

subjects, well worth a read, but these chapters do not achieve the ground-staking authority of the early chapters.

These criticisms do not detract from the immense value of this book. If anything, the clear and thorough coverage of some topics simply sets a very high bar for the rest of the text. Researchers and students will delight in *The Arctic Climate System*, and I can honestly report that if I could have only one text or resource on Arctic climatology, this would be it. Perhaps the best recommendation I can give is to report that I have already adopted this text for the graduate course that I teach in Arctic Climate Dynamics. I expect it will maintain this place for many years and future editions.

REFERENCES

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TWENTIETH-CENTURY SHORE-STATION WHALING IN NEWFOUNDLAND AND LABRADOR. By ANTHONY B. DICKINSON and CHESLEY W. SANGER. Montreal: McGill-Queen's University Press, 2005. ISBN 0-7735-2881-4. xvii + 254 p., maps., b&w illus., appendices, notes, bib., index. Hardbound. Cdn\$49.95.

Whales and whaling have aroused literary and scholarly interest for many reasons. Among them are the grandeur of these large species; their spiritual, nutritional, social, and commercial importance to coastal peoples who depend upon living marine resources; the historical and present challenges met in their capture, use, and management as resources; and questions inspired by their behavior.

The present volume is a lucid, objective, thoroughly researched, and historically grounded regional account of modern whaling in waters around Newfoundland and Labrador. Its authors and publisher merit top marks for presenting a valuable contribution to Newfoundland literature and evidence of our wider failure to use the sea's renewable living resources—in this case, whales of various species—without driving them to the precipice of biological collapse, if not extinction. The book results from a

collaboration between two Memorial University of Newfoundland geographers: Chesley Sanger, whose interest in North Atlantic whaling reaches back to about 1980, when he studied Scottish whaling and its influence on sealing; and Anthony Dickinson, who has collaborated with Sanger on studies of shore-whaling in Newfoundland and Labrador since about 1990.

Ten well-annotated chapters take readers from Newfoundland and Labrador's earliest inhabitants, beginning in 7000 BC, to the decline and cessation of whaling in its waters in 1972, when Canada's government imposed a moratorium on commercial whaling. Concise descriptions of how inhabitants adapted to this maritime region are provided, with special attention to the 20th century. Chapter One outlines the archaeological and historical evidence for human occupation of the region, beginning in Labrador with Maritime Archaic Indians in 7000 BC, through Paleoeskimos (2000 BC), Dorset Paleoeskimos (by AD 500), and Inuit (by AD 1500, when persistent whale hunting first appeared). Beothuk Indians occupied Newfoundland until 1829. (The Mi'kmaq Indians, who remain on the island to the present, are not mentioned.)

The first Europeans, the Norse, appeared briefly on the Great Northern Peninsula by AD 1000, but about five centuries passed before Europeans discovered the rich cod resources in Newfoundland waters, after which various nations appeared for seasonal fishing and vied for hegemony. The Basques, however, arrived in the 16th century and conducted the earliest traditional whaling from stations on the coast of Labrador in the Strait of Belle Isle until their target stock, North Atlantic right whales, declined and they shifted their hunt elsewhere. By the 1700s, New Englanders, and, later, Dundee whalers, at times hunted right and sperm whales in Newfoundland waters, and in the mid 1880s several large Newfoundland merchant firms conducted some hunting. After two decades of operation there, the only two Scottish firms with branches in Newfoundland involved in Arctic whaling and sealing closed their doors. Their departure benefited the first joint Newfoundland-Norwegian whaling company, which used a transport vessel and some machinery acquired from these firms to establish its first whale factory. Overall, whaling in Newfoundland waters remained sporadic and limited to a few species until the last years of the nineteenth century.

Chapter One closes with the arrival of the "Modern Era of Global Whaling." It involved coastal whaling in Newfoundland waters built upon a mechanized catching technology and system (steam-driven catchers, each with a bow-mounted gun that fired explosive harpoons attached to a winch and pulley mechanism for retrieval) developed by Svend Foyn in Norway in the 1860s. For the authors, this system insured the inevitable "depletion of all commercially important whale stocks" in the 20th century age of "generally ineffectual, ignored, and poorly enforced" regulations (p. 13).

Chapter Two recounts the convergence of Newfoundland and Norwegian interests in developing "Newfoundland's" coastal whaling industry. It involved both chance

and international entrepreneurship. Norwegian coastal whaling interests, having depleted whale stocks in their own area in the latter half of the 19th century, sought new ones to harvest, mainly to export their products—oil, bone, and guano—to markets in England, Scotland, and the United States. The Norwegian need for new stocks to hunt was no secret in Newfoundland, where a Norwegian fisheries expert, Adolph Nielsen, had been appointed Commissioner of Fisheries in 1893.

Nielsen introduced the idea of transferring Norwegian whaling technology and expertise to Newfoundland, where the government saw coastal whaling as a promising new enterprise that would boost both employment and tax revenues (e.g., from licenses and export duties). Newfoundland's business community also saw in whaling opportunities for direct investment and ownership; supply of capital equipment, building materials, and labor expertise; servicing of whaling operations; and later, construction of catcher vessels. Twenty-one shore stations operated periodically between 1892 and 1972; they were often short-lived, and always influenced by overexploitation and market changes. Chapter Two recounts the development of the first station, its organization as a joint venture with Norwegian and Newfoundland investment, its successes, and its problems, many of which persisted through the gradual and sporadic expansion of the industry that followed. Interestingly, Nielsen became a major investor and member of the company's board. And the promised transfer of Norwegian expertise to Newfoundlanders remained unfulfilled.

Chapters Three through Five describe the expansion in numbers of shore plants around Newfoundland and Labrador coasts from 1898 through 1904, when industry production peaked. The authors describe the stench created by incomplete processing in the industry's early years and its impacts on local fishing grounds and communities. Over time, hunting practice adapted to whale migration patterns, and the new, patented Rissmüller processing system enabled processing plants to expand the range of products extracted from whale carcasses. Shore stations with access to such processing facilities no longer had to tow carcasses out to sea for disposal, risking their return to shore to interfere with shore fishing or to rot and annoy local communities.

Chapter Six details the 1905 season and the first decline in whale landings, which led rapidly to the financial collapse and closure of Newfoundland's whaling operations. What approaches a case history of this first "exploitation–depletion cycle" is seen in Chapter Seven through the experience of the shore station at Aquaforte, on Newfoundland's Southern Shore. The station was led by Andreas Ellefsen, a Norwegian with expert knowledge of the industry, who entered the Newfoundland scene in 1901. Wholly owned by Norwegians, Ellefsen's company stirred local ire over what seemed to be a foreign invasion and appropriation of Newfoundland resources. (That aggravating theme recurs today with respect to foreign fishing within and outside Canada's 200-mile exclusive fishing zone and

also Newfoundland's resource relationships with Canada.) In addition, as target whale stocks declined under pressure of an effectively unregulated hunt and catchers had to range ever farther to encounter them, Ellefsen's company faced various problems with carcass disposal, processing, markets, and increasing costs. It was difficult to sell off plant facilities when operations ceased.

Chapter Eight discusses coastal whaling connections between Newfoundland and British Columbia, which involved transfer of catcher vessels, processing know-how, and Newfoundland manpower, on and off into 1972. Canadians were prominent in the British Columbia development, which began around 1905. As in Newfoundland, in the absence of effective regulation, British Columbia's local whale stocks declined under hunting pressure.

Chapter Nine covers the sporadic resumption of whale station activity in Newfoundland and Labrador from 1918 to 1951. One company continued operations through the 1920s and 1930s, encouraged by government's 1927 Whaling Act, which called for more effective hunt control and a strong role for Newfoundland labour. Some whaling continued from Newfoundland's south coast and the Great Northern Peninsula during World War II and into the early 1950s. From 1952 to 1972, Newfoundland coastal whaling broadened to target smaller whales, especially pothead and minke, serving a new industry, fur ranching, as well as providing some whale meat for human consumption. (As late as the mid-1960s, frozen minke whale meat was sold in Newfoundland shops as "Arctic steak.") This phase led to the end of modern whaling, at least in the 20th century, described in Chapter Ten.

An Epilogue sums up the authors' findings on topics such as the factors that explain the industry's many problems, the role of the International Whaling Commission (IWC), new international regulatory measures, exceptions to the IWC moratorium on commercial whaling, Canada's departure from the IWC (except as observer) in 1982, and the emergence of the North Atlantic Marine Mammal Conservation Organization (a regional entity in which Canada holds membership). The author's concluding remarks note the rise in whale-watching enterprises around the Newfoundland coast and their benefits to Newfoundland communities. At the same time, however, such enterprises raise questions about how this development may impact whales migrating in these waters.

Seventy-four photographs, some from as early as 1900, reveal the industry, its machines, and its people. Some show capture vessels and their technology, the kill, and the rendering of carcasses of various species. In others we see station premises, boiler technology, shore plant flensers and other workers, and unidentified spectators. The unknown photographers also captured gunners, catcher boat captains, and station owners—the industry's parvenu aristocrats—often in fine strutting attire. Skillfully rendered maps, figures, and tables also illuminate the text. A bibliography of published and archival sources and an index close the volume.

I strongly recommend this well-researched and written volume. It fills a major gap in the history of Newfoundland's marine resource industries, their enterprise development around whale resources, and their trans-Atlantic connections with Europe, especially during the 19th and 20th centuries. It has value for audiences in multiple disciplines, and will be particularly useful for students of whaling history and economic geography, Newfoundland's coastal economic development, marine renewable resources and their management, and related issues of coastal societal development.

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BOOKS RECEIVED

- ARCTIC HELL-SHIP: THE VOYAGE OF HMS ENTERPRISE 1850-1855.** By WILLIAM BARR. Edmonton: The University of Alberta Press, 2007. ISBN-13: 978-0-88864-433-6. xiv + 318 p., maps, b&w and colour illus., notes, bib., index. Softbound. Cdn\$34.95.
- THE ARCTIC PROMISE: LEGAL AND POLITICAL AUTONOMY OF GREENLAND AND NUNAVUT.** By NATALIA LOUKACHEVA. Toronto, Ontario: University of Toronto Press, 2007. ISBN 978-0-8020-9486-5. xiv + 255 p., maps, notes, bib., index. Softbound. Cdn\$27.95; £18.00.
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- HUMMOCKS: JOURNEYS AND INQUIRIES AMONG THE CANADIAN INUIT.** By JEAN MALAURIE. Translated by PETER FELDSTEIN. Montreal: McGill-Queen's University Press, 2007. ISBN 9780773532007. xxxviii + 386 p., maps, b&w illus., appendices, notes, bib., index. Hardbound. Cdn\$49.00.
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- PENGUINS OF THE WORLD.** By WAYNE LYNCH. Richmond Hill, Ontario: Firefly Books. ISBN 13: 978-1-55407-274-3. 175 p., maps, colour illus., further reading, index. Softbound. Cdn\$24.95.