

SHIPWRECK AT CAPE FLORA: THE EXPEDITIONS OF BENJAMIN LEIGH SMITH, ENGLAND'S FORGOTTEN ARCTIC EXPLORER. By P.J. CAPELOTTI. Calgary, Alberta: University of Calgary Press and the Arctic Institute of North America, 2013. ISBN 978-1-55238-705-4. Northern Lights Series No. 16. xxx + 269 p., maps, b&w illus., notes, appendices, selected bibliography, index. Softbound. Cdn\$39.95; US\$41.95. Also available at [www.uofcpress.com](http://www.uofcpress.com) as an open access ebook.

Benjamin Leigh Smith (1828–1913) was in many ways unique among 19th century Arctic explorers. He was a member of a Nonconformist or Dissenting family, which meant that, not being members of the Church of England, they could not hold government office or serve in the army, or take a degree from Oxford. While they could attend Cambridge University, they could not be awarded a degree from that institution. Benjamin Leigh Smith's father, also Benjamin, had inherited substantial wealth and hence could afford to flout the conventions of British upper-class society. It was a measure of his refusal to accept society's norms that he had two (and possibly three) wives and families simultaneously, maintaining each at a different socio-economic level, possibly as an unusual socio-sexual experiment. It was Benjamin Jr.'s good fortune that he was born into the family that his father maintained at a very comfortable level.

It was perhaps in part because of his Nonconformist background or this unusual family that Leigh Smith, as an Arctic explorer, assiduously shunned publicity, published nothing about his expeditions, never accepted awards or lectured on his expeditions in person, and allowed others to publish his scientific results. Summaries of his various voyages were published in the *Proceedings of the Royal Geographical Society*, usually written by its President, Sir Clements Markham, but Leigh Smith never attended the meetings at which these summaries were read out. Yet, as an Arctic explorer and oceanographer, Benjamin Leigh Smith had few equals.

To set the scene, Capelotti has summarized earlier expeditions to one of the areas where Leigh Smith would make his mark, namely Svalbard; these include the voyage of Constantine John Phipps (later Baron Mulgrave) in 1773, Sir W.E. Parry's attempt at the North Pole from Svalbard in 1827, and Lord Dufferin's cruise in *Foam* to Iceland and Svalbard, the focus of which was hunting, in 1856.

Meanwhile, on Leigh-Smith's 21st birthday in 1849, his father had fixed on him the substantial annual income of £300. He attended Jesus College, Cambridge, and, since that University had begun to permit Nonconformists to graduate in 1856, he attained his bachelor's degree in 1857. When Benjamin Sr. died three years later, Benjamin Jr., at age 32, inherited a fortune in money and extensive estates in East Sussex and the Weald of Kent.

Shortly thereafter, James Lamont was making headlines with his hunting trips to the Arctic, especially Svalbard,

initially in the chartered *Anna Louise* in 1859 and from 1869 until 1871 in his specially built vessel, *Diana*. It was undoubtedly the press coverage of Lamont's voyages, plus his books, that decided Leigh Smith to head for the Arctic himself. In the interim, he had obtained his master's ticket so that he could command his own vessels. In the spring of 1871, he bought the topsail schooner *Sampson* and headed north in her, bound for Svalbard, with a Norwegian crew. Leigh Smith's primary interests were scientific, in contrast to those of Dufferin and Lamont. As *Sampson* sailed north, Leigh Smith established several oceanographic stations, recording water temperatures at various depths and collecting seabed samples. He was among the first, if not the very first, to identify a layer of relatively warm water beneath a colder surface layer, the warmer water representing the northernmost branches of the Gulf Stream, or more properly, the North Atlantic Drift. Having called at the old Dutch whaling settlement of Smeerenburg, Leigh Smith worked his way east along the north coast of Spitsbergen despite difficult ice conditions, then south down Hinlopenstretet as far as Wilhelmøya, back north again and east along the north coast of Norraustlandet to within sight of the cape later named Kapp Leigh Smith, the easternmost point of Nordaustlandet. Returning via the Sjuøyane on 11 September, he pushed north to a latitude of 81°25'00" N, which would turn out to be his personal highest latitude. By 27 September, after sounding and surveying in Wijdefjorden while the crew hunted reindeer, Leigh Smith was back at Tromsø, having mapped 22 new islands and bestowed 33 new place names, many of them after friends and family members. This was quite a remarkable achievement for his first Arctic voyage, quite apart from his oceanographic measurements.

In 1872, Leigh Smith headed north again in *Sampson*. She put to sea from Hull on 13 May and by 3 June was off Jan Mayen. From there Leigh Smith headed northeast along the edge of the pack ice, establishing 14 oceanographic stations along the way and again finding a layer of warmer water at depth. Ice conditions were more severe than the previous year, but on 28 July Leigh Smith reached the unique donut-shaped Møffenøya. Then he swung south again into Wijdefjorden, where he deliberately beached his ship to repair a persistent leak; in the meantime, he and the crew shot 36 reindeer. Getting under way again, he encountered A.E. Nordenskiöld in *Polhem* off Fair Haven, on his way to try to establish a base hut on Parryøya, from which he planned an attempt to reach the North Pole across the ice. Baffled by the difficult ice conditions, Leigh Smith now headed south, calling at Kongsfjorden, Grønfjorden, and Prins Karls Forland. *Sampson* returned to Hull on 26 September.

For his 1873 cruise Leigh Smith chartered Lamont's *Diana*, but also employed *Sampson* as a support vessel. *Diana* put to sea from Dundee on 10 May and by 7 June was off Kongsfjorden. By the 13 June, she had reached Mosselbukta on the east side of the entrance to Wijdefjorden. There Leigh Smith found not only Nordenskiöld's

*Polhem*, but also his two support vessels, *Onkel Adam* and *Gladan*. Caught in the fast ice by freeze-up in the fall, all three vessels had endured a wintering instead of just *Polhem*, which meant that the provisions intended just for *Polhem*'s crew had had to be shared among three crews. Scurvy had become rampant among the crews of the support vessels, and there had been at least one death. *Diana*'s crew sledged an abundant supply of provisions, including lime juice, potatoes, and fresh vegetables, across the 6 km of fast ice that imprisoned the Swedish ships, and within a week all the scurvy cases had recovered.

Thereafter Leigh Smith pushed east along the north coast of Nordaustlandet, as far as the Sjuøyane, then back west to Sorgfjorden for a rendezvous with *Sampson*, from which coal and provisions were transferred. Heading next south down Hinlopenstretet and along the south coast of Nordaustlandet, *Diana* advanced to within sight of Kapp Mohn, the southeasternmost point of that island; thus, in conjunction with the 1871 voyage to Kapp Leigh Smith, Leigh Smith had almost circumnavigated Nordaustlandet. Returning via Hinlopenstretet, on his homeward voyage Leigh Smith called at Hopen and was back at Dundee by 26 September. In the spring of 1874, Leigh Smith was awarded the Order of the Polar Star by King Oscar II of Sweden and Norway for having rescued Nordenskiöld's expedition. Typically, he declined to appear in Stockholm to receive it in person.

After a hiatus of several years, Leigh Smith decided for his next Arctic endeavour to have his own ship built to his specifications. This was *Eira*, a three-masted barquentine with a 50 hp steam engine, built at Peterhead and launched in early May 1880. Significantly, in the interim the Austro-Hungarian North Pole Expedition on board *Tegetthoff*, commanded by Karl Weyprecht and Julius Payer, as it drifted with the ice to the north of Novaya Zemlya, had accidentally discovered Franz Josef Land, and Payer, travelling by sledge, had explored a substantial eastern portion of the archipelago, all the way north to Cape Fligely, its northernmost tip, in the spring of 1874. Leigh Smith had taken careful note of these discoveries.

*Eira* put to sea on her maiden voyage on 19 June 1880. Blocked by ice from reaching Jan Mayen or the East Greenland coast, Leigh Smith headed for Svalbard again. Finding the north coast solidly icebound, he swung back south, around Sørkapp and east towards Franz Josef Land, the western extent of which was still totally unknown. Leigh Smith's landfall was small May Island, off the south coast of Hooker Island on 14 August. Then, heading west along the south coast of the archipelago he discovered and named Northbrook Island, Cape Flora, Nightingale Strait (named after his cousin Florence Nightingale), Mabel Island, Eira Harbour, Bruce Island, De Bruyne Strait, Bell Island, Cape Neale, Alexandra Land, Gray Bay, Cape Ludlow and Cape Lofley. In total he had explored 110 nautical miles of the southern coasts of the archipelago. Running back east to Cape Tegetthoff, he left the archipelago on 1 September, and after a brief visit to Storfjorden on Svalbard, he headed

for home. He was back at Peterhead by 12 October. Soon afterwards he was awarded a medal by the French Geographical Society and also the Patron's Gold Medal of the Royal Geographical Society. Predictably, he did not appear in person to receive either award.

Clearly seeing Franz Josef Land as "unfinished business," Leigh Smith put to sea from Peterhead on board *Eira* again on 14 June 1881. By 23 July *Eira* was off Alexandra Land. Reaching the sheltered waters of Eira Harbour, between Bell and Mabel Islands, her crew landed and erected a substantial, prefabricated wooden house on Bell Island. It was named Eira Lodge. Leigh Smith saw it as a base for future explorations of the archipelago. Heading east, by 16 August *Eira* was moored to the edge of the fast ice, just east of Cape Flora on Northbrook Island. Leigh Smith and companions pursued geology and botany on the island, but on 21 August, when the tide turned, the ship was caught between the advancing pack ice and the fast ice and was irreparably holed. Fortunately she took a long time to sink, and her crew was able to salvage a remarkable amount of provisions, coal, and equipment, all of which was moved safely ashore. An attempt to reach Eira Lodge by boat was blocked by ice. Instead, a substantial stone hut, roofed with spars and sails and called Flora Cottage, was erected on shore. Leigh Smith and his men then settled down for a relatively comfortable winter, the provisions they had salvaged being augmented by the meat of 34 bears and 24 walrus, plus vast numbers of murre and dovekeys before they disappeared before the winter and after they returned in the spring. Blubber lamps provided illumination, while driftwood and the coal they had salvaged from the ship provided heat and fuel for cooking. In early May, the four boats they had salvaged from the wreck were overhauled, and in June a boatload of supplies was brought from Eira Lodge.

On 21 June they put to sea in the four boats, southward bound across a substantial polynya. Having sailed south for 20 hours, they were brought to a halt by pack ice; thereafter they struggled south, hauling the boats across the ice and rowing or sailing along any lead that presented itself. They reached open water on 1 August 1882, and the coast of Novaya Zemlya a day later. On the following day, in the western entrance to Matochkin Shar, they encountered the Dutch research vessel *Willem Barents*, as well as the Scottish whaler *Hope*, which had been chartered by Sir Allen Young specifically to search for Leigh-Smith and his men. Remarkably, Leigh Smith and his men were found to be in excellent health, with no signs of scurvy. On 20 August the rescued men on board *Hope* reached Aberdeen, to a tumultuous welcome. Leigh Smith never returned to the Arctic, devoting the rest of his life to his London townhouse and his East Sussex estates.

Capelotti has produced a comprehensive, well-written, and well-researched account not only of Benjamin Leigh Smith's Arctic expeditions, but also of his unusual family background and his eccentricities. Given that Leigh Smith himself never published anything about his expeditions, this is an impressive accomplishment. Capelotti

has relied heavily on manuscript materials, for example, Leigh Smith's own journal of his first voyage on board *Sampson*, held by Special Collections, Edinburgh University Library, and a range of journals and logs held in the archives of the Scott Polar Research Institute, such as the journal of Lt. Herbert Chermiside for the 1873 voyage in *Diana* or the log of the 1881 voyage kept by Captain William Lofley. Capelotti is also to be commended for having contacted Leigh Smith's great-great-grand-niece, Charlotte Moore, whom he visited on several occasions and who gave him access to family correspondence in the archives of the family home at Hancox, East Sussex. Capelotti has made a valuable contribution to Arctic historiography by so effectively bringing this brilliant, publicity-shy eccentric out of the shadows. Those interested in Arctic exploration and science, especially with regard to Svalbard and Franz Josef Land, will find this book captivating.

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**CHANGING COLD ENVIRONMENTS: A CANADIAN PERSPECTIVE.** Edited by HUGH FRENCH and OLAV SLAYMAKER. Oxford: Wiley-Blackwell, 2012. ISBN 978-0-470-69969-0. xviii + 321 p., 16 contributors, maps, b&w illus., 20 colour plates, index. Softbound. Cdn\$74.95.

Canada's cold environments encompass a wide diversity of geography, ecology, and culture, and the theme of climate change is now central to any serious discussion of this immense region. *Changing Cold Environments: A Canadian Perspective*, edited by Hugh French and Olav Slaymaker, is a compilation of chapters by leading scientists on a broad range of geographic topics that define Canada's changing cold regions. Readers are introduced to physical, ecological, and societal aspects of Canada's cold regions, with specific focus on the cryosphere and environmental change. Several recurrent themes, including spatial and temporal variability, the notion that contemporary conditions of the cryosphere bear the legacy of the past, and the implications of environmental change on society, help to link the diverse topics. However, these threads are not consistently woven through all chapters of the book, and although the technical content of individual chapters is strong, some sections of the book lack connectivity.

The primary strength of *Changing Cold Environments* is the high technical quality of individual chapters. The book is divided into three sections: 1) Spatial and Temporal Variation in Canada's Cold Environments, 2) The Cryosphere, and 3) The Ever-Changing Scenery. The first section

features chapters on the spatial and temporal aspects of landscape and ecosystem evolution that have given rise to the present day landscape. A bridge to the second section of the book—The Cryosphere—is provided by a good summary by Roger Barry and Mark Serreze entitled “The Changing Climate,” which places contemporary climate change into the context of climate history over the past 3.5 Ma. The remaining chapters provide concise overviews of fundamental cryospheric components, including hydrology, permafrost, lake and river ice, and sea ice. This section of the book is well written and rich in content. The final section of the book—The Ever-Changing Scenery—comprises an eclectic mix of chapters that integrate some of the themes and materials presented earlier in the text through the topics of the changing tree line, geomorphic change in the Arctic and in temperate mountains, cold-climate mountain hazards, and societal aspects of cold-regions environmental change. The application of knowledge on environmental systems and climate change to infrastructure design, adaptation planning, ecosystem management, and environmental assessment are enormous challenges that are faced in Canada's cold regions. These topics receive brief attention from some authors and more focused attention in the chapters entitled “Risk in Cold-Climate Hazards in the Cordillera,” by Jim Gardner, and “Societal Aspects of Changing Cold Environments,” by Gita Laidler.

The text is appropriate for senior undergraduate students and graduate students interested in cold climate science and Canada's North. Each chapter is accompanied by ample references that allow the reader to pursue further research if desired. There are numerous informative figures and maps, and the majority of illustrations serve well to support the authors' points. The broad-scale hydro-climate or sea ice maps vary in the quality of their reproduction and sometimes lack adequate reference points, which can make their interpretation challenging. The introductory chapter by French and Slaymaker provides an overview of Canada's cold regions. The authors begin this chapter by outlining publications with contrasting positions on contemporary climate change. I was surprised by French and Slaymaker's reluctance to comment on these conflicting views and found this a curious tone to set in the introduction of a book on changing cold environments. The introduction also contained a section that emphasized the ambiguity of available data on climate change impacts. While a cautionary approach can be viewed as commendable, and the need to continue long-term data collection is critical, the message here did not seem consistent with the detailed evidence of climate warming impacts on cold regions found in other chapters. The objective may be to stimulate discussion, but the materials as presented could be confusing to the uninitiated reader. For example, the authors correctly state that the temperature of cold permafrost in the northern Mackenzie Valley has risen over the past few decades, and the lack of significant increases in the temperatures of warm permafrost in the southern Mackenzie Valley is used as an example of ambiguity. However, the authors neglect to explain