RED LIGHT TO STARBOARD: RECALLING THE EXXON VALDEZ DISASTER. By ANGELA DAY. Pullman: Washington State University Press, 2014. ISBN 978-0-87422-318-7. xii + 266 p., map, b&w illus., notes, bib., index. Softbound. U.S.\$19.95.

Strongly operative in this book's title is the active verb, "recalling." A quick survey of about 100 books on my shelves suggests that using verbs in titles is rare, except among gifted storytellers whose narratives work well when read aloud: John McPhee (Coming into the Country, 1976; Looking for a Ship, 1990); Patrick McManus (They Shoot Canoes, Don't They?, 1981); Farley Mowat (Never Cry Wolf, 1963); Seth Kantner (Shopping for Porcupine, 2008); Karen Brewster (The Whales They Give Themselves, 2004); and Richard Feynman (Surely You're Joking, Mr. Feynman, 1985). Second, "recalling" focuses upon combined research and storytelling that this author undertook in stages (Preface, p. ix-xii). Third, "recalling" underscores our tendency to observe certain anniversaries. Both 25th and 50th anniversaries predictably stimulate people to review what wisdom has survived, even ripened, from events or discoveries one and two human generations earlier.

This book's publication coincided with the 25th anniversary of the night that the supertanker *Exxon Valdez* ran aground on Bligh Reef on Good Friday, 24 March 1989. An estimated 11 million gallons (42 million litres) of Arctic crude oil escaped through the gash in the tanker's hull, then spread southwestward through Prince William Sound (PWS), and on past the Kenai Peninsula toward Kodiak Island. Just three days after this 25th anniversary, many Alaska residents and geologists worldwide observed the 50th anniversary of Alaska's Good Friday Earthquake of 27 March 1964, which was triggered by rock fractures directly beneath northwestern PWS.

Readers who don't already know will learn that Red Light's physical setting is as compelling as its narrative. PWS in southcentral Alaska is geologically, geographically, biologically, and culturally a special place. Perched on the Pacific "Ring of Fire," the Chesapeake Bay-dimensioned Sound has for millions of years been a focus of crustal tectonic movements, by which the dense marine Pacific Plate dives relentlessly beneath one edge of the more buoyant continental crust of the North American Plate. The Chugach Mountains are thrust upward by this crustal subduction, forming the peaks surrounding most of the Sound. Before the Last Glacial Maximum began to relax its grip on Earth some 18000 years ago, much of PWS was covered by coalescing streams of freshwater glacial ice derived from snow falling on higher elevations in the Chugach Mountains. Now as then, PWS and the Chugach Range sharply demarcate humid northern Pacific marine climates from drier interior terrestrial climates to the north. About 13-15000 years ago (130-150 centuries before present) recession of ice shelves and tidewater glaciers permitted human pioneers from Asia and Beringia to live year round in PWS from its marine and coastal resources. Upon the

arrival of Eurasian explorers, Russian fur exploiters, and written history in the 18th century CE, PWS entered a twocentury series of rushes to exploit first one, then another, of its local renewable and non-renewable resources. These stampedes were punctuated by dramatic, often ephemeral, uses of anchorages, ports, drainages, and mountain passes as gateways to longer routes north of coastal mountains, which linked the Pacific Ocean to subarctic and Arctic mineral resources.

Measured in scales of drama, costs, and engineering challenge, all the earlier routes taken by trails, roads, rail-roads, and airplanes between the northern Pacific coast and the Interior/Arctic were dwarfed by the Trans-Alaska Pipe-line System (TAPS), which the U.S. Congress authorized by the margin of a single vote in 1973 (p. 77–78). TAPS began delivering Arctic crude oil to its marine terminal across the bay from the post-earthquake townsite of Valdez in 1977. Large and very large crude carriers load at the terminal, and are piloted and escorted through PWS to the Gulf of Alaska (map, p. xii). For 11 years and 8 months the pipeline and tanker transport system functioned almost flawlessly, without catastrophic failures feared by critics of the system.

Red Light to Starboard shows readers in detail how the spill and its aftermath changed the lives of people who depended on renewable resources in PWS, notably fishermen organized as the Cordova District Fishermen United (CDFU). From the time when the industry first disclosed its proposed strategy, CDFU questioned the wisdom of transferring crude oil from the TAPS pipeline to tankers for transport through the ecologically sensitive PWS to the open Pacific Ocean. Many fishermen's preferred alternative was an all-overland pipeline route through Canada to markets in the central or eastern United States (p. 76). The catastrophic spill feared by the CDFU almost occurred on another tanker in crisis in 1980 (p. 130). Instead, the relaxation of safeguards continued for eight more years before *Exxon Valdez* ripped a hole in her hull.

The book follows the courtroom proceedings by which compensatory and punitive damages were reduced and waived. PWS fishermen who could not financially weather the closed or shortened fishing seasons after 1989 sold their boats and limited entry permits for fractions of their earlier value. Some found alternative ways to make a living. Many left the Sound and Alaska in the mid-1990s. Either way, the spill's legacy impoverished both ecosystems and ecological wisdom that had sustained living and lifestyles dependent on renewable resources in PWS.

The author balances storytelling and academic scholarship. Day's scholarship complements her storytelling, putting her on course to earn a doctoral degree in Political Science at the University of Washington. Readers who value documentation will appreciate her endnotes (p. 245-253). Those who acquire books that develop an index to give their content longevity as references will rejoice in this index (p. 259-265). Finally, any readers motivated to strike up a conversation with the author will find it useful first to consult Day's bibliography (p. 255-257). This reviewer's collection includes dozens of books on Prince William Sound. But the indispensable category has only three: Lethcoe and Lethcoe (2001); Wohlforth (2010); and now Day's own account. Marking the 25th anniversary of the *Exxon Valdez* spill, this book makes a contribution comparable to John Nance's (1988) distillation of the wisdom gained by seismologists and geophysicists by the 25th anniversary of the Great Alaska Earthquake of 1964.

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UNDERSTANDING EARTH'S POLAR CHALLENGES: INTERNATIONAL POLAR YEAR 2007–2008, SUMMARY BY THE IPY JOINT COMMITTEE. Edited by I. KRUPNIK, I. ALLISON, R. BELL, P. CUTLER, D. HIK, J. LÓPEZ-MARTINEZ, V. RACHOLD, E. SARUKHANIAN and C. SUMMERHAYES. Rovaniemi, Finland: University of the Arctic; Edmonton, Alberta: CCI Press, 2011. ISBN 978-1-896445-55-7. 695 p., maps, colour illus. Hardbound. Cdn\$250.00 + shipping. Also available online in PDF file format.

"Extraordinary" accurately characterizes this book. Its nine editors (plus 242 contributing authors and 52 reviewers) have crafted a mosaic that details the processes in polar scholarship preceding, during, and immediately following the fourth (most recent) International Polar Year of 2007–2008 (IPY 2007–08). The assumption motivating this massive compilation is that a fifth IPY will be conducted in 2057–58. By analyzing precedents from the first four IPYs (IPY 1, 1882–83; IPY 2, 1932–33; International Geophysical Year, 1957–58; IPY [4] 2007–08) this volume suggests that the "six to seven years" (p. 631) of intensive work by informed research planners required to launch the fifth IPY should begin in 2050–51. Thus, almost half the book's most avid readers have yet to be born, and well over half cannot have completed bachelor's degrees yet.

The compendium's analysis, in other words, makes it a leading candidate to serve as the definitive guide to how "an estimated 50 000" (p. xviii) participants in IPY 2007–08 advanced and integrated the state of polar and global understanding in the 21st century's first decade. As a reference, its value should increase with time (unlike short publications, evaluated in academic meritocracies by how many citations, readers, or "hits" they attract shortly after their appearance).

Shortcomings of scholarly forecasts generally, not of this one specifically, form the subject of this and several subsequent paragraphs. The work's life expectancy, though it may excuse the four-year delay between its publication and the appearance of this review, does not make it an immediate "must-read" selection. Its encyclopaedic treatment of historic roots, planning, organizing, communicating, executing, archiving data from, enfranchising new stakeholders to, and predicting legacies of IPY 2007–08 denies this information-rich reference work easy "cover-to-cover" readability.

Inclusive processes of inquiry, to which participants with dissimilar backgrounds and perspectives are attracted, are in vogue at present as the most promising strategies for addressing complex global problems. Accordingly, this publication chronicles the widening circle of people involved in all phases of IPY, from planning through post-IPY curation and syntheses of information: women, whose representation increased especially between IGY 1957–58 and IPY 2007–08; social scientists, even in the "no people" continent of Antarctica (Ch. 2.10 and 5.1); early-career scientists, also termed the "next generation of polar scientists" (Ch. 4.3); educators, formal and informal, and the general public (Ch. 4.1); Indigenous peoples (Ch. 2.10); and Arctic residents and local communities (Ch. 5.4).

Has this general inclusiveness missed any would-be stakeholders or investigative processes from disciplines outside the traditional core areas of natural and social sciences? Not surprisingly, there is little evidence that independent scholars, "lone wolves" or investigators not thoroughly supported by institutional, agency, or nongovernmental organizations participated in IPY 2007-08. A few other non-inclusions could be regarded as "exclusions" a generation or two in the future. One such might be failure by IPY 2007-08 explicitly to attract elders (except Indigenous elders, e.g., Fig. 3.10-8) such as post-career scholars, in symmetry with its solicitous approach to earlycareer polar scientists. Especially if future polar scholars outlive their age of retirement by a decade more than we do today, architects of the next IPY might want to treat them as stakeholders and advisors.

Future IPY planners might decide to address another exclusion: there is almost no attention paid to management and curation in perpetuity of physical, chemical (e.g., ice and lake sediment cores) and biological specimens collected in the course of IPY 2007–08. There is no IPY "voucher specimen" or repository policy analogous to the curation or management of optimally accessible data collected in pursuit of IPY investigations. Had the topic been addressed, it could have been shown as a row at the bottom of Table E-1 (p. 630) entitled "sample and specimen repository policy." This omission might be a subtle holdover from IPY 2, which "steered away from the IPY 1 natural

history template that included botany, zoology, anthropology, and museum collecting (Baker, 1982a)" (p. 11). A legacy of excluding biological sciences persisted through IGY 1957–58, and probably motivated biologists and ecologists to stage their guilds' own prolonged burst of energetic international investigations known as the International Biological Programme of 1967–74 (p. 20). Likewise, in matters of data archival, otherwise thoughtful and candid chapters of this IPY analysis do not address the physical challenges inherent in selecting and repeatedly updating technologies for storage media to assure future information retrieval.

For pervasiveness, no theme in this compendium rivals detecting high rates of change in polar regions. Although it is difficult to imagine today, some other driving paradigm might supplant this theme of rapid change by 2050. Suppose, however, that each of the 14 field stations occupied during the first IPY had initiated and terminated its observations just one year later than they actually did. All 12 Northern Hemisphere stations-instead of just two-would have witnessed dramatic, far-flung climatic anomalies during the boreal summer of 1884, attributed to atmospheric effects of the explosion of Krakatoa on 27 August 1883 (Lenz, 1886; K.R. Wood, pers. comm. 2014). Those anomalies, in turn, could have re-opened scientists' eyes to catastrophes as agents of change, overcome resistance to continental drift and plate tectonic theory, and ripened both scientific and public appreciation for long-distance linkages in global change earlier in the 20th century. We might now be beyond regarding rapid change as the primary driving justification for polar studies.

As to readability in the sense of legibility, this reviewer found that the printed copy's sans-serif font(s) made distinguishing characters difficult (for illustration: i,I,I,I,I,!,! [Calibri] vs. i,I,1,1,!,! [Times New Roman]). The ambiguity becomes severe where figure legends are reduced in size to 8-point or smaller type (i,I,I,I,I,! [Calibri] vs. i,I,1,1,!,! [Times New Roman]). An illuminated magnifying glass solved my problem for all but a few illustrations and their legends that were decipherable only by opening the digital (pdf) form of the book and magnifying the image (e.g., sub-legible Fig. 2.10-8, p. 325; sub-legible units Fig. 2.2-13, p. 177).

Admittedly, the printed volume is a "page-turner," but in the unusual sense of causing readers to flip back and forth from body text to Front Matter (List of Contributing Authors, Reviewers, and their Affiliations) and to Appendix 11 (List of Acronyms). That Appendix alphabetizes and translates 450 IPY-generated acronyms in a valiant attempt to treat symptoms of economizing on printer's ink, space, and paper. Acronyms proliferate, compete (e.g., Local and Traditional Knowledge, LTK, vs. Traditional Ecological Knowledge, TEK, Ch. 4.5, p. 581), evolve into compound acronyms (e.g., SEARCH for DAMOCLES => S4D, Ch. 3.6, p. 405) and fade to extinction (e.g., SHEBA, Ch. 3.2 References, p. 384). A comparable Tower of Babel phenomenon stimulated a U.S. National Public Radio story on explosive acronym proliferation during the Ebola virus panic of 2014 (Poon, 2014). Predictably, rampant abbreviation becomes

a torrent of invasive jargon and a centrifugal force erecting new barriers to communication across disciplinary, linguistic, and generational boundaries. This criticism is not fault-finding so much as alerting readers to fundamental challenges that widely afflict scholarly publishing.

Offsetting the above cautions, readers' persistence is rewarded through the book by gems of insight whose flavour is worth sampling here. Matthew Fontaine Maury's insertion, to share Carl Weyprecht's credit in the "origination myth" of IPY 1 (p. 5–6), is intriguing because Maury's vision for polar oceanographic studies coincided with his professed belief in the Open (ice-free) North Polar Ocean Theory (Sides, 2014:47). Trackers of publication rates discovered that the volume of public and K-12 educational literature that continued to appear long after the conclusion of IPY 1 consisted primarily of accounts of the tragic finale of the Adolphus Greely expedition to Ellesmere Island, which cost the lives of all but six of 25 officers and men of the U.S. Army Signal Corps by the time rescuers arrived in 1884.

Russian participants in IPY 2007–08 made greatest use of traditional polar research platforms. Not only did they use polar schooner *Tara* during this latest IPY to repeat the 1893–96 transpolar drift in ice by Fridtjof Nansen's *Fram*, but they also occupied drifting ice stations NP-35 and NP-36, in the series that started with Ivan Papanin's NP-1 pagonauts in 1937–38, a specialization inspired by Soviet experiences with sea ice during and shortly after IPY 2.

Analyses of bottom sediments from subglacial Lake Vostok in Antarctica point the way to future methods for detecting life forms beyond Earth. Specific analogs were detected in soil samples from Antarctica's Dry Valleys and samples analyzed by the Phoenix Mars Lander, notably elevated perchlorate (ClO_4) levels.

Chapter 2.10 conveys the palpable combination of energy and novelty accompanying IPY 2007–08's inclusion of social science and humanities. For example, the inclusion had generated "by far the largest share of the first books produced by the ... [IPY] programs.... As of this writing (summer 2010), at least twelve volumes based upon nine IPY projects in the social science and humanities field were already published or are in press..." (p. 318).

A doubter might argue that natural scientists had already "picked the low-hanging fruit" in their narrow fields of polar inquiry, whereas social scientists are just now reaching the point where they too will begin publishing ever smaller units of new understanding. An alternative view is that book-length treatises represent durable trans-disciplinary vigour, in which natural and social sciences interact with community and traditional knowledge to reach new synthetic understanding of polar topics such as sea ice (Krupnik et al., 2010) and social-ecological systems (Lovecraft and Eicken, 2011).

Alongside fresh transdisciplinary insights, polarities seem destined to persist, including those between competition and collaboration, natural and social sciences, hemispheric specializations, books and smallest publishable units, and global and local perspectives. Igor Krupnik, co-editors on the IPY Joint Committee, and all the other contributors deserve a salute for showing us and future scholars how people worked among all these force fields during the planning and execution of IPY 2007-08.

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NORTH BY DEGREE: NEW PERSPECTIVES ON ARCTIC EXPLORATION, edited by SUSAN A. KAPLAN and ROBERT McCRACKEN PECK. Philadelphia: American Philosophical Society, 2013. ISBN 978-1-60618-923-8. xviii + 469 p., 16 contributors, index. Softbound. US\$50.00.

This handsome volume contains most of the papers presented at a conference held in Philadelphia in 2008 to commemorate Robert Peary's 1908–09 North Pole expedition. The gathering was timely, as the Arctic was attracting increasing international attention, although the editors acknowledge that some of today's main preoccupations, such as questions of sovereignty and the scramble for mineral rights, are not covered in this volume.

Part I, "Nationalism and Identity," begins with a paper on Robert E. Peary by Lyle Dick and one on Frederick Cook by Michael F. Robinson. Although the North Pole controversy forms the backdrop to each paper, neither author devotes much space to the century-old dispute. Dick's thesis is summed up by his subtitle, "How and why America's elites made Robert Peary a national icon." His paper describes how America's scientific and political establishment of the Theodore Roosevelt era supported Peary as the ideal model of white masculinity and concludes by identifying the heroic central figure in Charles Knight's popular "Mural of the Neolithic Stag Hunters" as Peary. Robinson's

paper argues that the North Pole dispute has distorted interpretations of Cook, whom he sees as "the archtype of the twenty-first century adventure sportsman" (p. 59): such individuals spend, and make, vast sums of money on their activities. Papers in this section move from individuals to institutions with Frederick E. Nelson's study of the role of the American Geographical Society in sponsoring and recording Arctic exploration. Its founding charter of 1851 encouraged "the advancement of exploration along scientific lines" (p. 71), but financial difficulties and increasing government investment in the Arctic after the Second World War have led to its early role being half forgotten. The final paper in this section, by Tina Adcock, takes four very different figures-George Douglas, Guy Blanchet, Vilhjalmur Stefansson, and Richard Finnie-and examines in what sense they can be regarded as explorers at a time when improved transport links were opening up the Arctic. Reliance on indigenous guides, length of time spent in the North, and accumulation of scientific knowledge might all come into play as different definitions of exploration are adopted and discarded.

Part II, "Culture Contacts, Race, and Gender" begins with Karen Routledge's paper on American whalers in Cumberland Sound on the southeastern coast of Baffin Island in the mid-19th century, some of whom wintered there in order to make an early start on whaling the following spring. Her title, "The Desolate Shores of a Frozen Zone," represents the whalers' view of their environment, a view at odds with that of the Inuit communities, who not only subsisted in the region, but hunted enough to keep the wintering crews alive. Among these some died and many suffered, but their fate had more to do with their inability to adopt Inuit diet and adjust to local conditions than with the inherent hostility of the Arctic environment. Race enters the picture in Emma Bonanomi's paper on Matthew Henson, the black American who accompanied Peary on his controversial Polar journey of 1908-09. It was Henson, described by one of the party as "a dandy sledge maker, good shot, and as good a dog driver as the best Eskimos" (p. 192), who along with four Inughuit accompanied Peary on his final dash to the Pole. This image of multiracial collaboration soon faded on Henson's return to the United States, where his lecture tour-made against Peary's wishes-met a mixed reception from largely white audiences and was a financial disaster. The final paper in this section, by Genevieve M. LeMoine and Christyann M. Darwent, is entitled "Inughuit Women's Role in Culture Contact through Clothing." Illustrated by a dozen photographs and based on interviews and archaeological fieldwork, it assesses the extent to which the clothing of the Inughuit of far northern Greenland was modified during the period of first outside contact in the 19th and early 20th centuries. Metal needles and cloth brought some changes, but a strong sense of identity assured the retention of traditional items of clothing, such as sealskin boots and fur pants.

The first paper in Part III, "Culture of the Explorer" by David H. Stann, deals with the fate of the extensive library

of books taken on the disastrous Greely expedition to Fort Conger, Lady Franklin Bay, and with the role played by Robert Peary in its later disposal. Patricia Pierce Erikson's paper, "Homemaking, Snowbabies, and the Search for the North Pole," on the role of Peary's wife, Josephine, moves from Josephine's work in domesticating their living quarters in the Arctic to the birth of their baby at 77°44' N. It concludes with the symbolic importance of Josephine's gift to her husband of an American flag, pieces of which he deposited on his journey to the Pole.

In Part IV, "Popular Culture," Robert McCracken Peck's paper illustrates the Arctic scenes that decorated ceramics in Britain and the United States during the 19th century. Predictably, polar bears, Eskimos, and icebergs took pride of place on items that ranged from silver commemorative pieces to family tableware. The theme of the Arctic in domestic consumption is continued in Helen Reddick's study of "the polar trek" in children's books. She shows that from the early 19th century to the present day, writers have produced books for children-usually based on a real-life explorer-that sought to involve their young readers in a direct way in the story of Arctic voyages. The next paper shifts from individual readers to mass audiences, as Russell Potter examines the spectacular moving panoramas of Arctic scenes that toured Britain and the United States between 1820 and 1860. In a competitive business, great pains were taken to establish authenticity. Painted images were based on the voyage narratives, approving visits from the actual explorers were recorded, and items from the voyages ranging from ships' boats to husky dogs were incorporated.

Part V looks back to "Technological Advancements." In "The Balloonatic," Huw Lewis-Jones reappraises Commander John Cheyne's proposal for a balloon flight to the North Pole, 15 years or more before Andrée's pioneer attempt in 1897. Cheyne's ambitious scheme featured three linked balloons carrying six men, three tons of equipment, sledges, and a team of dogs. Facing opposition from traditionally minded Arctic enthusiasts, popular derision as well as public interest, and financial shortfalls, Cheyne failed to raise enough support. In her paper, Anne Witty praises the S.S. Roosevelt (in Peary's words, his "little black ship, solid, sturdy, compact, strong and resistant as any ship built by mortal hands can be," p. 383), which took him on his polar voyages of 1905-06 and 1908-09. Witty describes the advanced design of the vessel and how on her first polar voyage, despite some unexpected defects, she brought her crew safely home. In the longest paper in the volume, Susan A. Kaplan examines the technological advances associated with the three Arctic expeditions of Donald B. Mac-Millan between 1913 and 1924. Photographers took both still and moving pictures of the lands and peoples visited (5500 photographs and 12000 feet of motion film on one expedition alone), while attempts at wireless communication finally succeeded on the last expedition. Audiences at home could view extraordinary scenes on film, and for the crew, two-way wireless links helped to remove the sense of isolation associated with Arctic ventures. One expedition

member went as far as to say, "The long Arctic night, so much dreaded by explorers of old, has no terrors for the crew" (p. 446).

In total, this miscellany shows a healthy disregard for the usual boundaries of Arctic exploration histories as the paper-givers pursue byways and detours that take them well away from mainstream accounts. The presentations in this volume are helped by an array of illustrations, the number and quality of which are beyond the reach of most publishers, and by plentiful annotations. These latter should be particularly helpful to younger scholars looking for promising research topics in less conventional fields of Arctic studies. One minor criticism might be made. The editors refer to the spirited and engaging discussions that followed the hearing of the papers; it is perhaps a pity that there is no record of them here.

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ICE SHIP: THE EPIC VOYAGES OF THE POLAR ADVENTURER *FRAM*. By CHARLES W. JOHNSON. Lebanon, New Hampshire: University Press of New England, 2014. ISBN 978-1-61168-396-7. xiv + 318 p., maps, b&w illus., notes, references, index. US\$35.00.

In early August of 1977, I walked along the shore of Fram Havn, a small, protected bay on the west shore of Rice Strait, where in the fall of 1998, Otto Sverdrup brought the sturdy vessel *Fram* into the first of four wintering sites on Ellesmere Island. Sverdrup's (1904) account of his expedition, with its excellent maps and notations of several ancient site locations, had brought us to this part of the High Arctic in search of evidence of prehistoric activities. During the following 12 summers, we were regular visitors to many of the places noted and recorded by Sverdrup and his men. All that to say that any new book about the amazing vessel *Fram*, and the three principal expeditions in which it played a most decisive role, was of personal interest.

One of the early works about the famous Norwegian vessel was written by Odd Arnesen (1942). In *Fram: Hele Norges Skute*, Arnesen provides a great many details about the design and construction of the vessel, but gives less attention to the three major expeditions in which *Fram* participated. Charles W. Johnson's "*Ice Ship*" deals far less with the construction and history of the ship and devotes most of the text to the three major expeditions associated with the vessel.

In the Prologue, the author describes how, in 1884, the discovery of a number of items from the crushed De Long expedition ship, USS *Jeannette*, found on an ice-floe by

Inuit hunters in southwest Greenland, eventually came to the attention of the Norwegian scientist and eventual explorer, Fridtjof Nansen. Polar exploration was a popular topic, perhaps more in Norway, a relatively new nation in need of heroes, than in most places. In 1888, Nansen made his mark in the polar annals by crossing the inland ice of Greenland from east to west. With him on the crossing was his countryman Otto Sverdrup, who would become an essential figure in Nansen's plan to drift onboard a vessel across the polar basin in order to discover how the Jeannette remains had appeared off the coast of southwest Greenland (and possibly answer other questions). In the final part of the Prologue, the reader is introduced to Colin Archer, the Norwegian shipwright who accepted the challenge of designing and building a wooden vessel specifically designed to survive the immense pressure pack ice could exert against the hull of trapped vessels, a force usually sufficient to crush and sink ordinary ships. On October 26, 1892, the newly christened vessel slipped down the shipyard ways in Rekkevik, Norway, and Fram was born.

The author has put together a compelling story about the three larger-than-life characters, Fridtjof Nansen, Otto Sverdrup, and Roald Amundsen, who carried out extraordinary polar adventures, to both north and south, in the ice ship. The book is divided into four parts, the first three of which are devoted to the expeditions in which *Fram* served as both transport and home for many years.

Part I describes the first expedition under the leadership of Nansen from 1893 to 1896, with Sverdrup as the ship's captain. The primary source for this part of the book is Nansen's own account of the drift across the polar basin and his departure from the vessel, accompanied by Hjalmar Johansen, in an unsuccessful attempt to reach the North Pole (Nansen, 1897). After Nansen and Johansen departed, it was left to Otto Sverdrup to take charge of the remaining drift expedition and return the ship and crew to Norway. The author correctly points out that tension onboard *Fram* eased considerably after Nansen's departure. It was Nansen's good luck that *Fram* survived the remaining drift under Sverdrup's superb leadership. As it was, Nansen's departure was seen by some critics as a rash abandonment of responsibility for the expedition.

Part II covers the second expedition from 1898 to 1902, under the exemplary leadership of Otto Sverdrup. The primary source is Sverdrup's own account of the four-year expedition, during which most of the Canadian High Arctic islands were mapped and studied. As a result of this expedition, Sverdrup urged the Norwegian government to lay claim to the entire region (Sverdrup, 1904). The claim played an important role in Canada's quest to secure the High Arctic Islands as sovereign territory, a claim that was finally settled by the Canadian government's payment to Sverdrup (and his estate upon his death) to cover expenses incurred during the expedition and resulting production of maps and pertinent information about the region.

In Part III, the author tells the story of Roald Amundsen's amazing and deceptive dash to the South Pole. As is the case throughout Johnson's book, his telling of the principal expeditions goes well beyond the part that involves Fram. In the case of Amundsen, the reader is first introduced to the explorer's participation in the earlier Belgian Antarctic Expedition. This is followed by an account of Amundsen's journey through the Northwest Passage in Gjøa. Eventually the reader is brought back to the point when Amundsen was able to acquire Nansen's blessing for the use of Fram, in which he and his men and dogs were transported to Antarctica. While the Amundsen shore party was busy getting to the South Pole ahead of Robert Falcon Scott, Fram, under the leadership of Captain Thorvald Nielsen, headed out on an exceptional survey of the stormy seas surrounding Antarctica and a trip to Buenos Aires for repairs and supplies. Greater coverage of this part of the "Ice Ship's" activities would have been a suitable expansion of Part III.

In Part IV, the author provides a rather swift summary of the "post-expedition" lives of the principal actors in the "Fram saga," as well as a brief account of the final disposition of the vessel. This part of the book seems particularly rushed and attempts to cover too much material in a short space. The author is clearly very familiar with Arctic exploration literature. By using Fram as a centrepiece, he has broadened the scope of the book far beyond episodes directly related to the history of the vessel. His presentation includes many sidebar statements on topics such as polar ice in general, personal experiences in the Arctic, comments on polar seasons, and the general differences between the two polar regions. The importance of these sidebars to the overall presentation is not altogether clear. I suppose that for the reader not familiar with the Arctic and Arctic exploration literature, the coverage is commendable and should provide an incentive for additional reading.

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PAPERS TO APPEAR IN ARCTIC

- Pearce, T., Ford, J., Willox Ashlee, C., and Smit, B. Inuit Traditional Ecological Knowledge (TEK), Subsistence Hunting and Adaptation to Climate Change in the Canadian Arctic.
- Kullman, L., and Öberg, L. New Aspects on High-Mountain Palaeobiogeography: A Synthesis of Data from Forefields of 78 Receding Glaciers and Ice Patches in the Tärna and Kebnekaise Mountains, Swedish Lapland.
- Harwood, L.A., Smith, T.G., Auld, J.C., Melling, H., and Yurkowski, D.J. Seasonal Movements and Diving of Ringed Seals, *Pusa hispida*, in the Western Canadian Arctic, 1999–2001 and 2010–11.
- Cox, D., and Mills, S. Women's Participation in the Voisey's Bay EA: Impacts on EA Recommendations, Impact and Benefit Agreements and Women's Employment Outcomes.
- Duhaime, G., and Édouard, R. Monetary Poverty in Inuit Nunangat.
- Naves, L.C., Simeone, W.E., Lowe, M.E., McCall Valentine, E., Stickwan, G., and Brady, J. Cultural Consensus on Salmon Fisheries and Ecology in the Copper River, Alaska.
- Ajmi, A.R. Behavioral Observations of Osprey Breeding on Fort Wainwright, Alaska.
- Nielsen, N.H., Laidre, K., Larsen, R.S., and Heide-Jørgensen, M.P. Identification of Potential Foraging Areas for Bowhead Whales in Baffin Bay and Adjacent Waters.
- Roy, V., Iken, K., and Archambault, P. Regional Variability of Megabenthic Community Structure across the Canadian Arctic.
- Saulnier-Talbot, É., Larocque-Tobler, I., Gregory-Eaves, I., and Pienitz, R. Response of Lacustrine Biota to Late Holocene Climate and Environmental Conditions in Northernmost Ungava (Canada).
- Khidas, K. The Canadian Arctic Expedition 1913–18 and Early Advances in Arctic Vertebrate Zoology.
- Loring, P.A., and Gerlach, S.C. Searching for Progress on Food Security in the North American North: A Research Synthesis and Meta-Analysis of the Peer-Reviewed Literature.
- Devlin, C.L. The Influence of Whaler William Scoresby, Jr. on the Arctic Observations of Sir James Lamont.
- Young, B.G., Ferguson, S.H., and Lunn, N.J. Variation in Indices of Ringed Seal Density and Abundance in Western Hudson Bay Determined from Aerial Surveys, 1995 to 2013.
- Jantunen, J., Leafloor, J.O., and Scribner, K.T. Nesting by Canada Geese on Baffin Island, Nunavut.
- Kardynal, K.J., Bartzen, B.A., and Latour, P.B. Avian Communities of the Northern Mackenzie Mountains, Northwest Territories, Canada.
- Noble, B., and Hanna, K. Environmental Assessment in the Arctic: A Gap Analysis and Research Agenda.

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LETTER TO THE EDITOR

Re: Eigil Knuth Manuscript

Dear Editor:

Count Eigil Knuth carried out paleohistory investigations in Greenland and especially Northeast Greenland for 60 years. In 1955, he and a companion manhauled their gear from Station Nord into the interior of Danmark Fjord to conduct archaeological excavations. In 1958, he published a 50-page popular report of that work titled, *Det Mystiske* "X" I Danmark Fjord. The "X" refers to a site marked on a map of the fjord, which was recovered from the disastrous Danmark Expedition (1906–08) of Ludwig Mylius-Erichsen. Knuth's report includes a discussion of the fate of that expedition.

Knuth's report has been translated into English and a copy may be obtained from me by request.

Sincerely,

Spencer Apollonio 43 Eastern Avenue Boothbay Harbor, Maine 04538 USA