Bibliography on the History of Arctic Marine Science of the 20th Century

By: Deborah Day
Archives, Scripps Institution of Oceanography, UCSD

Introduction

This is a bibliography on the history of marine science in the Arctic for the 20/21st century. It was prepared to aid historians interested in marine science research in the Arctic. This is a very small and specialized slice of the much larger literature on polar exploration and discovery.

During the last ten years, the number of websites related to the polar science has proliferated, and the number of online catalogs to libraries with strength in polar research has greatly increased. The literature of the Arctic includes citations in more than a dozen languages. The web makes a lot of citations available that were once difficult to find in libraries. Librarians in Canada, Germany and other countries have made Russian literature on the Arctic more accessible by translating some works. Despite these improvements, it continues to be difficult to access specific works in the original language. So I have listed several important websites that include bibliographies or online library catalogs rich in Arctic sources.

This bibliography includes citations that document oceanographic expeditions in the Arctic. This includes expeditions by ship that took soundings, dredged, collected specimens and did other oceanographic work. A lot of oceanographic data was and is taken on routine expeditions of icebreakers and military vessels. I excluded purely military operations in the Arctic, one-man endurance trips on sledges, land-based expeditions to Arctic islands and scientific expeditions with objectives that were exclusively related to ethnography and anthropology. This bibliography includes very little information on Arctic whales and whaling, which has an enormous literature of its own. It excludes the growing literature on polar physiology, medicine, pharmacology and the outfitting and nutrition on polar voyages. I have included just a few items on medical issues related to Arctic expeditions, but the literature on the physiology of cold regions is much larger. This bibliography includes very few citations documenting petroleum exploration in the far north. Even with this very narrow definition of Arctic marine science expeditions, it is very difficult to compile a comprehensive list of expeditions to the Arctic. Tore Frängsmyr estimates that there were 35 Swedish expeditions to the Arctic before 1910. Ira Wiggins recalls that beginning in 1947 10 to 80 scientists worked in the Arctic Research Laboratory in Barrow every summer. A lot of these researchers were working on marine topics.

It becomes harder, not easier, to identify Arctic marine science expeditions as one moves from 1900 to the current period, because oceanography has itself changed greatly in
recent decades. For the first half of the twentieth century oceanography was done by ship, although there were important polar flights, some of which had scientific objectives or were related to ship-based operations. A great deal of oceanography since 1960 has been done with data collected by remote sensing, drogues and other instruments, and some contributors to the marine science of the Arctic haven’t even visited the Arctic.

This bibliography includes material by scientists, historians, biographers, and other scholars. It focuses on oceanography, and does not include the history of cartography for the Arctic regions; marine architecture related to icebreakers, or history of technology. It includes a few items related to meteorology and glaciology, but the literatures of these fields abound in polar material.

Some of the citations in this bibliography are from the scientific literature. During the early 1900’s oceanographers and other scientists included historical summaries in the narrative scientific reports of their own expeditions, and this material can be quite valuable to historians. It used to be traditional to include a history as the introduction in the texts for field sciences, but this practice has been discontinued. The reviewers for The Oceans, the Sverdrup, Johnson and Fleming 1942 textbook in oceanography actually criticized the authors for not mentioning Matthew Fontaine Maury in their book.

This bibliography does not list manuscripts, expedition films, televised histories, or recorded interviews with scientists, although these sources are numerous and rich. The bibliography does include some biographies and autobiographies of Arctic marine scientists, and some obituaries of scientists, ship captains, and expedition participants. This is just a sample of the much larger literature of biographies of Arctic explorers. Even brief obituaries can be extraordinarily helpful to historians interested in Arctic science. Some obituaries cite speeches, memoirs and reminiscences, hidden in the gray literature. These sources describe the personal challenges of working in the Arctic and differ from research results reported formally in the scientific literature.

**Bibliographies**

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Arctic information and data: A guide to selected resources, compiled and edited by Martha Andrews and members of the U.S. Polar Information Working Group; supported

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Cumulative Bibliography on the History of Oceanography http://scilib.ucsd.edu/sio/indexes/cbho.html [Created by the Commission of Oceanography of the International Union of the History and Philosophy of Science, Division of History of Science, this bibliography covers the period 1923 to the present. It is updated annually in the History of Oceanography newsletter edited by Eric L. Mills.]


History of Oceanography Newsletter [A current bibliography on the history of oceanography is included in this newsletter of the Commission of Oceanography of the International Union of the History and Philosophy of Science, edited by the President, Eric L. Mills. Recent issues are available in digital format at http://www.ijnhonline.org/]


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Websites:

Alfred Wegener Institute website has only a short history of German polar research, but its Library site http://www.awi-bremerhaven.de/Library/index.html
Is accessible online

Danish Polar Center [http://www.dpc.dk/PolarLibrary/Start.html](http://www.dpc.dk/PolarLibrary/Start.html)
And its Danish Arctic Institute host a library, archives and photo collection documenting Danish Arctic research.

is guide to Internet resources dealing with the lands and waters surrounding the North Pole and the South Pole. Polar Web is a collaborative project of the Polar Libraries Colloquy and the Arctic Center

The National Oceanic and Atmospheric Administration (NOAA) has an ocean exploration site that provides access to library, photographic and historical sources, including current research in the Arctic [http://oceanexplorer.noaa.gov/history/history.html](http://oceanexplorer.noaa.gov/history/history.html)

Posts papers from the VII International Congress on the History of Oceanography, including many papers on marine science of the far north, especially valuable documentation of Russian contributions.

The Norwegian Polar Institute [http://npiweb.npolar.no/](http://npiweb.npolar.no/)
Website includes information on books, exhibits, and historical photographs on Norwegian research in polar regions.

Scott Polar Research Institute, University of Cambridge [http://www.spri.cam.ac.uk/library/](http://www.spri.cam.ac.uk/library/)
This library database includes connections to the archives, photograph collection and special databases such as SPRILIB Russian North. Scott Polar Research Institute website also includes a descriptive list of museums with collections relating to the Arctic and Antarctic.

U.S. Coast Guard webpage on the history of icebreakers [http://www.uscg.mil/hq/g-cp/history/Icebreakers.html](http://www.uscg.mil/hq/g-cp/history/Icebreakers.html)

Includes a history of the Ice Patrol and biographies of important figures in its history.

The UK Archives Hub [http://www.archiveshub.ac.uk/](http://www.archiveshub.ac.uk/)
provides access to descriptions of archives held in UK libraries, including a lot of arctic expedition published sources, manuscript sources and even digitized photographs. Like a lot of websites, they do web exhibits of photographs and are currently featuring an exhibit entitled Cold Comfort which features the search for the Franklin Expedition.

Woods Hole Oceanographic Institution Beaufort Gyre Exploration Project [http://www.whoi.edu/beaufortgyre/history.html](http://www.whoi.edu/beaufortgyre/history.html) has a website that includes a history of
geographic and scientific exploration of the Arctic, including a list of expeditions from the 19th to 21st centuries.

**Monographs and Journal Articles**


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The 20th century was a very vibrant period for the scientific fraternity. With improved technologies available for scientific enquiries, several significant inventions and discoveries happened in the 20th century. Enrico Fermi, credited with discovering how to create a nuclear chain reaction, which led directly to the creation of the atomic bomb, was born at the dawn of the century as was Nikolaas 'Niko' Tinbergen, Dutch biologist and ornithologist. Clinton Richard Dawkins, an English ethologist, evolutionary biologist and author, is among the scientists who were born in the mid-20th century. Arctic - Arctic - Study and exploration: The earliest references to Arctic exploration are shrouded in obscurity as a result of inaccurate ideas of the shape of the Earth and of primitive navigation techniques, which make it difficult to interpret early maps and accounts of voyages. Probably the first to approach the Arctic regions was a Greek, Pytheas, who in the 4th century BCE made a voyage from the Mediterranean, around Britain, to a place he called Thule, variously identified as the Shetlands, Iceland, and Norway. The accounts of this remarkable explorer were for centuries discredite