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

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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
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**

Arctic bibliography. Montreal: McGill-Queen's University Press, 1953-1975. 16 volumes. [Volumes 1-11 were prepared for and in cooperation with the U.S. Dept. of Defense under the direction of the Arctic Institute of North America; v. 12-16 prepared by the Arctic Institute of North America with support of government agencies of the U.S. and Canada. This is the epic arctic bibliography includes 20,000 citations dating back to the 16th century. Marie Tremaine edited the first fourteen volumes.]


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

Arctic Science and Technology Information System. APOA bibliography. Calgary: Arctic Institute of North America, University of Calgary, 1980, 83 pages. [Bibliography reflecting the work of the Arctic Petroleum Operator’s Association (APOA).]


Bibliographie géographique internationale. Paris: Centre National de la Recherche Scientifique (France), 1931-1990. Section G: Regions polaires includes bibliographic references to science in the Arctic.

Cold Regions Bibliography, http://www.coldregions.org/coldinfo.html
[Created by American Geological Institute (AGI) with support from the National Science Foundation, requires a subscription to use. This bibliography is strong in cold physiology, polar diving, military applications, but less strong in marine sciences.]

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.iijnonline.org/]


McAllister, Don E. Bibliography of the Marine Fishes of Arctic Canada. University of British Columbia Institute of Fisheries Museum, Contributions No. 8, 1966.


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)

The U.S. Coast Guard International Ice Patrol website
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**


The academic research fleet: A report to the Assistant Director for Geosciences by the Fleet Review Committee. Arlington, Virginia: National Science Foundation, 1999 1 volume. [Description of the American academic oceanographic fleet.]


Ahlmann, Hans W:son. Scientific results of the Norwegian-Swedish Expedition in the summer of 1931. Geografiska annaler 15 (1933), Häft 1-2. [This includes Ahlmann’s general outline of the expedition.]


Al'banov, Valerian Ivanovich. Podvig shturmana. Moscow, 1953. [Description of the 1913 Gregory Brusilov St. Anna expedition by the navigator]

of the white death. Events and diary records of the first expedition of Steersman Albanov der Brussilov (1912-14) on his voyage on board the "St. Anna" to Kap Flora.]


Amdrup, Georg Carl, 1866-. Grønland i tohundredaaret for Hans Egedes landing; budg. af Kommissionen for ledelsen af de geologiske og geografiske undersøgelser i Grønland under redaction. København: C.A. Reitzel, 1921, 2 volumes.

Amdrup, Georg Carl, 1866-. Hydrografi fra Skibsexpeditionen til Grönlands Østkyst 1900. Meddelelser om Grönland 27 (1902): [Hydrography from the expedition to the east coast of Greenland in 1900.]


The Andrée diaries, being the diaries and records of S. A. Andrée, Nils Strindberg and Knut Frænkel written during their balloon expedition to the North pole in 1897 and discovered on White island in 1930, together with a complete record of the expedition and discovery; authorized translation from the official Swedish ed. By Edward Adams-Ray. London, J. Lane, 1931, 471 pages. [First published in Swedish under the title, Med Örnen mot pollen.]


Angstrom, A. Sven Otto Pettersson. Ymer, 1941: 142-147.


Brower, Charles D. 1863-. Fifty years below zero; a lifetime of adventure in the far North, by Charles D. Brower, in collaboration with Philip J. Farrelly and Lyman Anson. New York, Dodd, Mead and Company, 1965, 1942, 310 pages. [A memoir of life in Barrow before the establishment of NARL.]


Casarini-Wadhams, Maria Pia. By submarine to the Arctic: Sir Hubert Wilkins' Nautilus expedition of 1931 Cambridge: Master’s Thesis, Scott Polar Research Institute, University of Cambridge, 1989, 94 pages.


Dunbar, M.J.  Eastern arctic waters: a summary of our present knowledge of the physical oceanography of the eastern arctic sea, from Hudson Bay to Cape Farewell and from Belle Isle to Smith Sound. Ottawa : Fisheries Research Board of Canada, 1951, 131 pages.


Expeditionsprogramm. Bremerhaven: Alfred-Wegener-Institut für Polar- und Meeresforschung, Arktis 6 (1989), 57. [Expedition program of the FS "Polarstern" in German with some text in English]

Fairley, T.C., editor. Sverdrup’s Arctic Adventures. Adapted from New land: four years in the Arctic regions,by the Norwegian explorer Otto Sverdrup, translated from the Norwegian by Ethel Hariet Hearn. London: Longmans, 309 pages.

Feeney, R. E. Food technology and polar exploration: Problems faced by polar explorers in the 19th and 20th centuries stimulated improvements in subsequent food supplies. Arctic Medical Research 51 (1992), no. 1: 35-46.


Folk, G. Edgar, Jr. and Mary Arp Folk, editors. Vikhjalmur Stefansson and the development of Arctic terrestrial science. Iowa City, Iowa: University of Iowa, 1984, 239, 239 pages.


Goldberg, Fred. Drama in the Arctic. SOS Italia. The search for Nobile and Amundsen. A diary and postal history. Lindingö 2003. [In English.]


Grainger, E.H. M.V. Calanus. Arctic 48 (1995), no. 4: 391-392. [This history of a Canadian marine vessel includes discussion of earlier vessels used to collect data at sea in Arctic waters.]


Henson, Matthew A. A Negro explorer at the North Pole. New York: Frederick A. Stokes, 1912.


Hunkins, et. al. The Fram I Expedition, EOS Transactions of the American Geophysical Union 60 (1979), no. 52: 1043-1044. [Report on a 1976 expedition that attempted to repeat the drift of Nansen's research vessel with the US Coast Guard icebreaker Burton Island.]


Kaczynski, Vladimir. The status and potential of the Soviet ocean science after 200 mile economic zone. Rockville, Maryland: NOAA Office of Policy & Planning, [1984], 60 pages. [Includes description of the Russian oceanographic research fleet, including four polar vessels.]


226. [In Swedish. Life is short but beautiful. Harald Simonsen’s and Torgeir Mökleby’s
diary from Danskön 1922.]

Kjellström, Rolf. Lämnad på Grönlands inlandsis. Thorild Wulffs brev från norra
behind on Greenland’s ice. Thorild Wulff’s letters from northern Greenland, 1917.]

Klenova, M. V. Osadki Arkticheskogo basseina po materialam dreifa l/p "G. Sedov."

Koch, L. The Danish Expedition to East Greenland in 1929. Meddeleser om Grönland
74 (1930) no. 10: 173-205.


Kolchak, A. The Arctic pack and the polynya. In: American Geographical Society of
New York. Problems of polar research: A series of papers by thirty-one authors. New
Karskago I Sibirskago Morei (The ice of the Kara and Siberian Seas), Résultats
scientifique de l’Expédition Polaire Russe en 1900-1903 sous la direction du Baron E.
Toll, Section B: Géographie physique et mathématique, Livraison I. Zapiski Imp. Akad.

Kondrat’ev, K.Y. , V.V. Melent’ev and Yu. I. Rabinovich. Sovetsko-amerikanskii

Kondrat’ev, K.Y. USSR/USA Bering Sea Experiment. Rotterdam: A.A. Balkema, 1982,
307 pages.

Korotaev, K., Miroshnikov, I., Timoshenko, N. and Kiselev, Iu. Podvodnyi Lik Arktiki.

Kotlyakov, Vladimir. International cooperation of Russian glaciologists at Spitsbergen.
In: Breven från arktis. Stockholm: Carlsson, 2003, 157-158. [In English.]

bis 1875. In: Meeresforschung in Hamberg Von vorvorgestern bit übermorgen,
Herausgegeben von Gerd Wegner. Deutsche Hydrographische Zeitschrift,

Krenkel, Ernst Teodorovich, 1903-. Chet tovarischa. Moscow: Khudozhestvennaia
literature, 1940.

Krenkel, Ernst Teodorovich, 1903-. RAEM--moi pozyvnye. Moskva: "Sovetskaia
Krenkel, Ernst Teodorovich, 1903-. RAEM is my Call-Sign. Moscow: Progress, 1978. [English translation of RAEM--moi pozyvnye, biography of a member of the Cheliuskin Expedition of 1933.]


LaFond, Eugene C. Arctic oceanography by submarines. U.S. Naval Institute Proceedings 89 (1960), no. 9, whole number 691: 90-96.


Laktionov, A.F. Oceanographic research in central Arctic: Some problems and results of oceanology research. Articles x-Section of the IGY Program (Oceanology), no. 1 (1959). [In Russian.]


MacLaren, I.S. From exploration to publication: the evolution of a 19th century Arctic narrative. Arctic 47 (1994), no. 1: 43-53. [This doesn’t touch on the 20th century at all, but it explores the motivations for Arctic narratives.]


Makaroff, S. O. The “Yermak” Ice-breaker. The Geographical Journal XV (1900):


Murphy, David T.  German Exploration of the Polar World, 1870-1940. Lincoln, Nebraska; London: University of Nebraska Press, 2002, 273 pages. [Discusses seven German expeditions to the Arctic and Antarctic, including Wegener’s fatal Greenland field trip and the Graf Zeppelin expedition to Franz Josef Land in 1931. Includes a bibliography.]


Naryshkin, G. D. (German Dmitrievich). Sredinnyi khrebet Evraziiskogo basseina Severnogo Ledovitogo okeana, by G.D. Naryshkin; otvetstvenyi redaktor G.B.


Newell, John P. Exceptionally large icebergs and ice islands in eastern Canadian waters: A review of sightings from 1900 to present. Arctic 46 (1993), no. 3: 205-211.


Nobile, Umberto, 1885-. With the "Italia" to the North pole; English translation by Frank Fleetwood. New York, Dodd, Mead & company, 1931, 358 pages.


Palander, L. The surveys of Björnöya (Bear Island) 1922-1931. Norges Svalbard-og Ishavssundersøkelser, Skrifter No. 86, Oslo 1944, 82 pages.


Reedy-Maschner and Herbert D. G. Maschner. Marauding Middlemen: Western expansion and violent conflict in the subarctic. Ethnohistory 46 (1999), No. 4: 703-743


Rüdiger, H. General account of the progress of the expedition to the European Arctic Ocean aboard the steamer Helgoland. Gesellschaft fur Erdkunde zu Berlin, Verhandlungen 25 (1898), no. 8/9: 430-448.


Sandström, Johan Wilhelm, 1874-1947. Den svenska vintern. Svenska Turisföreningens Årsbok, 1936: 201-245. [Includes some autobiographical material.]


Schott, Wolfgang. Early German Oceanographic Institutions, Expeditions and Oceanographers. (Hamburg: Deutsches Hydrographisches Institut, 1987), 50.


The scientific results of the Norwegian Arctic expedition in the Gjøa, 1903-1906, under the conduct of Roald Amundsen. Oslo: I kommisjon hos Cammermeyers Boghandel, 1930-33, 3 volumes.


Scientific Results of the Swedish-Norwegian Arctic Expedition in the summer of 1931, Part I-XIV. Geografiska Annaler, 1933, 1934, 1936.


Seaver, Kirsten A. Narrating the Arctic. A cultural history of Nordic scientific practices. Arctic 56 (2003), no. 3: 305-306.


Shesterikova, A. Daty istorii otechestvennoi aviatsii I vozdukhoplavaniia. Moscow: DOSAAF, 1953. [Brief description of the flight of Yan Nagursky north of the arctic circle in August 1914.]


Sinyukov, V.V. Alexander Vailievich Koltchat as an Arctic explorer. Moscow: Nauda, 2000, 235. [In Russian; summary in English.]


Sörlin, Svenker.  Resa I spåren av det förflutna: A journey to the tracks from the past. Forskning och Framsted 8 (1997): 38-45. [In Swedish.]


Sutton, Jeff.  The Role of imaging radar in the development of the Canadian Arctic: Background and applications. Arctic 44 (1991), supplement 1: 122-129. [A history of imaging radars used in the Arctic since 1960 presented at a conference on remote sensing of Arctic environments.]


Sverdrup, Otto Neumann, 1854-1930. New land; four years in the Arctic regions, by Otto Sverdrup; tr. from the Norwegian, by Ethel Harriet Hearn. London; New York; Bombay: Longmans, Green, and Company, 1904, 2 volumes.


Treadwell, T. K. History of the U.S. academic oceanographic research fleet and the sources of research ships: A report prepared by T.K. Treadwell, D.S. Gorsline, R. West on behalf of the UNOLS Fleet Improvement Committee. College Station, Texas: Texas A & M University, 1988, 55 pages.


Treshnikov, Aleksei Fedorovich. Results of the oceanological investigations by the "North Pole" drifting stations, Polar Geography, 1, 22-40, 1977.


Tymms, F. Aerial navigation in the Arctic, The Oxford University Arctic Expedition, 1924. The Geographical Journal 66 (1925), No. 2: 126-129.

United States Coast Guard. The "Marion" expedition to Davis Strait and Baffin Bay under direction of the United States Coast Guard, 1928. Scientific results. Washington,: U.S. Govt. Print. Office, 1931-37 (3 volumes)


Wegener, Else. Greenland journey, the story of Wegener's German expedition to Greenland in 1930-31 as told by members of the expedition and the leader's diary; edited by Else Wegener with the assistance of Dr. Fritz Loewe. Translated from the 7th German edition by Winifred M. Deans. London and Glasgow, Blackie & son limited, 1939, 295 pages.

Welsh, Harold E. A year on the ice: The SHEBA/JOIS project. Arctic 51 (1998), no. 3: 293-300. [History of the NSF sponsored Surface Heat Budget of the Arctic Ocean (SHEBA) project.]


Yesipov, V.K. Pervaya russkaya ekspeditsiya na Novuyu Zemlyu. Sovetskaya Arktika 9 (1939): 77-85. [In Russian. The first Russian expedition to Novaya Zemlya]

Young, Oran R. The age of the Arctic. Oceanus 29 (1986): 9-17.


Zviagin, V. N. Vitus Bering, kotorogo my ne znaem. The Vitus Bering we do not know. Sudebno-medititsinskaia ekspertiza 38 (1995), no. 2:30-32. [In Russian.]