data. Printing and reproduction quality are excellent. The book's editors have done a

thorough job of making the chapters readable, though the technical content may not appeal to those not totally familiar with the subject of tectonics and Gondwana geology. However, this is not a fault of the book, but rather a feature of the complexity of the science. A comprehensive 10-page index is useful in searching for subject material in the text. Overall, the authors and editors have done their job well, bringing readers up to date on the present knowledge of this little-known part of the Antarctic plate. Although the investigators have unravelled much of the unknown or reinterpreted it, many more questions remain to be studied. I expect that a comparable conference on the subject will be forthcoming within five to ten years as more data become available. I look forward to it. I recommend the book to an audience of those interested in state-of-the-art tectonics and to instructors, who should include some of the content as required reading for graduate-level courses.

#### REFERENCE

ADIE, R.J. 1952. The position of the Falkland Islands in a reconstruction of Gondwanaland. *Geological Magazine* 89:401–410.

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**CHILKOOT TRAIL: HERITAGE ROUTE TO THE KLONDIKE.** By DAVID NEUFELD and FRANK NORRIS. Whitehorse, Yukon: Lost Moose Publishing Company and Parks Canada, 1996. x + 182 p., maps, b&w illus., bib., index. Softbound. Cdn\$24.95.

*Chilkoot Trail: Heritage Route to the Klondike*, is a worthwhile attempt to relive the experience of the Chilkoot—a remote, seemingly inaccessible, forgotten part of our northern countries—and capture what it was before, during, and after the Klondike gold rush of 1898. David Neufeld of Parks Canada and Frank Morris of the U.S. National Park Service have brought together years of research, personal stories, myths, archival material, and photographs. The result: a tale of energetic people who came north in search of fame and fortune, and left with disappointment, riches, or a conquering spirit quenched by tackling one of the last frontiers.

To reach the Klondike, the traveller must pass through three vegetation zones: the Coastal Rainforest, the High Alpine, and the Boreal Forest. Here each zone is painted with geographical vividness that allows the reader to envision the trail during the gold rush. The authors then recount the work of Tlingit and Athapaskan Indians, whose long history of trade relations pioneered the coast-to-interior trails. The human side of the picture becomes clear as the dynamic of the white man's encounter with yet another Native culture unfolds. Well before the Klondike saga there were Natives, and

after it is all over, they are still there, but unchanged by their menial roles as packers during the actual rush. The presence and impact of the gold rush did succeed, however, in altering the Natives' harmonic relationship with the environment.

Neufeld and Morris recount how the actual stampede occurred, and walk the reader along the treacherous trail in various seasons, using many documented stories. Sidebars with snippets of information and photographs from an era when photography was just coming to the forefront enrich the passage and bring it to life. In time, as the discovery of gold in Dawson Creek was followed by the brief stampede and the building of the railway, the trail quickly rose and fell as a landmark in history. The authors introduce us to the political and historical reality of settling international boundaries, the role of the North-West Mounted Police in ensuring the safety of thousands of prospectors, and the bickering which occurred at all political levels. Finally, the authors describe what happened to the towns, the people, and the trail after the gold rush. Eventually, quieter times returned with the added dimension of the presence of the white man.

This book comes out of a love for the Chilkoot Trail, what it has offered in the past, and what it still has to offer to the tourist today. It makes the potential hiker appreciate what has gone before and what impact he can have. The photographs bring an appreciation of the hardships experienced by those pioneers. The research highlights the skills and entrepreneurship of the First Nations clans who opened the trail well before 1898.

Well produced and well worth the time it takes to read, this book would make a great coffee-table gift for all ages and professions. It is highly recommended for the readers who propose to take the trip into the Chilkoot Trail area during its 100th anniversary next year. It would make every facet of the visit more enjoyable and provide a good keepsake of our link with the past.

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**ROBERT PEARY & MATTHEW HENSON AT THE NORTH POLE.** By WILLIAM E. MOLETT, Lt. Col. USAF (Ret.). Frankfort, Kentucky: Elkhorn Press, 1996. vii + 123 p., b&w illus., bib., appendices. Hardbound. US\$19.95.

In 1988 William Molett, a very knowledgeable navigator with the U.S. Air Force, picked up a copy of the *National Geographic* magazine in which Wally Herbert backed down on his support for Robert E. Peary's claim to reach the North Pole. Peary's position was that he did not need a sextant to find the geographic position of the North Pole. Molett agrees with Peary, while Herbert (1988) did not. As a result, Molett became interested in the Peary–Cook controversy concerning the polar claim and who had in fact been the first man to arrive at the geographic North Pole. The author vigorously