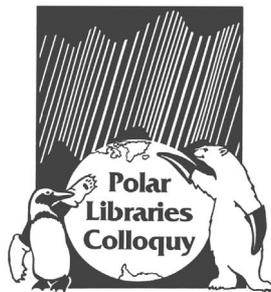


Poles apart – poles on-line

Proceedings of the 19th Polar Libraries Colloquy, 17-21 June 2002, Copenhagen

Edited by Kirsten Caning and Vibeke Sloth Jakobsen



**Danish Polar Center
2002**

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Edited by Kirsten Caning and Vibeke Sloth Jakobsen
Danish Polar Center Publication no. 10. Copenhagen
Danish Polar Center, 2002.

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Cover layout Irene Seiten
Printed by Special-Trykkeriet Viborg a-s

Front cover: Photo from The Arctic Institute collection of historical photographs
showing students from the Teachers College in Godthåb in the 1860'ies.
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Back cover: The participants of 19th Polar Libraries Colloquy gathered outside the venue on 18 June 2002.
Photo Henning Thing/Polarphotos

19th Polar Libraries Colloquy was supported by the IFLA'97 Fund, NordInfo, and Polar Libraries Colloquy.

This publication may be ordered from
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DK-1401 Copenhagen K
Denmark

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Email: dpc@dpc.dk
homepage: www.dpc.dk
Internetshop: www.polarshop.dk

ISBN 87-90369-56-4



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Welcome to the 19th Polar Libraries Colloquy

Hanne K. Petersen
Danish Polar Center

A very warm welcome to Copenhagen, to the Danish Polar Centre and to the 19th Polar Libraries Colloquy! Welcome to participants from all of the Arctic countries, and to friends of the Arctic nations. It is a pleasure to see you here in Copenhagen, and it is a special pleasure once again to welcome the Greenlandic participants to the colloquy.

I hope you will enjoy being in this historic part of Copenhagen. You will find the Danish Polar Centre down the street in the middle of an area where the business of the Royal Greenlandic Trade Company was conducted for more than 200 years, until 15 years ago. Our building used to be a cooper's workshop where the barrels for whale oil were made. It was built in 1806 whereas the big neighbouring warehouse is from around 1765. The big warehouse is now being restored and will become a cultural centre for the North Atlantic nations. In a few years we hope that the former Royal Greenland Trade area will be a centre for North Atlantic culture.

I think this colloquy is important for many reasons, but I would like to focus on two areas.

The Arctic has a growing visibility in the global context.

Capacity building and providing access to knowledge in the arctic regions and about the arctic regions is of paramount importance to issues regarding the global climate change.

During the last century Arctic communities and cultures have remained resilient despite huge social, demographic and technological changes. Arctic populations depend to a certain extent on traditional sources of livelihood, but traditional ways of using the environment and its resources have become economically less viable, partly due to technological advances. New economic activities are urgently needed to support the populations in the Arctic.

The Arctic is a very special component in the di-

versity of life on Earth, but apparently it serves also as a basin for global pollution transported mainly by atmospheric and ocean pathways from sources located far away from the region. Even if much of the Arctic remains in a natural state, its nature and wildlife is facing various threats caused by man.

The Arctic is highly visible in issues regarding the climate change. According to scientific results as well as long-term observations by arctic residents, climate change is already taking place with a strong and largely unpredictable effect on the arctic nature and arctic communities.

Climate change is expected to bring about the highest temperature increases on Earth in the Arctic. Thawing permafrost poses dangers to communities and industries in many parts of the Arctic and could, with increasing emissions of greenhouse gases, accelerate climate change. Climate change may also lead to an acceleration of stratospheric ozone depletion in the region. Changes in ocean currents are possible and carry the risk of severe effects on living conditions in some parts of the Arctic.

To respond to these challenges the Arctic Council was established. The Arctic Council is an intergovernmental forum for representatives from all the arctic countries. The arctic indigenous peoples participate on a permanent basis.

I have been a delegate from Denmark in the Arctic Council. It is obvious to me that capacity building and cooperation among educational institutions in the Arctic is very important for the Arctic communities.

The goal of the Polar Libraries Colloquy, to provide a forum for librarians and others concerned with collecting, keeping, and disseminating polar information, is extremely important for capacity building, both on the local, the regional and international level. Information on all issues should be retrievable for users anywhere.

An outcome of the extended cooperation in the Arctic Council is the University of the Arctic. This



is an international non-governmental organisation dedicated to higher education in the Circumpolar North. The University of the Arctic is a decentralized university offering programs of academic education and research, contributing to the regional educational capacity, and stimulating cooperation among participating institutions. I see this initiative also as an opportunity to strengthen the cooperation among the Arctic libraries.

Another theme of the conference refers to what may be the biggest challenge to libraries not only in the Arctic but all over the World, the new information technologies. It is obvious that information technology plays a major role in a region where distances are enormous and the population scattered, and where access to education cannot be taken for granted.

Libraries all over the Arctic are providing tools in increasing numbers for educational purposes. Archival collections become accessible on-line, new information databases are opened every day and the distance between knowledge and the student diminishes.

This conference will cover some of the current issues in digital library research and hopefully identify priorities for the next phase. The rapid development of networked information delivered to users directly through their desktop challenges the traditional role of libraries as a physical space and librarians as information professionals. How can libraries meet the challenge? Will there be another role for librarians – adding value to information in the public domain. Gateway projects are employing librarians to add value – for example by cataloging it on the Internet.

I think everyone in this room has been faced with the fact that getting information is not difficult but to get the right reliable information out of the enormous amount of existing information, that is the challenge.

I wish that you will have a stimulating and interesting meeting. One thing is absolutely clear for me. Despite all new information technology it is still important to meet like this – face to face – in order for the right spirit for future cooperation to develop.



Introduction

Vibeke Sloth Jakobsen
Chair of the Organizing Committee

The 19th Polar Libraries Colloquy was held in Copenhagen 17-21 June 2002, in Gammel Dok, a renovated storehouse on the harbour front. 59 participants from 15 different countries attended the conference.

The theme of the conference was *Poles apart – poles on-line*, and 32 papers were presented during the four days of sessions.

From Alaska to Lapland, we heard about co-operation projects ranging from digitizing historic archives, creation of virtual libraries, to libraries actually merging their collections. Certainly not always easy tasks, a lot of hard work, patience, and dedication are required. Concerns about loss of information due to retirement as well as due to language barriers were raised. Many new databases were presented to the audience in a variety of subjects from health issues to Jesuit diaries.

The issue of library users not physically using the library facilities raises concern. Electronic information changes the behaviour of the users and questions the need for reader space. Will smaller libraries face the threat of closing down, or will we see more libraries providing distance services like in Finland.

Quite a number of libraries have started digitizing picture collections over the last couple of years. We can now find historical as well as recent photos from both the Arctic and the Antarctic on the web.

Library resources and the prospects for collections in Alaska and Greenland were presented. Polar literature was viewed from new perspectives. Concerns about the future of polar publishing were raised.

A session on international co-operation showed us how important it is to establish contacts across borders and what excellent projects these contacts may result in.

Even though a lot of information is available electronically now, we should not forget that it only comprises a small portion of the entire hu-

man knowledge. Many important historical resources are still located in old fashioned ways in libraries and archives.

2 discussions were conducted during the colloquy, one on information loss, and one on polar publishing issues.

3 posters were presented on the subjects of polar climate resources, Japanese polar research organizations, and Antarctic data management.

All these presentations show us, that even though members of PLC are spread out over a vast geographic area, we seem to be facing the same type of problems and to be engaged in very similar types of projects for the future.

A mid-week break included a field trip to the Viking Ship Museum in Roskilde, where two enthusiastic employees guided us through the collections and told us about the excavation and preservation of the ships. The remainder of the day was spent in Esum where lunch was served at the organic café of the Nature Centre, followed by a walk through the country side and a visit to the Esum Abbey.

During the week there were opportunities to join tours to the Danish Polar Center, the Royal Library's Department of Maps, Prints and Photographs, and the National Museum's Ethnographic Collection.

Acknowledgements

The success of the colloquy depended on sufficient funding, a lot of hard work from the organizing committee, and most important of all enthusiastic and committed participants. We were lucky to have all of those.

We received gracious funding from the IFLA '97 fund, NordInfo, and Polar Libraries Colloquy. Our bookseller *Arnold Busck* provided us with the conference folders.

The organizing committee at the Danish Polar Center consisted of Kirsten Caning, Kirsten Eriksen, Henning Thing, and Vibeke Sloth Jakobsen. Several other staff members contributed in various fields.

We wish to thank Henrik Dupont and the staff



members of the Royal Library's Department of Maps, Prints and Photographs for taking the time to show us pieces from their magnificent collection. We also would like to thank Anne Bahnson

and her assistants for guiding us through the very interesting collection of Eskimo artefacts at the National Museum's Ethnographic Collection.



Session 1: Cooperation in the on-line age

Digital archives for Alaska

Susan Grigg
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Elmer E. Rasmuson Library, University of
Alaska Fairbanks*

Abstract. The University of Alaska Fairbanks has been using digital methods to improve access to historical and cultural sources for more than a decade. Early projects used CD-ROM, but now the preferred method is the Internet. The Wenger Eskimo Database is now available over the World Wide Web. Most of the Project Jukebox multi-media oral history databases are technically ready for the Web but it remains to be determined whether the participants in these projects are comfortable with universal access to their interviews. Over the past five years, many Alaska repositories including UAF, UA Anchorage, the Alaska State Library, and the Tuzzy Consortium Library have digitized unique materials and put them on the Web. The next stage is to develop the Alaska Virtual Library and Digital Archives. That project is expected to begin this fall.

My colleagues in the Alaska and Polar Regions Department have long recognized both the potential of digital technology for making primary sources more accessible and the value of collaboration for turning that vision into reality. More than a decade ago, rare books curator Marvin Falk and oral history curator William Schneider embarked on two important partnerships: the Wenger Eskimo Database, where Marvin accepted an invitation, and the Project Jukebox series of multi-media oral history databases, where the initiative was Bill's. In technical terms, the defining feature of both projects is that they began on CD-ROM before the emergence of the World Wide Web, and moved toward Web delivery largely through retrospective conversion. In programmatic terms, both projects were designed primarily to make historical and cultural materials available to the Alaska Native peoples represented in those materials – in the case of the Wenger project, as others saw them; in the case of

Project Jukebox, as they see themselves. In financial terms, each project depended on an external partner for most direct costs except the sponsoring curator's time. This made it possible to experiment without jeopardizing traditional curatorial and service activities.

The transformation of the Wenger Eskimo database for the World Wide Web is nearly complete. It is now possible to search it from UAF's library server <http://www.wengereskimodb.uaf.edu> on a PC loaded with Internet Explorer 5 or 6. It does not display as well on a Mac, and does not open beyond the Web interface through other browsers including Netscape, but we expect to solve these problems by modifying the search software to do on-the-fly conversion from XML to HTML. This will also enable highlighting of search terms in the search results. Once the performance of the database is completely satisfactory, it will also be available via the University of Geneva <http://www.wengereskimodb.unige.ch>.

Besides the convenience of Web access, the maps and illustrations have been rescanned for better quality, and the new search engine, a product of InMagic, Inc., is easier to learn and more accommodating to different users' needs and expertise. In this brief presentation I will call attention to some key features so that readers will be inspired to "Enter" on their own.

The first step is to accept the Terms of Use. This is to protect both the remaining copyrights in the selected works and the intellectual property of the database itself.

Next is the main search screen (Figure 1). The Basic Search is a keyword search of the full text of the entire database. It will accept truncation and search multiple terms that are linked AND/OR – and directions for these features are just below the search box. The basic search can also be delimited by Eskimo/Inuit group, author, and date. Links to both the classification of groups, or Eskimo Distribution, and the list of sources, or Bibliography, are at the top of the screen. Because the groups are closely associated with geographic areas, as delineated in Ernest Burch's 1982 mapping, it should





Figure 1. Main search screen for the Web edition of the Wenger Eskimo Database, from the University of Alaska Fairbanks in collaboration with Hubert and Beatrice Wenger.

be straightforward to select the one that will bring up the pertinent items. The date is that of the publication, not the voyage of exploration.

The Advanced Search adds the capability of using pre-selected index terms. I understand why more recent documentary projects have usually digitized printed texts instead of transcribing them, but I am less convinced of the superiority of indexing by optical character recognition. Word wheels make it possible to browse all words appearing in the text and all words used in the index. Keyword searches can be performed in the captions as well as the texts.

The Map List provides citations for all maps included in the database, listing them first by country, then by citation. The adjacent Maps feature offers thumbnail and expanded views of the oversized maps associated with the texts. The new scans made this feasible.

And finally, I will call your attention to two special features – a gracious acknowledgement of various libraries and librarians by Beatrice Wenger, and a charming remembrance of Hubert Wenger by his long-time Geneva collaborator Xavier Bouvier. The appreciation of UAF is more than we deserve, though the kind words about the Scott Polar Research Institute are just the plain truth. The remembrance of Hubert Wenger echoes how I have heard him remembered at UAF, though I arrived too late to be able to work with him myself.

I hoped this would be the Colloquy at which UAF would also announce a strong Web presence for the Project Jukebox oral history databases, which were demonstrated on CD-ROM at Colloquy in Cambridge in 1994. Many more Jukebox projects have been completed since then, but



the only Jukeboxes on the Web are two small projects that were created for the Web <http://image.elmer.uaf.edu/exhibits.php>. Of course you need audio capability on your computer to get the full effect.

In contrast to the Wenger database, where the challenge has been that Hubert Wenger's vision was far ahead of the technology, the greatest challenge for Jukebox conversion to the Web is ethical. Beyond the initial partnership with Apple Computer, Inc., there have been three partners in most Jukebox projects – the university, a government agency most often the National Park Service, and a community that agreed to preserve and present its heritage this way. The people who agreed to share personal and communal memories did so on the understanding that the material would be available, typically, in three places: their own community, the visitor centre of a nearby national park, and the university library. These agreements, many of which preceded widespread public awareness of the Internet, do not necessarily constitute "informed consent" for having the recordings available to anyone anywhere via the World Wide Web.

For this reason, Bill Schneider and research associate Karen Brewster have been giving priority to an adequate, affordable determination of whether each person who gave an interview is willing to have that interview on the Web. One method has been to send letters to participants, on the understanding that an interview can be withdrawn from the Web version of a project if the person does not want it there, but there will always be non-responders and some uncertainty about the level of understanding behind the positive responses. With new support from the National Science Foundation, which has been taking more interest in public understanding of science in recent years, Jukebox staff members are about to begin exploring the issue of Internet access to oral history more thoroughly. Over the next year they will mount Jukeboxes on Web servers that are accessible only at certain regional locations so that communities can experience better access to their own projects and those produced in other communities without yet having them universally available. Then they will discuss regional and universal access with the people who provided interviews and the Native entities that co-sponsored

the projects. As understanding of the Web becomes more widespread, it is easier to bring people to the point of being informed. This project will help us discover whether they will be more or less willing to give consent, as the cultural impact of the Web becomes more apparent.

On a lighter note, we already meet people who think that Project Jukebox must be an oral history of popular music. Think how much more puzzling it will be when the disks are no longer present as a visual cue.

UAF's more recent digital ventures were designed for the Web, but they are much less complex than the Wenger and Jukebox projects.

The first was the Butler Brothers' Gold Rush, which reproduces and captions a photograph album made by a prosperous building contractor from Minnesota who visited Nome in 1901 <http://image.elmer.uaf.edu/~butler/> (Figure 2).

The second was a contract from the Library of Congress to digitize 200 of our rare printed maps for the massive digital library project on the meeting of the Russian and American frontiers in the northern part of the Pacific Rim <http://frontiers.loc.gov/intldl/mtfhtml/mfdigcol/uafmp.html>. Our contribution was small in comparison with those of Russian libraries, but it was a great opportunity for us to learn from the Library of Congress's national leadership in digitization. We provided scans and catalog records; the technical sophistication of the Web presentation is the work of the Library of Congress.

And for those of you who remember Dirk Tordoff's film presentation in Winnipeg, there is now a chance to browse some film clips over the Web if your desktop software will support it http://image.elmer.uaf.edu/usr/browse_first.php.

Some other Alaska repositories are much farther along than UAF in making collections accessible over the Web. Most notable is "Alaska's Gold," a collaboration of the Alaska State Library, Archives, and Museum <http://www.library.state.ak.us/goldrush/HOME.HTM>. Eighteen months after its launch date, it is drawing almost 14,000 page views per month.

Because the site was meant principally for teachers and students, the most inviting point of entry is through a menu of "Alaska's Gold



Figure 2. Opening screen for the Web version of the travelling exhibit, "The Butler Brothers' Gold Rush: The Nome Album 1900-1901," from the University of Alaska Fairbanks with support from the U.S. Bureau of Land Management.



Themes" (Figure 3). For example, under the heading "Discovery of Gold" students can ask "Who Strikes It Rich?" which deals with winners and losers among the European and American prospectors who came to northwestern Canada and Alaska, and "Is It Fair?" which looks at consequences for Natives. Alaska teachers were deeply involved in design and selection. The underlying database can also be approached directly through

"Alaska's Gold Lode." With 3,500 digitized documents and a variety of keyword and field-specific search options, it has much to offer college students, historians, and the general public, though it may not be recognized as much as it deserves because the appeal to children is so much more prominent.

Another major Alaska digital project is that the

Figure 3. Opening screen for "Alaska's Gold," from the Alaska Division of Libraries, Archives and Museums with support from the U.S. National Historical Publications and Records Commission.

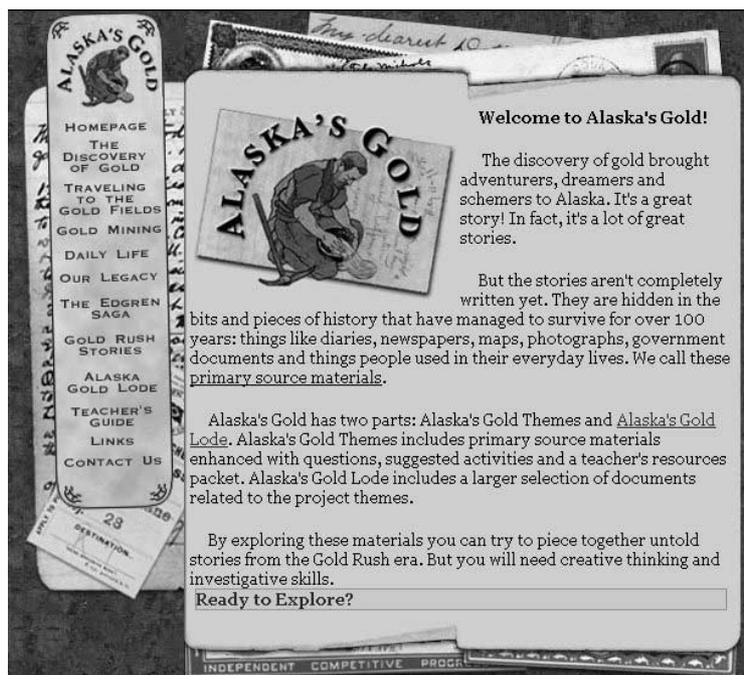
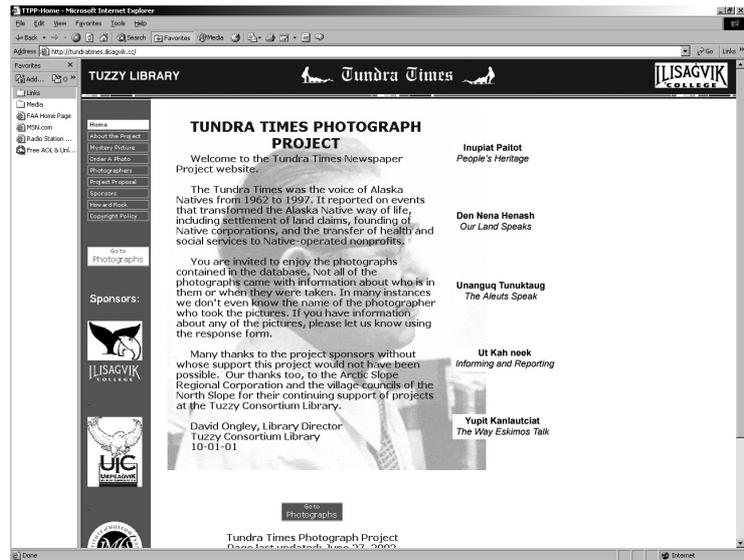


Figure 4. Opening screen for the Tundra Times Photograph Project, from the Tuzzy Consortium Library in Barrow, Alaska, with support from the U.S. Institute of Museum and Library Services.



Tuzzy Consortium Library in Barrow has been digitizing and indexing photographs from the files of the statewide Alaska Native newspaper, *Tundra Times*, which was published biweekly from 1962 to 1997. This project was based on a grant from the Institute for Museum and Library Services, the federal agency that has been most sympathetic to digital access projects. The importance of the project extends beyond the appeal of the individual photographs because the *Times* not only recorded Alaska Native history in the making but also helped make that history by enabling Alaska Natives from different cultures and communities to exchange information and coordinate political action. Tuzzy Library director David Ongley could not attend this Colloquy because it coincides with the annual meeting of the American Library Association, but he kindly gave me permission to introduce the project <http://tundratimes.ilisagvik.cc/> (Figure 4).

In this brief introduction, I first want to call your attention to the treatment of rights. Not only a message about copyright and other legal issues, similar to the Wenger database, but also a strong presentation of library and patron responsibilities followed by a declaration of Indigenous Copyright, as set forth at the Second International Indigenous Librarians' Forum in 2001.

Second, let me comment on the range of access methods. A keyword search is offered as a "quick

search," but the design favors broader exploration. This is to select a subject from an alphabetical list and then browse the thumbnail images and brief captions in that category. Another click and you have a larger image plus a full catalog record. I particularly like the way the record identifies the person in the subject role parallel to the person in the photographer role. And another click yields an even larger image, adequate to illustrate a school project or identify a figure in the background. Finally, there is provision for visitors to compile their own photo essays, though this is not active yet.

Meanwhile, the Archives of the University of Alaska Anchorage has put on its Web site the finding aids for its historical manuscript collections as well as half a dozen small photograph exhibits <http://www.lib.uaa.alaska.edu/archives/Overview.html>. Finding aid projects are not as flashy as arrays of photographs, but they do seem to be what senior researchers most desire, and UA Anchorage deserves great credit for accomplishing so much with its own resources, in contrast to the dependence of most other Alaska projects on grants and gifts.

Individually valuable as these offerings are, Alaska institutions recognize that separate projects focused by theme or by document type will never meet the broad need for integrated scholarly, public, and educational access to historical and cultural materials no matter how many are under-



taken. They are too specialized in content and require too many searches with different tools and terms, and each institution must put too much effort into building infrastructure. We need a collaborative approach to digitization, from selection through production and storage to presentation, with a flexible infrastructure that will make it possible to add materials on different topics instead of starting a new project for each topic.

Plans for digital collaboration in Alaska have proceeded along two tracks. One took off from a visit to my own department in 1999 by the new President of the University of Alaska System. When we brought out the physical and digital treasures that delight other distinguished visitors, his disconcerting rejoinder was to ask how our program related to others in the state, and offer funding for a statewide meeting on that topic.

My first step was to organize a panel discussion for the next annual conference of the Alaska Historical Society so that I could introduce the idea of such a meeting. The audience responded by suggesting areas of collaboration for the conference to consider. The strongest demand was for a single Web site that would bring together information about holdings of many institutions without necessarily providing digital reproductions. That was pre-eminently the voice of historical researchers, perhaps making up for my not having thought to include them on the panel, but it drew support from curators as well, who would like to know where to find resources for their own communities in other repositories.

My second step, with additional funding from Wells Fargo Bank Alaska, was to organize the meeting, called "Documenting Alaska." Here as at the historical society, there was no interest in coordinating acquisitions. Instead, the group gave priority to four needs from the many mentioned in brainstorming sessions: developing a curatorial component for UAF's graduate programs in rural development, offering workshops in preservation techniques for curators who do not have professional training, surveying historical film and video holdings statewide, and developing a digital archives for the state.

The other path to digital archives for Alaska took the goal as given and focused on fund-raising. My contribution was to take the lead in

preparing proposals for two federal competitions. Not that I expected immediate success, given our limited technical know how, but the planning process increased our knowledge and demonstrated the need for additional technical support.

Meanwhile, the directors of Alaska's major libraries began spreading the message in Washington D.C. about the need to improve the availability of Alaska information over the Internet. One idea was a virtual library, a portal site along the lines of SLED, our Statewide Library Electronic Doorway, which includes a statewide license for online databases and many links to public Web sites selected for their value to Alaskans <http://sled.alaska.edu>. The other idea was the Alaska Digital Archives, or Alaska History Online, a single site that would provide digital reproductions of Alaska historical and cultural materials in repositories throughout the state.

As a result of the library directors' appeals, federal funds have been earmarked to develop the Alaska Virtual Library and Digital Archives, affectionately known as ViLDA. The proposal to claim these funds has just been completed, and we hope to begin work in the fall. We will use the award to design and build infrastructure, develop protocols for selecting materials, and create sufficiently exciting content to attract additional funding for expansion.

Here are some key features of the proposal:

This initial collaboration will be among Alaska's three largest libraries – the Alaska State Library, UA Anchorage, and UA Fairbanks – but a primary measure of our success will be that other libraries and other kinds of historical and cultural repositories will be able, willing, indeed eager to participate in later phases.

We are promising to digitize and catalog only 5,000 items in 12 months of production because we want to give due attention to developing the infrastructure.

We will develop just two themes because that is what we think we can do well with this number of items. The selections are "Alaska's Movement to Statehood" and "Alaska Native History and Cultures." We will ask university scholars and representatives of Native entities to assist with selection. Because the *Tundra Times* archive begins in 1962, we will be able to pursue the Native theme



with emphasis on the period before statehood, where our collections are strongest.

Most of the 5,000 items will be photographs because they have the broadest appeal and because there is a much larger body of practice than for other media. We will also include samples of sound recordings, moving images, texts, and graphics in order to develop our ability to handle them.

We will be digitizing still images at two levels of resolution for the Web, similar to the Wenger and *Tundra Times* projects – a thumbnail image to appear on the screen as the first search result and a larger image with more detail for closer examination and printing for personal use.

We will also be digitizing at high resolution to produce masters. In this we will conform to U.S. or international standards, or at least “best practice” insofar as that can be determined. I was glad to learn, less than two weeks ago, that NISO, the National Information Standards Organization, and ANSI, the American National Standards Institute, have released a draft Standard for Technical Metadata for Digital Still Images <http://www.niso.org>, but I would be even happier to have draft standards for the images themselves.

We will make a substantial effort to extend the life of our digital masters. We have just begun working with the Arctic Region Supercomputing Center at UAF on a pilot application of the research on persistence of digital files that has been going on for a number of years at the San Diego Supercomputer Center, with partners including the National Archives and InterPARES, or International Research on Permanent Authentic Records in Electronic Systems.

We have chosen Dublin Core as our metadata standard. At the high end, our goal is to preserve the possibility of joint searching with our library catalogs. At the low end, we want to assure broad participation in post-project expansion by selecting protocols that can be learned in a workshop with no presumption of training in library science. Each participating institution will decide whether to limit itself to the seven mandatory fields or aim for the full fifteen fields that were used for the *Tundra Times* project.

We will be choosing one of the new digital archives software packages. So far we have looked

most closely at ContentDM and Hyperion. ContentDM is appealing because of its roots in the University of Washington’s excellent digital archives site and its new partnership with the OCLC library cooperative for customer service. Sirsi Hyperion is our obvious choice among the products that are associated with integrated library systems because two of the three founding libraries will be bringing up Sirsi’s Unicorn library system within the next year and the third is using a system whose creator recently merged with Sirsi. As we make the choice in the next two months – so that we will be able to write up a purchase order as soon as the funds are awarded – we will be balancing user, input, and maintenance factors and hoping that this does not polarize our public service, technical services, and systems staff.

We will be centralizing both the metadata and the digital objects because that will provide significant economies for the three founding institutions and facilitate later participation by smaller institutions.

The site will be designed to provide valuable content to a wide range of users, from middle school students to community leaders to teachers. As a relative newcomer, I am impressed with the vitality of amateur historical studies in Alaska in comparison with the dominance of academics in other parts of the United States. If we can meet the needs of that audience, we will make a significant contribution to students and professors as well. We would like to highlight selected items for children and casual visitors who want to follow a story line, not perform research, but we are not promising to do that under this grant.

This Alaskan approach to digital archives is in keeping with the trend throughout the United States for statewide collaboration on digitization of historical materials. Almost half the states have projects underway, usually with the state library or the principal public university library in the lead.

In terms of content, they usually begin with photographs. Typically, there are browse, keyword, and field-specific searches plus the capability of browsing all of the photographs in a broad subject category.

In technical terms, the projects vary in their ap-



proaches to centralization or decentralization of metadata and digital objects.

In terms of audience, there is typically an effort to make the site useful to students in primary, middle, and high schools, in contrast to the scholarly orientation of most free-standing university projects.

In my mind, our state library's "Alaska's Gold" project does not quite count as a statewide collaboration because all participants have the same boss, but it is ahead of most collaborative projects in offering text, graphics, and still images of three-dimensional objects as well as photographs. Among the best of the other state-level collaborations are Connecticut History Online <http://www.cthistoryonline.org/> and the Colorado Digitization Project <http://coloradodigital.coalition.org/>. Technical innovation in the U.S. has occurred at large research universities as well as the Library of Congress and the National Archives, but their projects do not address Alaska's need to sustain collaboration in an environment that is rich in historical and cultural concern but weak in technical resources.

My proposal for this presentation was submitted late because I wanted to be certain that the digital archives project we have envisioned for a number of years – what one of my colleagues calls "the big database in the sky" – would exist by the next Colloquy. Only when there was an excellent prospect of funding did the time seem right to outline our intentions and explain how they are shaped by Alaska's institutional environment and by approaches to digitization elsewhere in the United States.

Let me conclude by being the first make a proposal for Polar Libraries Colloquy in 2004. At that meeting, I hope to be able to introduce the just-completed first phase of Alaska's Virtual Library and Digital Archives, which by that time will surely have a more evocative name than ViLDA. I would also be happy to recruit one of my Alaska colleagues to consider the cultural ownership issues that the International Indigenous Librarians' Forum pursued so decisively in 2001.

ARLIS: a model for successful partnerships in the online age

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Abstract. When the Alaska Resources Library and Information Services (ARLIS) opened its doors in 1997 after merging eight unique library collections of natural and cultural resources materials, it was only the first step in what has become a very successful partnership. Now, nearly five years later, ARLIS continues to be a model for success. In 2001, it was one of only three libraries in the United States to win a national service award. This paper will outline the progress made since ARLIS debuted, discuss several of the problems encountered, and describe some of the partnerships made with other libraries in Alaska and beyond. It will also feature collection strengths, new special collections added, and web and online access to these collections.

It has been almost four years since ARLIS was discussed at the Polar Libraries Colloquy. In 1998, Barbara Sokolov and Juli Braund-Allen reported how, nearly a year after its doors had officially opened, the Alaska Resources Library and Information Services, more commonly known as ARLIS, was an overwhelming success (Braund-Allen and Sokolov 1999). It succeeded in offering researchers, students, and the public rich collections of Alaska-related natural and cultural resources materials, and a staff of librarians with subject expertise to match. ARLIS had made headway in physically and electronically merging its eight separate collections, and was also making the transition from a library whose organization had been worked out on paper to a library that was learning to "walk the talk."

ARLIS was formed in the mid-1990s by a group of federal, state, and joint federal/state agencies, along with the University of Alaska Anchorage (UAA). In a pioneering effort, librarians and agency directors banded together to preserve and



ensure access to unique arctic resource information when their libraries were threatened with downsizing or outright closure. The partners include the Alaska Department of Fish and Game (Habitat Library); the U.S. Fish and Wildlife Service (FWS Library); the U.S. National Park Service (NPS Collection); the U.S. Geological Survey (USGS Library); the U.S. Bureau of Land Management (Alaska Resources Library); the U.S. Minerals Management Service (MMS Library); the *Exxon Valdez* Oil Spill Trustee Council (Oil Spill Public Information Center); and UAA, including the Consortium Library and the Environment and Natural Resources Institute (Arctic Environmental Information and Data Center). As founders, each agency contributes a share to support ARLIS.

ARLIS collects material that supports the research, management, and development of Alaska resources. The library collection emphasizes all aspects of arctic regions: ecology and habitat, fish and wildlife, geology and mining, oil and gas, climate and cold weather engineering, water resources and hazardous waste, and subsistence and historic preservation. In addition, materials about scientific methods and related concepts are collected to support the research needs of its founding agencies (*Alaska Natural Resources Library Group* 1997). A large part of ARLIS' collection is so-called "grey" literature, agency documents, and reports of limited distribution relating to the library's areas of emphasis. These reports often contain valuable information that quickly becomes irretrievable unless it is collected and cataloged. As the "mother lode of Alaska information resources," ARLIS' goal is to collect and disseminate information to ensure that wise development of resources and meaningful public participation are illuminated by scientific findings (ARLIS Management Team 2001).

ARLIS provides information and research assistance to more than 2,300 agency staff working throughout the state. It also serves the diverse information needs of the business and legal communities, environmental groups and consultants, Alaska Native corporations, the petroleum industry, miners, educators, and students, as well as other libraries, locally and internationally (ARLIS Management Team 1997). Public service statistics, including numbers for interlibrary loan, circulation, and reference, have continued to increase

every year that ARLIS has been open. In 2000, ARLIS had 20,000 on-site users and answered 25,000 requests for information. Of these, nearly half (48 percent) were public users. Agency personnel made up 33 percent of ARLIS clientele, with the remaining 19 percent coming from the university student and faculty population (Fact Sheet 2002).

The management structure of ARLIS is unique in that the library is not directed under the hand of a single librarian, but is instead guided by the hands of many. This structure reflects how the library came into being – a genesis through years of teamwork and collaboration by two groups: the founding librarians of the Alaska Natural Resources Library Group (now called the ARLIS Management Team), and the agency executives who comprised the Management Advisory Group (now known as the Founders' Board). It also reflects the strongly held conviction that the needs and missions of the founding agencies are of utmost importance in decision-making and daily library operations, and that this can best be done through equal representation and close working ties.

One of the legacies carried over from the years spent in planning ARLIS is that decisions of the Management Team are made by consensus. The founding agencies were dissimilar in so many ways that the goal of combining their libraries into a single functioning entity often seemed unattainable. Reaching that goal would not have been possible if any one point of view had taken precedence over any other. Consensus was used intentionally to preserve agency and librarian commitment; it ensured that every voice was heard and that every need would be accommodated in forging the new library.

The original roadmap of ARLIS was drawn entirely through consensus. This included the painstaking process of sketching out how agencies with different missions, different fiscal years, different reporting structures, different procurement methods, and different personnel holidays, policies, and procedures could operate a single library whose services and collections could meet a host of differing needs while still providing exemplary service to users. If one person did not agree to something, all of the participants sharpened their



pencils and went back to the drawing board. Although consensus is one of the most difficult methods to use in decision-making, its value is high in that everyone supports a decision once it is made.

While ARLIS is still managed through the twin efforts of consensus building and teamwork, there have been some changes since the library opened in late 1997. There have also been some unanticipated problems. Some of what seemed to flow so well on paper did not necessarily work in actual practice. Moreover, things were compounded by one unexpected and unassailable fact: everyone had put such lengthy and tremendous effort into planning ARLIS that they were exhausted, and no one had thought to build in any recovery time between the planning of ARLIS and its execution. So when ARLIS opened, it came as a bit of a shock that the real work – doing all of the multitudes of things that constitute a library serving its patrons – was just beginning. Even so, ARLIS was, and is, thriving: agencies and patrons are clearly happy, usage statistics have steadily climbed, and the library has been recognized nationally. But in some respects, success has not come easily. As in any organization, there have been growing pains.

When ARLIS opened, all of the employees who worked there automatically became members of the Management Team. They met weekly to prepare budgets, draft policy, and decide on issues of concern in the day-to-day operation of the library. Now that the Team's numbers had doubled in size to nearly eighteen members, however, consensus was not so readily achieved. Some Team members questioned the need for having all ARLIS staff present at every meeting. Others were not interested in what they considered to be "management" concerns and felt their time could be used more productively on other assigned tasks.

Furthermore, it soon became apparent that the Management Team approach was a cumbersome, if not impossible, structure for dealing with personnel issues. There was no mechanism to provide for confidentiality, nor was there any process in place that would allow decisions to be made outside of the Team. How can you discuss a possible personnel problem when the only available management forum includes the entire staff?

These kinds of problems led ARLIS to reorganize its Management Team in late 2000. Acting un-

der their authority as the former Alaska Natural Resources Library Group, the six agency librarians became the sole members of the Management Team. While this transition had the unintended consequences of being disruptive and even hurtful to some staff, the result has streamlined both effort and workflow for ARLIS.

ARLIS struggled with personnel policies and reporting structures in part due to the complexity of its internal organization. Personnel were still bound by the policies and procedures of their own agencies, but now they were also ARLIS employees as well. Therefore, part of the task ARLIS faced in developing its own internal working structure was, first, to thoroughly understand how each agency's system worked; and second, to develop one that met ARLIS' needs within relevant legal confines. Third, it had to promote ARLIS as a single entity rather than a conglomeration of separate ones. Lastly, it had to make this internal structure easily understood by all employees.

In addressing this last point, the Management Team developed FAQs – frequently asked questions – to make its personnel policies and procedures clear. "FAQs about Working at ARLIS" pose questions that, at first, and for any other organization, seem simple to answer. For example, the first question is: "Who do ARLIS employees work for?" The obvious answer is "ARLIS," and that is correct. But consider the following: about half of ARLIS personnel still work for and are paid by their founding agencies. Another portion are hired through UAA's Consortium Library and paid with pass-through funds from the combined contributions of the founders. These staff are university employees and have a university supervisor; each also has an on-site supervisor at ARLIS. In addition, the Consortium Library makes varying in-kind personnel contributions of its own library staff and faculty. To complicate matters even further, a few employees are paid through the ARLIS budget but hired by other founding agencies. As a result, a single ARLIS employee may have a supervisor of record, an on-site supervisor, as well as a team leader or coordinator based on job function. Now you can understand why the second question in the list of ARLIS FAQs is: "Who tells me what to do?"



Similar complications occur in the ARLIS budget process. The agency partnership was established to take advantage of existing infrastructures since one of the founding principles was to stretch limited budget dollars. Over time, and through the lead of one of its librarians, the Team has come to better understand and work within the intricacies of the different fiscal cycles and procedures of each founding agency. The Team has become especially familiar with those of UAA because its Consortium Library hires nearly half of ARLIS' workforce with pass-through funds. The Consortium Library also acts as purchasing agent, supports ARLIS' computer network and other library functions, and makes UAA-licensed databases available on ARLIS computers (ARLIS Management Team 2001).

Budgets are prepared by the Management Team and presented to the Founders Board for action. Adequate funding is an ongoing problem, and solutions are being explored at local, statewide, and national levels. The Founders Board and other advocates of ARLIS are seeking to have the federal agencies' share of ARLIS funding written into the federal budget as a fixed line item allocation. This would help to stabilize funds for ARLIS' operating costs. Additional ways to support the library are also being investigated by a newly formed Friends of ARLIS group.

Another fiscal challenge ARLIS faces is that it cannot collect fees. Five of ARLIS' founding agencies are federal, and collectively they have provided much of the library's collection, computers, and even furniture. Federal agencies, for the most part, are not allowed to accept payment for service for their property or personnel. As a result, ARLIS cannot collect fines for overdue books, nor can it develop specialized fee-based services such as interlibrary loan or document delivery to offer consulting agencies or other for-profit groups. ARLIS cannot undertake fee-based projects that would offset costs and improve its collections and services, although it can participate in grant-funded ventures. A solution to this problem must occur at the federal level.

The other piece in the organizational structure of ARLIS is the Founders Board. Put in place when the library opened, the Board is charged with approving budgets, establishing overall direction for

ARLIS, adopting policies, and ensuring quality service to the public and agencies. Many of its members – directors or designated representatives of agencies that have a continuing fiscal commitment to ARLIS at or above a certain level – were the same individuals who had participated in the library's planning stages. The Management Team, most often the agency librarians but also occasionally other staff, meets at least twice a year with the Board. These meetings are open to the public, and have proven essential to interagency cooperation and ARLIS' success.

By 1997, ARLIS staff thought they had survived major hurdles just to get the doors open, but, as previously mentioned, they quickly learned their work was only beginning. All of the collections were now physically housed under one roof, but they were shelved separately and accessed through at least eight separate catalogs or retrieval systems. Strategies needed to be developed and the time had to be found to merge these collections into one. For the first few years, ARLIS has closed for six to eight weeks every summer so that staff could concentrate on merging and shifting efforts, while still remaining open one afternoon a week and maintaining daily reference telephone service.

A number of problems surfaced as the merge unfolded. Multiple journal collections had to be inventoried, consolidated, and then shelved into one. Each of the participating libraries had different levels of cataloging, and the varied cataloging expertise of the librarians from the different agencies meant that duplicate books often had several different call number locations. The computer containing the cataloging records for one collection had been boxed up when its agency library closed, and some period of time passed before it could be located in the storage warehouse. Many other collections were not automated at all.

The first step in developing an electronic catalog was to transfer easily portable records into a web-accessible database. This by no means included all of ARLIS' materials, but it at least provided a working database as a starting point. In 1998, this database was loaded into the web-based local public library catalog. Two years later, both UAA and the Anchorage Museum of History and Art



began adding their library records. Today, this shared online catalog makes it easy to do research in the Anchorage area because multiple libraries can be searched at the same time. It has heightened awareness of locally available materials, particularly for patrons interested in Alaska's resources who had not known that ARLIS existed. In addition to sharing a catalog, all of the participating libraries cooperate in collection development (ARLIS Management Team 2001).

Odds and ends of related materials, additional agency documents, and other special collections not yet included in the shared online catalog still exist on the ARLIS shelves. These are gradually being added to the catalog as staff and time are available. Additional materials awaiting processing, including several large collections, are held in a separate area. Occasionally, book records with different call numbers still appear in the online catalog, and these are being resolved as they arise. The summer merge project continues, although this year the library will keep regular hours during the process.

New collections continue to be acquired. In the past three years, professional-level materials on bears, moose, and mushrooms have been donated to ARLIS from specialists in these fields who have used the library and recognize the depth and value of its collection. The Alaska Department of Fish and Game added specimens to the furs, skulls, and bird mounts it had initially donated to ARLIS. These items, searchable in the online catalog, circulate like books to schoolteachers, scout leaders, wildlife artists, and agency personnel doing outreach and environmental education (ARLIS Management Team 2001). The literature cited in the environmental report for the right-of-way renewal of the Trans-Alaska Pipeline System is soon to be housed at ARLIS, and a major collection of aerial photographs was recently acquired from the Alaska Department of Natural Resources. ARLIS has received selected materials from libraries no longer maintained by a number of Anchorage-based petroleum companies. It also serves as a location in the community where public review documents are available for interested parties to read.

Last year, ARLIS, along with UAA and the local public library, initiated a cooperative borrowing agreement, in which each library honours the oth-

ers' borrowing cards. Library patrons, who previously had to have three separate cards – one for the public library, one for the university, and one for ARLIS – can now check out books at any location with a card from any one of these institutions. This service is extremely popular and convenient, and has increased access to all of south-central Alaska's publicly available library resources.

In 1999, ARLIS established a presence on the Internet (<http://www.arlis.org>). Its website features access to the shared online catalog as well as information about ARLIS, its collections and services, reference assistance, and links to other relevant sites. The geographical distances between communities in a state the size of Alaska make this service especially important because it provides equal research opportunities to agency clientele and other library patrons regardless of their location. Researchers in founding agencies also have desktop access to additional services provided through ARLIS, such as bibliographic databases, interlibrary loan, and electronic document delivery.

Coordinating with state and federal geology agencies and groups with mining-related concerns, including the Alaska Miners Association and several minerals exploration companies, ARLIS is making Alaska minerals information available to the public. This interagency task force, called Minerals at Risk and funded by the U.S. Congress, approaches information-seeking from a miner's point of view and tries to simplify access by offering electronic files whenever possible. The group has published a *Guide to Alaska Geologic and Mineral Information* (also available online at <http://www.dggs.dnr.state.ak.us/Libguide/Section1.htm>). Plans for a revised edition are underway. With funding support from this program, ARLIS will be able to catalog all of its geology-related collections by the end of this year (ARLIS Management Team 2001). CIRI, an Alaska Native corporation that owns an extensive minerals exploration collection developed by Anaconda, a commercial mining company, is in the process of donating many of its maps, files, field notes, and reports to ARLIS. With financial assistance from the Minerals at Risk program, ARLIS will provide online indexing to the entire collection.

Through a recent Alaska State Library grant, ARLIS librarians have begun selecting web docu-



ments about Alaska and arctic-related resources and connecting them to records in both OCLC, the global library cooperative, and the local shared online catalog. As patrons search the library catalog for books, the web address appears in the location field. This allows remote users the opportunity to download the document from ARLIS' website. So far, ARLIS has linked more than 1,000 records, and at least 2,000 more are to be added in the coming months.

Last fall, ARLIS was accepted as a participating member of the Collaborative Digital Reference Service (CDRS). A pilot project involving the Library of Congress, CDRS' goal is to provide professional reference service to researchers any time and anywhere. This cooperative service allows libraries to assist users by sending out questions that can best be answered by the expert staff and collections of participating CDRS institutions from around the world. Both ARLIS and the Alaska State Library joined CDRS as providers of information about Alaska. Early this year, an upgraded generation of software was implemented. Due to a new pricing structure, ARLIS is watching and waiting to see how the service evolves before renewing its membership.

On another front, ARLIS is working as a data partner with the Cooperatively Implemented Information Management System (CIIMMS). This project is a web-based tool that helps users find and share information about Alaska's ecology and natural resources by connecting tabular and geospatial documents to the Internet in a geographically oriented format. Begun in 1998, CIIMMS offers a broad range of user-maintained sites, and has funded the processing of additional ARLIS documents to enhance the information base. Ultimately, the system (<http://info.dec.state.ak.us/ciimms>) will offer primarily digital access.

Its efforts in developing partnerships on many levels and increasing the availability of resource information important to Alaska have brought national attention to ARLIS. Soon after the library opened, it received the Hammer Award for its participation in former Vice President Gore's National Partnership for Reinventing Government Program. The award was one of 1,200 presented to teams of federal employees and their partners nationwide whose innovative efforts help to sup-

port a government that works better and costs less. ARLIS librarians also received individual commendations from the U.S. Department of Interior for their participation in this project.

ARLIS was the recipient of the 2001 National Award for Library Service from the U.S. Institute of Museum and Library Services. ARLIS was one of only three libraries in the country to receive this award, one of the most distinguished given to a museum or library nationwide. The award honors "outstanding libraries that make significant and exceptional contributions to their communities through extraordinary and innovative approaches to public service" (U.S. Institute of Museum and Library Services 2002).

"ARLIS is a national treasure," according to Peter Wilkness, former director of polar programs for the National Science Foundation. The library is valuable, Wilkness points out, because it includes rare and unique federal documents, pre-statehood publications, industry materials side-by-side with government materials, and many different scientific disciplines about Alaska, all in the same place." In her testimonial supporting the award, Fran Ulmer, Alaska's Lieutenant Governor, wrote: "ARLIS is an excellent example of city, state, university, and federal government reaching across agency boundaries to make resources available to the widest constituency" (Fact Sheet 2002).

In its fifth year of operation, ARLIS is thriving as it provides quality reference and information service to the people of Alaska, and beyond. ARLIS has succeeded for three primary reasons. First, it is an important information resource in Alaska – a "book-poor" state, where, despite a geographic area one-fifth the size of the contiguous United States, the total number of all of the books in all of the libraries in the entire state is less than half the number in the library collections of Stanford University (Braund-Allen 1997). Second, there is a long history of formal and informal cooperation among libraries and librarians in Alaska, and this pioneering spirit of pooling resources facilitated the establishment and operation of ARLIS. Third, and most important, there has been a sustained commitment by all parties – from the heads of agencies, to the librarians and technicians, to the private and public users – to preserve and provide access to this valuable and unique



collection of materials on Alaska's natural and cultural resources.

ARLIS faces new challenges and new possibilities in the very near future. It is slated to relocate into UAA's library addition, a state-of-the-art building scheduled for completion by 2004. This move will bring two of Alaska's major research libraries – the Consortium Library and ARLIS – under one roof. Users will certainly benefit from the co-location of libraries whose staff and collections complement each other. How the two libraries, each with its own identity and mission, will interact in such close proximity, has not been entirely worked out. This question, and many more, will no doubt be asked as the move takes place. We look forward to finding the answers as a whole new realm of options and partnering opportunities unfold.

Acknowledgements. This paper would not have been possible without the help and support of the librarians and staff of ARLIS. We would like to extend our grateful thanks and appreciation to all of them for their hard work and dedication in making ARLIS a success. In particular, we wish to acknowledge the information and documentation provided by the ARLIS Management Team, especially the assistance of Cathy Vitale (U.S. Bureau of Land Management) and Carrie Holba (*Exxon Valdez* Oil Spill Trustee Council).

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A collaborative effort to get online: a story of cooperation, frustration and success

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Abstract. The Goldthwait Polar Library (GPL) is a very small, specialized library with a very small budget allocation. One professional librarian manages the library with help from one part-time student library assistant. The library is not affiliated with The Ohio State University Libraries system on campus and for quite some time operated independently of those libraries. In 1996 operating independently was no longer acceptable. The GPL's holdings are being added to the University Libraries' online catalog (OSCAR) and beginning in July 2001 records became available in the public catalog.

At this time the project should only be considered a limited success for several reasons. This project is now in its sixth year and given the size of the collections within the library, outsiders and patrons would undoubtedly expect that the retrospective part of this project would be complete, but it is not. This project also necessitates changes in library policies and procedures, some of which are easier to implement than others. In order for the Goldthwait Polar Library to succeed in getting its entire holdings online, it needs the help of several different entities within the OSU library system itself. The project has complexities of its own and in some instances cooperating with others has proven to be difficult at best despite the good intentions of all the parties involved. When the ret-

rospective part of the project is complete we can objectively assess what worked and what didn't. But for right now, we are just pleased that the collaboration is still intact and producing results, although at a much slower pace than was originally anticipated.

The Goldthwait Polar Library (GPL) is a very small, specialized library with a very small budget allocation. One professional librarian manages the library with help from one part-time student library assistant and as of July 1, 2002 there will only be the librarian. The library is not a department library within The Ohio State University Libraries system on campus and for quite some time operated independently. In 1996 operating independently was no longer acceptable and a strategy was developed for adding the GPL's holdings to the University Libraries' online catalog (OSCAR). At the 1998 Polar Libraries Colloquy in Iceland I outlined the rationale for the project and discussed what we hoped to accomplish (Lay 1999). Now in 2002 we are a little further along, but by no means finished. In July 2001 some of our library's bibliographic records became available in the public catalog (OSCAR) at <http://www.lib.ohio-state.edu/oscar.html>. The library is represented on the campus map of university libraries and has its own homepage with contact information and hours (http://www.lib.ohio-state.edu/Lib_Info/PLR.html).

At this time the project should only be considered a limited success for several reasons. This project is now in its sixth year and given the size of the collections within the library, outsiders and patrons would undoubtedly expect that the retrospective part of this project would be complete, but it is not. Several tasks remain, including adding serial titles and serial holding statements to the online catalog. The unique titles are not as yet fully represented in the online catalog and these are the ones that should be of the most interest to users. However, all the duplicate titles are now in OSCAR. This project also necessitates changes in library policies and procedures, some of which are easier to implement than others.

In order for the Goldthwait Polar Library to succeed in an online environment, it needs the help and support of several different entities within the OSU library system. The project has com-

plexities of its own and in some instances cooperating with others has proven to be difficult at best despite the good intentions of all the parties involved.

Time constraints and staffing issues remain the biggest obstacles for completing this project. We have the necessary expertise available to get all the questions answered, but the project has taken a back seat to other library demands. The regular patrons of the library have not actually noticed whether or not we are officially online. Most of these patrons reside in our building and use the library as they always have. The patrons from outside only see what we have accomplished thus far by viewing the public online catalog, so they probably do not even realize that we have more resources available to them because it is just not visible online. It is also curious to note that most of the books that are requested from the outside are not polar related. The most requested books are from the collection of the late Kaye R. Everett, an agronomy professor and member of the Center. Technical books and manuals about remote sensing and GIS are also popular.

What our regular library patrons will recognize and respond to is our level of service. Services that we provide to our users need to remain the same, with just a few changes. For example, we will continue to have document delivery from the different libraries on the main campus, but a permanent delivery schedule will need to be enforced. With the Center's director backing this initiative, there will be no more last minute requests.

The daily routine has changed as we are in the process of converting everything to the OSU Libraries circulation subsystem. This is a slow process particularly for the older material that has been checked out on a manual charge card. The manual charge cards are at best unreliable. Something that has been theoretically checked out on the manual charge card, may or may not be in the original person's possession as research groups within the center tend to swap books with great regularity. If the material is then charged out to that original person in the circulation subsystem, a permanent record is created with an official due date. This might potentially cause more problems than it solves. We also use the circulation subsystem every day to check for library holds and re-



quests. Then if there are requests and holds, we need to decide how to get the material to the patron. That usually involves dropping the book off at the library pick-up location the patron requested or preparing it for campus mail. This can easily be incorporated into our new, permanent delivery schedule.

Another stumbling block to our attainment of successful online management of the library is expertise or lack of expertise. A single librarian can not be an expert in all things and hence problems will always arise that require more expertise than one person can provide, particularly when trying to keep up with technological advances in computer and library science. This fact becomes increasingly more evident as time goes on and the project goes on and on. Training is a necessary component of becoming more efficient and knowledgeable. However, while training may at times be considered relatively cheap or actually has no associated dollar cost, it does require a time commitment, not only by the person being trained but also by the trainer. OSU Libraries has training classes on almost everything imaginable, but you have to be at a mutual starting point before some of the classes will even make sense. In my case, I also need to make judgement calls as to what training sessions would be beneficial and which ones I should skip. If I make poor decisions, I will be away from the library for extended periods of time, which might enhance my networking capabilities, but will not impart any new knowledge of use to our particular situation. The opportunities for training are numerous, but they have to be carefully considered because of the time factor. The same holds true for meetings. There are regularly scheduled meetings for circulation supervisors, public services staff and collection development officers. Because I work alone, ideally any and all of these meetings are of potential interest to me. So far, I have not attended any meetings, but instead have relied on information passed through the OSU Libraries listserv. It is through the listserv that I receive the most pertinent information and that is also how I know that I need to know something else.

OSU Libraries has experts on every phase of technology and they keep pace with all phases of technology and in some instances are the actual

innovators of new technology. For example, they were leaders in the development of OhioLINK, the Ohio consortium of academic libraries. Necessity dictates that they have experts on the staff because there are 19 department libraries on campus (including the GPL) in 19 different locations, all depending on their expertise. There are eleven smaller subject collections within the Main Library itself. The OSU Libraries receives 105,000 monographs and over 42,000 serials in a year's time.

They have a web librarian who is developing and redesigning the library's homepage with a great deal of user input. He also helps the staff from department libraries upgrade their homepages to make them more user friendly and in compliance with university rules and regulations. They have experts who know LC schedules and have a command of even the most minute cataloging rules. They have staff dedicated to solving problems about electronic journal access. They have a rigorous user education program that advises both students and faculty alike on all issues pertaining to information access. So I know they know the answers to almost any question I might pose, but knowing specifically who to contact about what is sometimes problematic. On a regular basis, there is one person in the cataloging department of technical services that helps me, one person in library administration and one person in a department library that comes to my aid whenever I ask. All of these people and others within the library system have been responsive to my questions, but I sometimes wonder if I am even asking the right questions. For the most part, when I do email someone and get an answer, invariably he or she will tell me that the document with the answer I need, is actually available on the web, but I just didn't know it or where to look. Can you guess what my next point is? All of this leads to the realization that our library is only a small part of a much bigger picture. The OSU Library administration, like the Byrd Center, is continually facing budget restrictions and cuts. They too have to make do with what they have, in other words, make do with less. There is a hiring freeze and a continual shifting of job responsibilities to make everything work. In the span of less than six months, our library has been told that our project has become the responsibility of two different



people in cataloging. While this is an easy adjustment to make, it does illustrate that this project is not a high priority project for OSU Libraries.

Previously, I submitted 15 unique titles to the cataloging department as a test to see how the project would fit into their already strained workflow. We then came up with a mutually agreed upon number – 50 unique title submissions at a time. From our library's perspective this number is acceptable, but their turn-around-time is better than ours. Presumably it is because they have everything in place to do copy cataloging using OCLC and adding bibliographic/item records to the staff version of the online catalog is routine to them.

All the titles are searched in OSCAR and OCLC before they are submitted to the cataloging department as unique titles. While this step is time consuming it does help us eliminate at least two embarrassing situations. By checking the titles, we should be able catch books that are actually owned by OSU before sending the information to cataloging. We would then add the duplicate titles ourselves. Verifying titles in OSCAR and OCLC also gives us another opportunity to check our call numbers and correct any mistakes before the book information gets to technical services. Sometimes we just find typos and sometimes we find call numbers that are so obviously incorrect we notice them immediately. Fixing past mistakes is yet another time consuming task, but at least when the information is keyed into the online system, we do not compound the problem.

When I wonder why I am also adding titles to the online catalog that have modest circulation statistics or in some cases, have not circulated at all, I am reminded of a remark made by a colleague of mine. Her theory is that as participating members in an academic institution we are obligated to keep all sorts of materials, which may or may not be valuable to researchers at this point in time. But how can we accurately predict what someone will want fifty years from now? The answer is we can't, so we tend to hold on to almost anything that meets the requirement of our mission statement. I still receive requests for Institute reports that were published in the late 50's and there seems to be a resurgence of interest in information about the IGY. In the Goldthwait Polar Library's case, our mission statement is broad and some-

times our focus shifts to accommodate new members of our Center and trends in research. For example, when the library was first established in the early 70's there was little written about global change or global warming and now the library actively collects almost everything and anything about these multidisciplinary topics. Will this research trend continue? I can't say for sure, but I do know that today our research staff needs that material and therefore we make it available to them.

Our user pool is relatively small now, but having our unique holdings, even those that haven't circulated at present, in OCLC and available on the web in the online catalog can only increase the number of users we may have in the future. So from that perspective, this project is worthwhile.

Our library began as a small reading room with books and journals on the shelves for the benefit of the research staff of our Center, then known as the Institute of Polar Studies. As we acquired more material and later on received a small budget for acquisitions, we were still small but our collection became more noteworthy and unique. When a person was hired that actually took library classes and added Library of Congress call numbers to the books we began to look more reputable and eventually attracted the attention of university and library administrators. We resisted changing owners as we could never quite reach an agreement about control of the library, primarily because of budget issues and job descriptions. Having the GPL's holdings available on the OSU Libraries online catalog and following their circulation policies is a workable compromise. At the last Polar Libraries Colloquy in Winnipeg, Vibeke Jakobsen aptly pointed out that cooperation is imperative if we smaller libraries are to survive (Jakobsen 2001). She is right. We cannot "go it alone" as we do not have the necessary resources, expertise or infrastructure to keep up with new technology. We also cannot survive without the patrons who want to use our material. And they won't know they need what we have, if they don't even know it exists, and that we are here. We need to be visible in the online catalog, in OCLC and on the web to have our patrons find us. Obviously, we have made the right decision by accepting OSU Libraries' offer of assistance. When the retrospective part of the project is complete and the cir-



ulation subsystem is completely up and running, we will be able to objectively assess what worked and what didn't. But for right now, we are just pleased that the collaboration is still intact and producing results, although at a much slower pace than was originally anticipated.

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Session 2: Information loss

The importance of making access to Russian libraries and archives easy

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I would like to describe the whole situation in Russia using the example of the Academic City in Novosibirsk. We assume it is similar all over the country except for Moscow.

The Academic City or Akademgorodok was created in 1957 just after the government decided to establish the Siberian Division of the USSR Academy of Sciences.

The University was opened in 1959. The first lectures were delivered in the building of a secondary school and the first dormitories for the students were just tents in the forest. But the best academics of the country taught them. This tradition is still alive.

At first, there was only one department of natural sciences which combined mathematics, physics, chemistry and geology. Now there are ten departments, and they include the humanities.

In forty years NSU has trained around 28,000 researchers. Although it is a rather small and young higher educational institution (only around 5,000 students), Novosibirsk State University is one of the most famous and prestigious universities in Russia and one of the top three training specialists in fundamental research and advanced skills.

Special features of NSU include an exceptional student-to-professor ratio (4 to 1) and close links with research institutes of the Siberian Branch of the Russian Academy of Sciences.

NSU has a special system of selecting talented students. This system, the so-called Olympiad system, has been operating for 38 years. The university arranges multi-stage competitions among children in physics, math, informatics, chemistry and biology. These Olympiads cover the territory of the whole Russia and only the best among the best are invited to the special physics and math boarding school of NSU where they study for 2 years.

Integration of education and research. Located in the center of Akademgorodok, Novosibirsk State University is the home of almost half of the Siberian Branch of the Academy of Sciences.

More than 40 research institutions exist around it. Students are taught by teachers who take an active part in research and the practical training of the students is carried out in research institutes after the first three years of basic theoretical training.

So, the university provides continuous training of scientific and educational personnel starting with a specialized physics and math school for 15 years old students, then university itself, a post-graduate course for the candidate's degree and, finally, a doctorate degree.

Libraries. Of course, all the institutions and the University have their own libraries. Some of them are big and some are smaller. The students of NSU have access to the most updated scientific achievements, including computer facilities.

The *State Public Scientific Library* is the largest library in Siberia and the Far East and one of the leading research institutions of the country in the fields of librarianship and bibliographies.

The library stock comprises over 12 million volumes in a wide range of branches of science. There is a unique collection of manuscripts and early printed books.

The *Library of the Novosibirsk State University* was based on personal donations. Now it is one of the biggest in the Academic City. Since 1991 the library-information processes have been automated. All new books were indexed on card and in electronic catalogs. The electronic recordings exist in USMARC format.

Radical changes in the sphere of information technologies made it possible to create principally new media for information and document access in the library. Since April 2000 the researchers, teachers and students of Novosibirsk State University have an opportunity to work with bibliographic, reference and full-text databases, on the Internet or on CD-ROMs. They may also use the catalogs of other libraries of the city, the country



and abroad. All students have an Internet access and the Internet catalog works now.

However, all the databases are in Russian. It means, you can not exchange with foreign colleagues.

The search of new models of development of the library are connected with the participation in different grant projects, programs, competitions. The project "Open electronic library for learning and research" includes the preparation and unification of electronic information materials of different nature, unification of their description and access from Internet. The basis of the information system "Alise" is information stock on the Oracle Application Server.

We should emphasize that all the catalogs in the University library and all the institutions' libraries are in Russian. In order to use them internationally we should translate all the materials into English. It is a great job. How can it be done?

Novosoft possibilities. Who will do it? I can propose the Novosoft company. It is an IT-company, which exists for more than 10 years and works successfully on the international market. It is very important that it is registered both in U.S. and Russia. It has already fulfilled many successful projects with foreign colleagues. We propose that you order any kind of information from Russia and especially from the Siberian Academic centres and we can process, translate and send the materials to you in any convenient format.

For example, if you want to get the catalog information from the Geophysical Institute, we will make you a list of those institutes in Russia, the list of their libraries, their catalogs in English and the lists of publications in the field you order. We may create any other possibility if you like.

You are welcome to visit our web site at <http://www.novosoft-us.com>.

Information and data preservation issues

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Abstract. Industrial and business organizations, universities, governmental agencies, scientific and technical organizations, and other groups routinely lose valuable data and information. On many occasions, these losses are not known nor are their implications understood when they occur. In other instances, losses occur because technological advances make access to older data and information difficult, if not impossible. Some types of data and information are treated casually with little thought as to what will be done with them after their intended purposes. The lack of widespread efforts to acknowledge and avoid data and information losses compound the problem. Losses impede scientific and technical processes but also have long-term economic implications.

Librarians try to cope with classical issues related to acquiring, storing, managing and providing access to conventional materials but often do not have sufficient resources to be as effective as needed. Like their scientific and technical colleagues, views vary widely among librarians on what, if anything, needs to be done to improve data and information preservation. These different perspectives often depend upon experience and the breadth of their contacts with other disciplines.

This paper is based on observations, interviews, contacts with librarians, and reviews of selected parts of the literature. Comments are offered on ways to create more interaction between scientists, engineers, and librarians.

Introduction. An examination of the literature concerned with data and information¹ reveals a plethora of issues and problems. These range from those concerned with having sufficient funds to file valuable collections of northern oil and gas system collections given to a library to those concerned with long-term preservation of digital materials to technological obsolescence to lack of recognition of the value of certain types of personal information by scientists and engineers. Little emphasis is found on creating a broader aware-



ness of these problems and finding new ways to enlist support in overcoming these difficulties. This paper identifies certain ways that might be used to better meet and solve these problems.

Information on what the author believes are major issues and how they may be solved are provided in two sections. The first provides findings and observations and second, a discussion of the major issues with the identification of potential solutions. Following these sections are a summary, conclusions, and recommendations, acknowledgements, and references.

Findings and observations. The author used conventional sources for the material contained in this section. Included are recent testimonies before governmental agencies, discussions with librarians, presentations and comments at technical conferences, and comments by a number of engineers and scientists. The gist of what was learned from these sources is summarized below to show the breath, complexities, and issues involved with this problem. As often occurs when treating complex issues, there are some overlaps but these involve different facets and perspectives.

As a point of departure, this study was stimulated by testimony given by Nancy Tileston before the U.S. Arctic Research Commission in 2001 (Tilestone 2001). She commented that the computer age has coopted many words and phrases associated with the organization, retrieval, and preservation of information. Some of the more basic principles were being shoved aside as being boring or old-fashioned. Such was the case with the phraseology "information infrastructure." There is nothing more basic to the foundation of knowledge than a library, yet, when many now think of this phraseology they believe this is built solely upon cables, connections, and speed. Tileston acknowledged that this approach to information was important to the librarian but it was simply another format with its own characteristics and inherent challenges. She appealed for a broader examination of the issues and implications of this all too common, current approach.

A historical perspective. In 1985 Boorstin described the impact of the printing press upon publications (Boorstin 1985). This change meant that reading materials were prepared rapidly and in many

copies. Most of the attention at that time was placed on getting religious materials and the classics into print for various readers. Heretofore, information was in the form of handwritten manuscripts or carried in the minds of memory specialists. Little of what was carried by the memory specialists concerning historical events, discoveries, and governmental issues was captured by those using Gutenberg's invention initially. One estimate places this loss of information as being 95% of what had been available to people in earlier times. Data and information loss is not a new event. We need to revisit loss issues on an on-going basis so that librarians and the members of various business, intellectual, scientific technical communities are aware and will help take steps to minimize or avoid such losses.

Library and Repository Issues. The prime method currently for ensuring long-term accessibility is to be sure that there is a paper copy of the data and information and that it is distributed to other committed libraries which have similar interests.

Tileston's testimony covered other issues also. Another problem before many librarians today is the need for more funds to handle collections donated by agencies, industry, and individuals. Unfortunately, most donations come without funds to catalog and process them. Currently over 95% of the operating costs at Alaska Resources Library and Information Services (ARLIS), Anchorage, AK are spent in handling materials. She addressed the need for funding to be included in agency operating budgets to cover data and information preservation and access issues. Money should be sought to cover such expenses when project budgets are developed by agencies and other groups that depend upon the services that ARLIS and similar groups provide.

S. Campbell said the biggest information loss issue currently facing librarians in Alberta results when governmental publications that are shown on web sites are discarded after a few months. No efforts are made to save them because the agencies see no economic benefit in doing so. Another area of concern is the loss of data and information possessed by operating companies when they do not have effective records management systems. Also a major contributor to such losses are from mergers of companies. Mergers often lead to changes in



the records management personnel and techniques; these increase losses. These losses have an impact on libraries because companies frequently give such data and information to them when it is no longer of economic or operational benefit. These materials can be valuable to libraries because they provide background material on resources, the engineering techniques employed, and details about when certain events occurred.

Another concern of librarians in Alberta, according to Campbell, are the policies of certain companies such as Elsevier which now only offers journals electronically. Whether access is perpetual or for a given time is based on a contract. A substantially higher price will provide perpetual access; no paper copies are generated and sold by this organization. The electronic sale of books by some companies, especially the smaller ones, can result in losses if those companies go out of business.

One of the big issues in recent years for some U.S. government agencies is rescuing data and information in the Former Soviet Union (FSU) (Levitus 2002). The four data centers of the National Oceanic and Atmospheric Agency (NOAA) are involved in these efforts so access to measurements made across Russia over the years will be available to U.S. and other scientists. These measurements are needed for realistic global analyses of climatic conditions and a better understanding of oceanographic conditions. There are no other known sources for such data. The rescue efforts are complex and must be launched under the auspices of intergovernmental organizations such as the Intergovernmental Oceanographic Commission, the World Meteorological Organization, international projects, and bilateral agreements. These take substantial amounts of time and funds. These are complex exchanges. They may involve transcribing data in manuscript form or from transposing electronic media which are degrading. Acquiring such data is generally a labor-intensive task and often requires the expertise of the scientists who gathered the original data.

Impacts of obsolescence and aging. The emphasis in this subsection is on the impact of different preservation conditions for storage of magnetic disks and tapes as well as CDs containing data and information. The impacts on retrieval and preservation are briefly discussed to show what can result

from continuing usage of current techniques and the lack of attention to obsolescence and aging.

J. Varney (1999) noted that data and information recording formats have grown exponentially in recent years. Without consistent and reliable access to what is stored in these various formats, the sum of society's knowledge cannot continue to advance. To avoid losses, preservation tactics have to be developed that are as reliable as the traditional method used by librarians of making printed materials. Also, she noted that electronic formats are fragile so special steps must be taken sooner rather than later to avoid losses.

The advantages of using digital technology are tempered by the overriding question of how it will be available and accessible in the future. Another complicating factor comes from the replacement of new devices and software on a three to five year cycle. Even under the best storage conditions, digital media are fragile and have a limited shelf life. Not doing anything actually contributes to the loss of data and information. In another point Varney said that the costs and technical, legal, and organizational complexities of moving digital information into the future raise the greatest fear about the life of information for future use. Further, the owners or custodians who can no longer meet these expenses and difficulties will deliberately or through failure to act, destroy their stored objects without regard for future use.

The results of studies by Van Bogart (1996) of storage variables on the life expectancy of digital materials should alert users to some serious problems. Temperature and humidity are key variables. Serious effects on high quality magnetic tapes from storage at 68° F (20° C) with a relative humidity of 40% can be expected in 10-20 years. If stored at 50° F (10° C) and a relative humidity of 25%, their life ranged from 30 to 100 years. Effects of these same two conditions result in life expectancies for CD-ROMs of 10 to 50 years and 30 to 200 years. Buffered, permanent paper under the latter conditions should last for 500 years.

Awareness. Contacts revealed that the amount of awareness concerning limitations of magnetic and electronic files varied widely. Two examples are given to show the extremes of this issue. One of the speakers at the American Society of Civil Engineers' Cold Regions Engineering Conference in

Anchorage, Alaska, in the period May 20-22, 2002, was pleased with the river flooding and water flow data he had recorded. These had been saved electronically and would be available for his and others to use in the future. The author posed a question about how long the speaker expected these data to be available. The speaker made a nebulous response but he was aghast when it was suggested that he and his successors may be limited to a few years only, unless special precautions were taken.

W. Sarvis (2001) said that the Anacortes Museum follows a rigorous policy of transcribing oral history tapes soon after their recording. This is done to avoid loss of such information on the magnetic tapes because they start to deteriorate in a few years. Anacortes, WA, is a small town of about 12,000. The awareness of the museum oral history curator of long-term loss problems suggests that some organizations are doing a commendable job of keeping their members updated on such issues and encouraging the only known method currently of preserving valuable information on magnetic tapes acquired from interviews of local residents. The reasons for Sarvis' awareness and approach should be determined so that something similar could be employed by others.

Data and Information Losses. Dave Webster (2002) of Colt Engineering presented a paper titled "Pipeline Design and Installation and its Benefits to Pipeline Integrity." He said a recent pipeline surveyed by Colt Engineering had been in place for about 40 years. The early pipe-to-soil measurement data could no longer be found so comparing current pipeline performance with times past was not possible. He said that industry and the corrosion community needs to establish and maintain databases.

G. Desjardins of Calgary leads a company which provides analyses of pipeline inspection and corrosion measurement data for oil and gases industries in the province. In a discussion with him the author learned that their current focus is on generating responses quickly. Desjardins acknowledged that the data used for these analyses would likely not be available for significant periods of time. However, he was keenly interested in providing an access service so that such data could be used for the oil and gas industries for the

operational lives of their various systems. This interest could be a positive indication of more attention being directed to data and information loss issues.

In response to a question about his experience with data and information losses, Winston Revie, CANMET, related what occurred in an Ottawa foundry. An employee who had worked there created a database of problems concerned with its operation. After 20 years he decided to return to New Zealand. He retired and did so but not before alerting the foundry staff that he had compiled a database and it was on the hard drive of his computer. About a year later he returned to Ottawa to visit with friends. While in the Ottawa Area he inquired of the foundry about the use of the database he had created. He was told that the foundry company had replaced all of their computers some months earlier. His database was lost. He was hired as a consultant to help the foundry reconstruct and reconnect with its past experiences.

H. Webster believes that a major cause of data and information losses in industrial organizations today are the result of frequent job changes by younger staff members.⁽¹²⁾ These job changes often lead to the loss of valuable data and information because no steps are taken to acquire personal information and to have electronic and printed sources clearly identified before the departure of these personnel.

C. Smith, a computer modeler, has encountered difficulties in finding data from studies sponsored by or otherwise involving her employer a decade or more in the past. What was apparently useful data generated on these projects was not archived. Such data are needed in the preparation of geographic information systems (GIS) relating to environmental changes. Contacting the scientists involved in those projects has not been overly successful. Many retired some years ago and no longer recall where the data and information was placed.

Smith also commented about the expenses involved with archiving data. In the agency where she works it takes as much as 10% of the project funds to archive data. This may have been a contributing factor in not archiving such material in times past.



Avoidance and manipulation. Contact with an engineer and a long-time acquaintance in Alaska revealed some troublesome comments about what can occur when controversial data and information are generated for a state agency. The project he mentioned was to identify access corridors across federal lands in Alaska. Because of the nature of his input, he will not be identified nor shown as a formal reference. This individual conducted a study to identify routes throughout Alaska to about 8,000,000 acres of Statehood Entitlement Act lands. The new corridors were to connect with and expand tidewater, roadway or railroad systems currently in existence with known mineral, oil, timber, and other resource areas.

A 26-month study identified about 100 corridors and spur routes. The study results and files of data and information were forwarded to the agency sponsoring the work. The study results were not formally noted and released for publication or the public even though \$300,000 of public funds were spent for this effort. Lost or inaccessible data and information such as described here also impacts the librarian. They spend significant amounts of time and funds trying to find something that is inaccessible.

The results were to have been used to set aside access lands for those corridors. In one instance land for selected Southeastern Alaska corridors was subsequently removed from any roadway development by the Federal Government even though the Statehood Entitlement Act provides for such selections. Of the approximate 100 corridors or so identified, only 12 have been transferred to the State of Alaska. A federal agency has done little or nothing on another 29 priority corridors identified to them in 1993. A few private organizations are selecting some of these corridors and trying to make arrangements to block or charge fees for access. Two copies of the report and files were sent to the state agency which forwarded one to an Anchorage office and a related one in Juneau. Dissimilation and publication of the results of the study have been limited to a few copies being sent to the Alaska Miners Association. A wider distribution would have avoided or made difficult some of the blockages and similar events that have occurred recently.

Discussion. This section will be broadly focused and treat issues accordingly. The lack of attention in many groups and disciplines on data and information preservation and loss is disconcerting. It could well lead to the modern equivalent of the Gutenberg effect where very large amounts of valuable data and information were lost. Further, there is no broad approach currently being used widely in the U.S. to inform the scientific and technical communities as well as other groups about this problem. Librarians play a key role in addressing this issue but so should computer specialists and web masters. It is a perplexing question as to why more of the latter are not involved or were not readily identified as being so committed to the avoidance of data and information losses.

Perhaps, data storage, even in non-electronic forms, has been considered an archival issue rather than one addressed by librarians. With the exponential growth of electronic files of one type or another, this now affects all groups. Some common ground and approaches are needed to ensure that valuable records of use to librarians and others are preserved.

One approach to this problem is to increase communications between those concerned with information loss issues and other sectors of modern society. There are doubtlessly a large number of methods for achieving such a goal. Some approaches include working with the media, briefings of legislative members of government, discussions with agency leaders about the nature and impact of these problems, presentations to various organizations and disciplinary groups, and identifying individuals in other sectors who could act as "carriers of the message." Perhaps most helpful in the near term would be for PLC to make a sustained effort to get other groups of librarians to address these problems collectively. Individuals who are not librarians but aware of the issue should be working with their professional colleagues to create a broader awareness. The panel discussion at PLC 1998 concerning collaborative efforts between scientific/technical societies and librarians is an example of one method of involving people of diverse backgrounds in the discussion of loss issues (Perrigo *et al.* 1998).

Another approach would be to make contact with the manufacturers of computer information



transmittal systems. Such discussions are generally more fruitful, if some comments were made during such meetings about the economic benefits of the development of better preservation materials and systems that will readily allow access over time. Some aspects of this suggestion may be overly idealistic but all such developers and manufacturers are looking for ideas that may be advantageous to them in a competitive sense.

The problems of personal information loss are long-standing. They have been described previously at PLC. The issues related to personal information loss problems also have been discussed at NACE Northern Area Western Conferences since 1995 (Perrigo 1995, 2001). The first of these presentations led to a panel discussion of this issue at the PLC 1996 (Perrigo *et al.* 1996). Another step in the process of making others aware that NACE members and corrosion engineers are concerned about information losses was taken in 1999. A paper was given at the National Oral History Association Conference to alert them that others beside oral historians were interested in avoiding the loss of valuable information (Perrigo 1999). Making further contacts with the latter organization would likely be of benefit to both organizations. It could also be a step toward building a broader basis of concern for these issues across disciplines and interest groups.

A longer term approach would be to encourage more universities and colleges to include a compulsory course in their curricula to make students familiar with libraries, how they operate, and the major issues facing libraries and data/information preservation organizations. Having such a course would be a venue for alerting students about the information and data loss issues at the beginning rather than later in their careers. Whether some universities now require such a course to qualify for a bachelor's degree is not known to the author but formerly some universities in the United State did so.

Summary and conclusions. Comments were offered about the diverse issues involved in information and data losses. Included were examples of what can occur if preservation steps were not taken in a number of different disciplines. Creating a broader awareness of these loss issues and preventative steps is necessary. Suggestions were made about

possible methods for encouraging cooperative endeavors between librarians and other disciplines to combat loss and promote the development of new preservation methods as well as the systematic application of current procedures to avoid those difficulties.

Acknowledgements. The author gratefully acknowledges the comments and suggestions offered by librarians and many others about information and data losses issues. Nancy Tileston and Sandy Campbell, librarians, commented on perplexing problems and the need for some new approaches to loss problems. The former also kindly reviewed the manuscript of this paper to help keep it focused on subjects of interest to those who would be attending the Polar Libraries Colloquy in Copenhagen. Campbell was a member of a panel at PLC 1988 on cooperative endeavours between librarians and scientific and technical societies. This approach continues to be another means for broadening the understanding about preservation issues. The comments offered by engineers and scientists were useful in assessing current thinking about loss and preservation issues. These can be used as points of departure for all of us in broadening attention to these problems.

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Note

1. The author uses a terminology that makes a distinction between data and information. The former embodies sets of numbers or specific items which encode the values of some variable measured by a device or acquired under certain conditions or unrefined records and like items. Information embodies statements that represent answers to pre-formulated questions or that described the outcome of expected alternatives based on data. It may also describe historical collections and like materials. This terminology is an adaptation of a definition used by the U.S. Arctic Research Commission in a broader way for the physical sciences.

Session 3: Databases

Circumpolar Health Information Center: the first year and hopes for the future

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Abstract. The Circumpolar Health Information Center (CHIC) is envisioned as the US node of the Arctic Health Disparities Research Dissemination Network. The goal of the broader network is to serve as a central point of recognizance for human health efforts, including research, surveillance, education and training, communication and outreach activities. The CHIC is still in its infancy and this paper will discuss Year One objectives: maintaining and expanding the web site, forming the Users Council, and creating multiple web accessible databases. One desired outcome of this presentation/paper is that international data will become part of the Center's databases and web site.

Background. The Arctic Council was established on September 19th, 1996 in Ottawa, Canada, to provide a forum to address the common concerns and challenges faced by the Arctic nations and the peoples of the Arctic. The members of the Council are Canada, Denmark, Finland, Iceland, Norway, the Russian Federation, Sweden, the United States of America, and a number of Permanent Participants: the Association of Indigenous Minorities of the North, Siberia and the Far East, of the Russian Federation, the Inuit Circumpolar Conference, the Saami Council, the Aleutian International Associa-

tion, the Arctic Athabaskan Council, and the Gwich'in Council International.

The main activities of the Council focus on the protection of the environment and sustainable development as a means of improving the economic, social and cultural well being of the Arctic. The Council meets at the ministerial level every other year. The Chair and Secretariat of the Council rotates every two years among the eight Arctic nations, beginning with Canada from 1996-1998, the United States from 1998-2000 and Finland from 2000-2002.

Threats from environmental contaminants, particularly persistent organic pollutants and metals, and their potential bioaccumulation in the food supply play an important role in the dietary health of countries where hunting and fishing are widespread. Cancer, liver disease and alcoholism are among the prevalent chronic conditions afflicting many inhabitants of the Arctic. Emerging infectious diseases are an ever-present danger, and the thinning of the ozone layer over the Northern Hemisphere puts people's skin and eyes at increased risk.

The United States has been an arctic nation since the purchase of Alaska over a century ago. National security, economic development and scientific research are important U.S. interests in the Arctic. U.S. Arctic policy emphasizes environmental protection, sustainable development, human health and the role of indigenous people. Also important is the inclusion of indigenous knowledge in the activities of the Arctic Council's five Working Groups.

As the United States assumed chairmanship of the Arctic Council during the years 1998 through 2000, government representatives wished to leave a lasting legacy. Health in the Arctic became the area of choice. The National Institutes of Health (NIH) became involved and requested the involvement of the Division of Specialized Information Services at the National Library of Medicine since one of the major issues affecting the Arctic is the bioaccumulation of environmental toxins and pollutants. The work at NIH has been led by Dr. Phil Chen, Senior Advisor, Office of the Director,



NIH. It was through his efforts that in fall 2000 NLM committed to develop an Arctic Health web site to help organize and disseminate pertinent health information affecting the Arctic. The web site is envisioned as the U.S. node of the Arctic Health Disparities Research Dissemination Network. The goal of the broader network is to serve as a central point of recognition for human health efforts, including research, surveillance, education and training, communication and outreach activities.

Web site. The Arctic Health Website is now available to the public (<http://arctichealth.nlm.nih.gov>.) The Health Sciences Information Service of the Consortium Library at the University of Alaska Anchorage, has assumed responsibility for managing this resource. We will continue to expand and update the web site to include more health topics affecting the Arctic region, as well as links to telemedicine web sites, research projects, surveillance, education, training, and outreach activities in the Arctic region. NLM will physically transfer the files containing the web site pages to UAA in June 2002.

NLM will work with UAA to establish a users council. NLM will participate on this board, which will have authority to determine policy, priorities, and partnerships.

A discussion was held at the University of Alaska Anchorage in January 2002, to discuss a *process* to share health information. While there is not yet consensus on the full range of activities that will be included in this project, a number of topics and issues are likely candidates for inclusion in the expanded web site. Recommended topics/issues were:

- Arctic health research – including the names and contact information of investigators, populations under study, and the location of the research
- Existing data sets
- Annotated bibliographies
- Annotated lists of web sites
- Links to key organizations
- Preformatted searches for important research topics
- Frequently asked questions (FAQs)

- Searching for data and research by census tract and other political divisions
- Inclusion of grey literature
- Linking to existing resources and those under development by state, Native Alaskan groups, and others, rather than duplicating this work. This requires the development of partnerships as well as the use of tailored searching tools to facilitate searching across multiple sites
- The archival nature of the resources must be determined and plans created, where necessary.

First year objectives. The first year objectives are the web site, creating the Users Council, and developing various databases.

Maintaining and expanding the web site. Before adding or modifying any existing pages, we plan to do usability testing to observe how a person enters and navigates through the web site. Questions such as how does the design work for the intended population will be answered. The International Standards Organization definition of usability is the “*effectiveness, efficiency, and satisfaction with which a specified set of users can achieve a specified set of tasks in a particular environment.*” (Norlin 2002) Since this site will be the main door into a host of arctic health information collections, it is important that the site is easy to use. We believe this usability testing a necessary first step in developing and maintaining the site because it is important to remember that users are the only ones who really know if a web site works *for them*.

Usability testing will also uncover our use of jargon ... why do we expect others to understand the terms Indexes and Databases or cutsey names for our online catalogs? We really cause enormous training issues for ourselves by ignoring our *users* vocabulary!

There are three ways to test web sites: the thinking-out-loud protocol, where one user is observed while completing one or more specified tasks, the co-discovery method, where two or more users work together to accomplish a task, and the question-asking protocol, when a user is asked direct questions about the task being performed or about the Web site. The goal is to have the user complete a set of real tasks and then compute their success rate.

The University of Alaska Anchorage Consor-



tium Library (UAA) has done usability testing of the main library pages for the last year and a half using the thinking-out loud method. The first rule of this method is don't *listen* to users. (Krug, 2000), watch what they do in a controlled setting, rather than only, or mainly listening to what they say. Krug has two other operating guidelines to keep in mind, "testing one user is 100 percent better than testing none" and "testing is an iterative process." He mentions that representative users are not critical – unless you are designing the site with a specific population in mind. The UAA Consortium Library web site is designed for a general audience ... we grab anyone who comes in the door to test pages. While the Arctic Health site may be used widely, it is being designed for arctic researchers and the Alaska native population as its primary audience. Our mantra is "Many small tests over time will improve the web site design". Krug lists the following steps to implement usability testing.

- Form usability testing team / establish goals
- Script the tasks and objectives
- Recruit users / compensate them
- Set up room and schedule
- Test drive the test with library volunteers
- Test with "real users" and record results
- Analyze the data / revise the web site
- Test again, *and again, and again* [italics are this author's emphasis]

Historically, usability testing was the domain of large companies and cost thousands of dollars for each product. Nielsen, in 1989, pointed out that you don't need a usability lab and you don't need lots and lots of tests. In fact, testing five users will often uncover 85% of a web site's usability problems (Nielsen 2000). Krug uses two methods to test an active site: "get it" testing and key tasks testing. "Get it" tests discover if the user understands the purpose of the site, how it is organized, and how it works. Key task testing asks a user to do something and a record is kept of how well they do it. With key task testing you often get better results if the user has some control over the tasks they are given, rather than ask them to find X, ask them to find "a book on a topic of interest to them".

We will be using a software program called

Camtasia to test the Arctic Health website. The software will be loaded on a laptop which can be connected to the Internet. A microphone is used to record the verbalized thought process. A list of tasks will be given to the user, and after making sure they understand the process, we will disappear. The software creates a movie that records each mouse click, and keyboard entry. Their spoken thoughts will also be recorded. We will then analyze the data and revise the web site as needed. And then test again!

A major concern will be whether or not disparate audiences will be able to use a single site effectively. How many of you think we will be designing two sites?

Do not confuse usability testing with focus groups. A focus group provides *impressions* in a *group* setting. In contrast, user testing is one person accomplishing one or more *tasks*. Focus groups help to set design goals, use testing refines the use of the product. Use testing means that the **USERS** are the focus! It is also not validation but evaluation.

Why would you want to do usability testing? Mainly to uncover problem areas on your website. Within our profession, we tend to suffer from a "We know best" philosophy – our expertise can be a *disadvantage* because librarians see themselves as advocates for their users, we think we know what they need. Users tests are NOT the creators of the site or other "expert" users giving impressions and input, or the boss or other influential persons making decisions.

When should you NOT do usability testing? When you are unwilling to make changes to your web site, for whatever reasons – political, lack of staff, etc.)

Problems uncovered with the web site will be taken to the Users Council.

Users Council. The Users Council will be formed later this summer. This group will be composed of key potential users of the site: arctic scientists, Alaska natives, and individuals from NLM and UAA. One of the first issues the Council must address are the definitions being used, and the scope of the site. For instance, there are distinctions among such terms as arctic, sub-arctic, circumpolar, and "covering all of Alaska." What is meant by health: physical, environmental, mental, and/



or spiritual? Since health and health care are viewed holistically by the Native Alaskan population, resources must reflect that perspective. This web site may be an important tool for planning research activities, engaging communities, and developing partnerships and the content should reflect that. Traditional healing is a very sensitive issue for the native communities. Different villages and communities may take a different stance on what, if any, information they would be willing to share electronically. Much of this information exists only orally and has never been written down. Indeed, writing may not be an acceptable method to capture this information and other formats should be explored such as audio or video. It is also possible that very little traditional healing material will ever become part of this site.

It is important to note that this web site is one of several that NLM is developing to target specific population groups, health issues, or geographic areas. This web site will serve as a template for the organization and development of these other sites.

The Council will also have to decide on a name for this new entity. What's in a name? To date, two contenders have surfaced: the Arctic CHILD (Arctic Center for Health Information, Literature and Data) and CHIC (Circumpolar Health Information Center). Both have positive and negative aspects. The Council will create policies and procedures and will have the authority to determine how the web site grows and changes.

Databases. We envision a number of web accessible databases on the site, the first being a literature database, created from the Inuit Health literature which currently exists as a book and in a local ProCite database, and will expand to include health information beyond just the Inuit population. Alaskan health grey literature will be added as well. Lastly, a contacts database will be created. All of these will require careful planning and implementation.

Open Source Software. One of the goals in adding new resources to the Arctic Health web site is to use Open Source Software. This requires that all software comply with the so-called "copylefted" legal standard of the Free Software Foundation (see <http://www.fsf.org/> for more detail). No

web service developed in this project will use proprietary software. We will use software that is freely available and adaptable to anyone. Because of the significant potential for international interest in the data and the developed Web services, using Open Source Software will make the new data on the Arctic Health website open to all.

Inuit Health Database. As noted above, one of the initial projects will be to make the Inuit Health Database available on the Web. This listing of health literature is currently available only in print and in a proprietary database that is not available via the Internet.

Our plan to make this data available on the web will involve:

1. The Inuit Health Database data will be stored on a server running the Open Source Linux operating system (a proven platform for this type of service).
2. The web server software will be Apache, another Open Source Package that is currently by far the most common website server on the web (see <http://www.apache.org/> for more detail).
3. The database will be constructed using PostgreSQL. This robust database is highly scalable and an Open Source application of long standing.
4. The programming language, which will get these elements (the operating system, web server, and database application) to "talk and work" with each other, will be the Open Source scripting language PHP. Developed exclusively for Web applications, PHP is also a good choice for our project because of burgeoning expertise in this scripting language by our project developers.

Rationale for the Design of the Web-based Inuit Health Database. In any database, a critical component of design is defining the entities, i.e. the basic objects or things that comprise the database (see *Web Database Applications with PHP & MySQL*, William's and Lane, p506). In language or grammatical terms, entities are analogous to nouns. For example, the Inuit Health Database in its current form is essentially a listing of citations to health literature on the Inuit. For the purposes of data-



| | Columns: Title | Columns: Format | Columns: Location |
|-----|------------------------------|--------------------|----------------------|
| Row | Whale meat and dental health | Book | Smalltown PL |

Table 1.

base creation, then, each citation can be considered an entity.

There are other objects, or things, within the Inuit Health Database which will be retained in the web database. For example, there are broad classifications that group the citations by topic. These classifications will be expanded and altered to provide controlled natural language queries within the database. Each classification, or topic, will be an entity within the database.

The citations have also been grouped, in the ProCite version, “type of paper” Narrative Personal, Narrative Historical, Clinical Treatment, or Clinical Etiology. These groupings will be retained in the web database, each comprising an entity and providing a way for researchers to find material based upon this criteria. Yet another grouping is by geographic locations. This geographic breakdown will be retained, expanded upon, and reworded within the web database.

Database creation begins with the broadest brush strokes or the big picture view. It is important to define entities and attributes before jumping into the more familiar world of records and fields.

Following the definition of entities within the database, attributes can be assigned to more fully describe the entities. In terms of language or grammar, attributes are analogous to adjectives or even adverbs. For example, each citation contains a title (the name of the thing) or the location of the item (whether physical as in the location of a book or other print document, or a URL or other means of locating Internet resources). Attributes help to more fully describe the entities, to help distinguish one from another.

With the development of attributes, we are beginning to create tables within the database. Tables provide a visual mechanism to get a sense of the database. Tabular representations of databases are composed of entities (which are rows or records) and attributes (which are columns or fields).

For example, a fictitious citation for, “Whale

meat and dental health”, a book, located in the Public Library of Smalltown, could be put in table form as in Table 1.

Here, the row defines the entity (the actual citation), while each column provides an attribute that further describes and distinguishes the entity. In database terminology, a row (or entity) is sometimes referred to as a record, and the columns (or attributes) are referred to as fields.

An important consideration in designing relational databases is to try to eliminate duplication of information. Duplicate data increased the size of the database and slows performance. In addition, duplicate data requires more time, and if revision is needed requires extensive effort.

Duplicate data can be countered by determining relationships between entities within a database at the beginning. For example, in the Inuit Health Database, authors are obviously entities, as well as attributes because those who wrote the works helped to define the citations. Consequently there is a relationship between citation entities and author entities in the Inuit Health database. In terms of language or grammar, relationships among entities are roughly analogous to verbs.

Consider the following fictitious author and citations: Sandra Smith wrote “Native Health in Nome” in Northern Health, “Native Health in Homer”, in Arctic Health and “Native Health in Tok” in Arctic Health.

These could be presented in three tables as in Table 2.

By having the author in a separate table and the journals in a separate table, the details for each item are listed only once. The relationship between the entity citations, the entity authors and the entity journals, is linked through fields in the citation table (e.g. Author ID and Journal ID). If an entity changes (such as the author becoming Associate Professor Sandra Smith at Polar College or the journal Northern Health changing location to New York City), the change is recorded only once in the respective entity table. However, the change in these entities is reflected in each citation entity



Author Table

| | Columns Author ID | Columns Position | Columns First Name | Columns Last Name | Columns Affiliation |
|-----|-------------------|------------------|--------------------|-------------------|---------------------|
| Row | 1 | Instructor | Sandra | Smith | Arctic College |

Journal Table

| | Columns Journal ID | Columns Journal Name | Columns Location |
|-----|--------------------|----------------------|------------------|
| Row | 1 | Arctic Health | White Horse |
| Row | 2 | Northern Health | Dillingham |

Citation Table

| | Columns Title | Columns Author ID | Columns Journal ID |
|-----|------------------------|-------------------|--------------------|
| Row | Native Health in Nome | | 1 2 |
| Row | Native Health in Homer | | 1 1 |
| Row | Native Health in Tok 1 | | 1 |

Table 2.

in one fell swoop because of the links among the tables.

Current Status of the Inuit Health Database. As of this writing, the design for the Inuit Health Database will be composed of at least twelve tables, all linked by a variety of relationships. The database will include the existing data but will be designed to include any new data via simple web forms. With a proper eye toward developing this resource, soon all of the Inuit Health Database, will be available to anyone with a web browser and an Internet connection.

Future Projects. Following implementation of the Inuit Health database, we plan to create additional resources that will be database driven. These include a database of research projects and another database of contacts within arctic health research. In each instance, the projects will use Open Source software and be designed with the utmost care to ensure each project database is efficient and fully relational. One aspect of this efficiency permits online entry of information by a variety of interested participants. Data from universities, tribal health consortia, the native science foundation, and directly from the scientists can be easily added. Our last major goal for the first year will be to find a way of searching across databases ... a one-stop-shopping approach to Arctic Health information.

Conclusion. If we build it, who will come? We hope the arctic research community, Alaska natives, health care providers, and other residents of Alaska. We know that administrators within the University of Alaska system will be interested as well as NIH. By speaking here at the Polar Libraries Colloquy, we hope to encourage international visitors as well.

I'm here today because the Arctic community has a tradition of cooperation. I want to make sure as much arctic health information is available on the Arctic Health website as possible. With this goal in mind, I polled the PLC listserv and had a number of responses. With permission, I will add these suggestions to the Arctic Health web site. Ideally, I would love to find one or more ongoing partners to continue building this site. Or separate nodes could be developed – perhaps funding could be found from your federal governments. One last possibility – I mentioned the Arctic Council Working Groups at the beginning of this talk – to qualify for funding as a working group initiative, a partnership of at least two member countries is necessary. The US and perhaps your country could begin that partnership.

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Developing a map search interface for Arctic Research Institute Database using GIS system integrated with SQL relation database

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Abstract. Arctic Centre is maintaining a database of Research Institutes doing research in the Arctic and Antarctic Regions. The database system used earlier was a free-text database software that allowed boolean searches from text documents. There was need to do also searches based on the location of the institute. Several solutions were evaluated for the map interface. The most suitable solution was to export the database into SQL Server database system and use MapXtreme software from MapInfo for the map interface. This project had following sub-projects: creating the SQL database and exporting the data, inputting the geo-reference data into the institution records and then finally building the map interface application. The same technique has been applied to show traffic data from the Barents Euro-Arctic Transport Area. The address of the database is: <http://www.arcticcentre.org/databases>

I will also shortly present the Barents Information Service project proposal that Arctic Centre (Liisa Kurppa as main coordinator) together with the Working Group for Information Technology of the Barents Regional Council is preparing for the Interreg IIIa KolArctic program. The purpose of the project is to create a portal that offers structured information on the Barents Euro-Arctic Region (BEAR) and establish a dedicated search engine for information on BEAR and to offer this en-

gine to information providers that are approved by a quality control system.

Introduction. There was a need to transfer the database of the Arctic Research Institute into a new system because the one of the University of Lapland was cumbersome to use and very unstable. Even though Arctic Centre and the University paid a lot for the maintenance and license of the software, we did not get any improvements.

As it would be expensive to replace the old software with a commercial database solution, we decided to do what we could with available resources and also use student work from local colleges. The project has the following phases:

- Prepare a GIS file containing locations of research institutes and add the coordinate information for each research institute in the old database system
- Import data into the SQL Server
- Develop database structure
- Build the applications to edit and view data in the SQL database
- Evaluate and selecting suitable software to show GIS-information on the web
- Build the web application that combines the GIS interface and the data that is in the SQL databases
- Develop user interface.

Creating a GIS file with locations. MapInfo Desktop Mapping software was used to create a file that contains the towns where research institutes are situated. From this file the coordinates were extracted manually for each institution and saved into the former database system. This part of the process took a lot of time and was quite unexciting.

Importing the data. The former database software was a free-text database and the records could be exported as one text-file where the beginning of each document was marked with special separation character. Table 1 shows all the information for one individual institute as one document, but there was a loose structure and tags showing where one part of the document started, for example the name of the institute or the keywords. In order to import the data into an SQL database,



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/KW KEYWORDS: mathematics physics
chemistry biology
economics history
philology humanities
law finno-ugric

/PC PUBLICATION: the SSU bulletin for all the fields of
research and "Roobezh" for Social
and Political Sciences. Besides, the
SSU issues the newspaper "Verbum".

REMARKS: Established: 1972
Staff: about 352 full and part-time
professors

/CO Coordinates: E50.82 ; N61.67
Syktyvkar

Table 1. Exported record from the former database system.

where the information is stored in separate columns, an SQL script that could recognize the beginning and end of each field was programmed. This worked out quite well, but the input data was not very consistent and there was a lot of manual work to tidy up the data later.

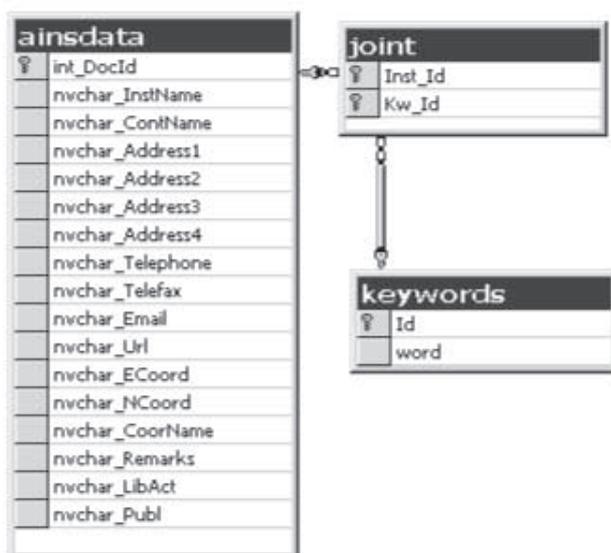


Figure 1. Database structure and relations.

Database structure. The database tables were designed to extract keywords from the data and store them in a separate keyword table. Links between the institutes and keywords are created with a table that contains the id-fields of the institute and the keywords. The database structure and relations are shown in Figure 1.

Application for managing data. The web pages that are needed for browsing and editing the data were done using VB Script programming language. The databases are managed using standard browser and the user is identified by userid and password. Fifteen asp (active server pages) files with VB Scripting were needed for the maintenance of the data.

GIS application. MapXtreme software was used to create the map interface for web user between the data in the SQL Server and the locations in the GIS file. MapXtreme creates an image file from the GIS data for the browser, no extra components or plugins are needed. The user can navigate in the map using Zoom In/Out and Center tools. It is possible to have different layers on the map when the user zooms into smaller scale, for example roads, rivers etc., but for the sake of clarity and speed these themes were not used.

Using Info-tool user can select locations from the map and the application creates a link to the data in the SQL Server database. The institutes are identified using the X and Y coordinates that the MapXtreme gives for the selected location and comparing them with the data in the institution table. Figure 2 shows the technical concept of the system.

The web application for the map was done with VBScript programming language. A lot of sample code from the demo applications which came with the software could be used. There is good technical support site, a discussion list where you can send questions and getting answered the next day. This site is acts also as an archive storing old questions and answers.

User interface. Developing a user interface that is simple and easy to use is the most difficult task. Since self been so involved with the designing and building the system it is difficult to see it as someone who uses it for the first time. The application

has been tested with people who were not familiar with it and they were given a task to find an institute by its location. Most difficult for new user is how to learn to use the map. After finally learning it they find it useful and “nice”. Many test users went straight to search form and found the institute using it.

Conclusions. Since the work was done in between other duties the project took quite a long time, this was started about three years ago. Using the labour from local collages and employees from labour office the costs were kept low. The most expensive was the MapXtreme software. Creating user interface is demanding and this process is still going on. The database is at the address: <http://www.arcticcentre.org/databases>

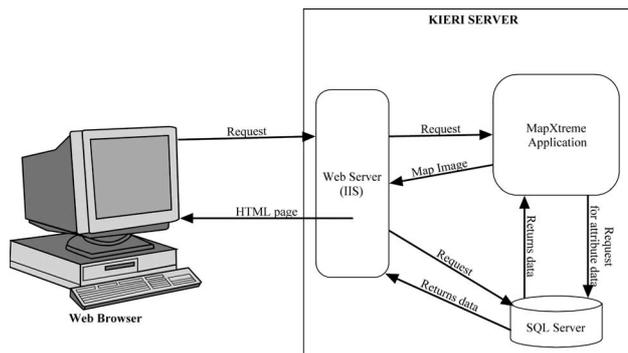


Figure 2. System diagram for the web application.

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Barents Information Service – project (BIS)

In the BIS-project the information concerning the Barents region will be collected and arranged as a user-friendly www-based information product. At the same time the project aims at making the Barents region more well-known globally.

Until now the information of the Barents region has been collected in several places and scattered in separate countries. Implementation of this project requires synergy of the information providers and expert organisations and the transformation of common centralised services as an electric information product.

It is the intention to start the work in the beginning of 2003. The first steps will be: To coordinate and reorganize systematically a network of information providers of the region (statistics, tourism, traffic, population information, energy production, customs information, etc.), to promote the networking of expert organisations, and to unify the information production as a Internet-based information package.

The objective of the project is to work in very close cooperation with other organisations nationally and internationally within the whole Barents Region. The information providers commit themselves to constant supply of updated information through the www-portal.

The data contents of the portal consist, among others, of the following:

- Experts and expert organizations of different fields, e.g. science, research and education
- Project databases
- Maps and links to maps sources
- Barents working groups by sectors, e.g. indigenous people
- Existing portals: cross border customs, road and traffic
- environment (environmental impact assessment, natural resources, energy)
- population (e.g. population structure, indigenous people)
- statistics
- tourism
- article services and news services, e.g. North West Russia News, Newsletter from Murmansk Barents Information Centre, RAIPON Newsletter Indigenous “Peoples World”
- calendar in events and official BEAR News at regional level

The existing telecommunication infrastructure and the information and communication technology cooperation in the Barents Region, as well as already produced and new www-portals will be utilized in the project.

The re-established Working Group for Information Technology of the Barents Regional Council serves as the project support, and the team members will be bound to the project as experts and contact persons. There will be also cooperation with the Barents Euro-Arctic Council, the Barents Regional Council and the Barents Regional Committee.



Definitions

GIS (Geographical Information System): GIS is a system of hardware and software used for storage, retrieval, mapping, and analysis of geographic data. Spatial features are stored in a coordinate system (latitude/longitude, state plane, UTM, etc.), which references a particular place on the earth. Descriptive attributes in tabular form are associated with spatial features. Spatial data and associated attributes in the same coordinate system can then be layered together for mapping and analysis. GIS can be used for scientific investigations, resource management, and development planning. <http://www.nwgis.com/gisdefn.htm>

SQL (structured query language): A database query and programming language originally developed by IBM for mainframe computers. It is widely used for accessing data, querying, updating, and managing relational database systems. There is now an ANSI-standard SQL definition for all computer systems.

Relational data model: A method of organizing data into two-dimensional tables made up of rows and columns.

Relational database: A collection of information organized in tables, each table models a class of objects of interest to the organization (for example, Institutions, Experts, Publications). Each column in a table models an attribute of the object modeled by the table (for example, Name of the institute, Address). Each row in a table represents one entity in the class of objects modeled by the table (for example, the Danish Polar Center, Copenhagen). Queries can use data from one table to find related data in other tables.

Relational database management system: A system that organizes data into related rows and columns. SQL Server is a relational database management system (RDBMS). (SQL Server Books Online)



Session 4: The library users in the online age

The Polytechnic Library and education in a sparsely inhabited province

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Rovaniemi Polytechnic Library*

Abstract. Rovaniemi Polytechnic Library serves the schools and colleges within the Rovaniemi Educational Federation of Municipalities. The basic task of the library is to meet the information needs for studying and teaching as well as to support the research and development activities of the schools and colleges.

During the last years the polytechnic has been widening its learning environment into virtual and web-environments. Distance learners should have the same access to library services than on-campus students, to both printed and electronic collections, reference services and end-user training.

Rovaniemi Polytechnic Library has taken its first steps in distance services (or web-based services). We will start a distance course, which includes end-user training, information search and management skills, information literacy and evaluation. We are also developing further courses for different degree programs.

Introduction. Rovaniemi Polytechnic plays an important role as an educational institution and an active regional participator in Lapland. Similarly, in the polytechnic library we hope to be able to extend our services to the large area of Lapland. New educational methods and environments, such as distance and e-learning in general, require new practises and services. In libraries this means that interactive library systems, net-based information services, virtual courses and electronic archives should be available for the clients.

Background. The Finnish system for higher education consists of two parallel sectors: universities and polytechnics. Universities emphasize scientific research and offer studies to a doctorate level.

Polytechnics are mostly multi-field and regional institutions of higher education, emphasizing working life contacts in their operations. Compared with universities, polytechnic studies are more practical oriented. The intake for 1999 accounts for 66 % on average of the relevant young age group within the entire higher education system.

The polytechnics were established during the reform process of the 1990's. They were formed on the basis of the institutions that had formerly provided post-secondary vocational education by raising their standards and by joining several institutions to create multi-field polytechnics. The aim of the process was to strengthen regional development and the co-operation between the polytechnics and small and medium-sized enterprises and providers of welfare services. Moreover, the purpose of establishing strong, multi-field units was to create new degree programmes to serve the needs of the changing working life.

A network of 29 polytechnics covers the entire country. Because of their regional nature, polytechnics are mostly maintained by municipalities or federations of municipalities. In some cases, local authorities have established limited companies to maintain a polytechnic. All Finnish universities are owned by the state, whereas all polytechnics are either municipal or private. Polytechnic degrees are higher education (Bachelor's) degrees with a professional emphasis and usually take 3.5-4 years. In 2000 about 24,000 new student places were created with the polytechnics.

Rovaniemi Polytechnic was established in 1996. It has about 3,000 students. The Polytechnic comprises eight schools, and all of them have had an important role in providing professional education and expertise in the Rovaniemi area for many decades. The Polytechnic concentrates on tourism, software engineering, high technology and cold climate expertise. Other focal areas are utilisation of the possibilities offered by Barents region co-operation, rural business management and development of sparsely populated areas and welfare



services. Rovaniemi Polytechnic is maintained by the Rovaniemi Educational Federation of Municipalities. In addition, the federation maintains five other vocational colleges. The total number of students is approximately 6,500.

The library. Rovaniemi Polytechnic Library was established by merging the small library units of the polytechnic schools in one organisation. The new library started its operations in January 2001. The library serves all the schools and colleges within the Rovaniemi Educational Federation of Municipalities. It provides services in ten library units. The basic task of the library is to meet the information needs of students and teachers as well as to support the research and development activities of the schools and colleges. It also provides information services for work and business life and it operates as an open library for other customers than the polytechnic or college students and staff as well.

The library belongs to the Aurora library system, which is the prevailing system in the public libraries in Lapland. The cooperation between the polytechnic library and the public libraries in the region is very close. However, the polytechnic libraries in Finland are gradually, in 2002 and 2003, entering a new system called the Voyager. The transitional period in the Rovaniemi Polytechnic Library will be over in the summer 2003. The decision to take up a new library system will hopefully improve the library's cooperation with scientific libraries. The Union catalogue of Finnish Polytechnic Libraries will also improve the access to collections of the libraries. Still the library also needs cooperation with public libraries. Many distance learners use the Rovaniemi Polytechnic Library through their own municipal public library in the form of inter-library loans. In addition, Rovaniemi Polytechnic Library and the University of Lapland Library are considered as the central scientific libraries in Lapland as well Kemi-Tornio Polytechnic Library and Information Services.

Library and information services for students.

Rovaniemi Polytechnic Library offers students a learning environment with good collections, essential electronic databases, an adequate amount of computers and effective, flexible lending services. The library also focuses on providing the

students with sufficient end-user training and information services.

The library is organized according to collections, databases and the expertise of the personnel into four special libraries on Tourism, Welfare services, Technology and Natural resources. The collections are emphasized especially on the demand of the degree programmes of Rovaniemi Polytechnic. The aspect of the North is well represented in the collections, which include about 90,000 books, serial publications, theses, magazines and videos. The supply of electronic materials is versatile.

Easy access to library resources is essential for students. The location of the library should be good and the opening hours practical and flexible. Because the Rovaniemi Polytechnic Library has ten library units and the number of the staff is only thirteen, the opening hours are at the present more restricted than desired. Yet, one of the positive aspects of being scattered all over the town is that each library unit is located close to the clients in the schools. Libraries are becoming more popular than before. In 2001, 310,000 client visits were recorded. Some 160,000 material units were checked out.

During the past few years library has systematically trained clients in how to search and acquire information. The aim is to give students training in basic information search as they start their studies, and furthermore, to support them during the course of their studies to improve their information research skills. The ultimate goal is that once the students are working on their thesis, their skills to search and evaluate for information would have developed so that they are able to produce reliable information themselves. It would be ideal if the teachers and the librarians could work together in training the students to find valuable information for their studies. Good collection policy in library supports end-user training, too.

Virtual teaching and learning is a developing field in the educational system in polytechnics as on other educational levels. In e-learning students must be more critical as they look for information resources, use them or produce information themselves. The new situation requires new divisions in the duties of teachers and librarians. Teachers and librarians have to work together to acquire, look for and establish information for e-learning



purposes. It is also vital that the services of a library can be obtained over the Internet.

End-user training in e-learning environment.

Rovaniemi Polytechnic and Kemi-Tornio Polytechnic Libraries started a project called "Virtual information acquisition environments" in the autumn of 2001. The project is part of the national virtual project of the polytechnics. The project aims at involving libraries in virtual learning environments and improving know-how in information search on basic and field-specific levels. In addition, the project aims to develop and improve accessibility and availability of electronic materials. Output of the project will be for example:

- virtual course in basic information search
- field-specific virtual courses in information search
- virtual thesis workshops

Starting from the beginning of the autumn term of 2002 the Rovaniemi Polytechnic Library will arrange a compulsory information search and literacy course for new polytechnic students.

The objectives of the course include the following: "Student perceives the meaning of personal and continuous information search and literacy skills as part of his/her learning process and as an important aspect in the development of his/her personal professional competence. The student should be able to use and choose from the selection of information resources available. S/he should also be able to critically assess the information from these sources. S/he should also be aware of the copyright issues and legislation concerning the use of the information from these sources."

The basic course emphasizes the technology of acquiring information. Advanced courses, which are field-specific, offer information about field-specific sources, their substance and literacy. The minimum level of the information retrieval skills is also defined.

We are looking for the success and applicability of this course in a virtual learning environment. Experiences from contact teaching have shown us that students need somebody to show them "by the hand" how the database works and where the mistake happened. Direct feedback and immedi-

ate answers are the important aspects of contact teaching. The same means are not available as such in a virtual learning environment. We have tried to make the course as detailed as possible in order to avoid ambiguity. Information specialists act as tutors in the virtual course. Their experience in teaching can anticipate the students' need for support.

The role of the information specialist in the graduation process of the student is to give information and guidance about use of up-to-date sources and references and their availability for the thesis. In the thesis workshop the student gets help from his/her tutors, the information specialists and the clients who have commissioned the study. The project of the Kemi-Tornio Polytechnic and Rovaniemi Polytechnic also includes a plan to develop virtual information services to support students during the whole course of their studies. In addition, the polytechnics aim to create a meta-database of virtual learning objects.

The project of the Rovaniemi and the Kemi-Tornio Polytechnic is corresponding with the national virtual strategy of the polytechnics in Finland. Libraries offer their clients electronic materials and tutoring in how to use them. Furthermore, libraries have the know-how about metadata of the digital materials and web-sources. This is essential in creating archives for the digital learning objects.

Distance learners and electronic materials. As distance learning becomes more common, the distribution of printed materials becomes more problematic. Sending books across the province with long distances is slow and relatively costly. The students have to pay for these services and therefore the position of students who participate in contact teaching and those who are distance learners is not equal. Some books are out of print and new editions cannot be ordered anymore etc. Rovaniemi Polytechnic Library has tested several methods and ways to make course books available for distance learners: reference library collections in partner schools and dissemination through traditional means of long-distance lending services. In addition, the library has carried out a project in which interactive library services were tested so that customers who had an access to the common database of the library, could use



the system to reserve books directly from the shelf. These books were then delivered to the library which the customer had indicated for the reservation price (without the long-distance lending fee). This practise increased the logistic expenses of the library. Therefore, the only economical solution seems to be electronic books and periodicals.

In the Undergraduate Library (University of Helsinki) some of the most popular and out of print course materials have been digitized and transferred to the web. The costs have been covered by a project. (Rouvari 2002). On the one hand, the copyright of the Finnish materials was free, but on the other hand, the process of digitalisation proved to be relatively expensive. Maybe digitalisation of some materials would be the solution in the Rovaniemi Polytechnic Library, or within a bigger consortium, too.

The usage of electronic materials in distance learning is complicated by the user agreements with the database producers. In worst cases these authorities may even eliminate the possibility of use. In most cases the agreement entitles members of the organisation to use the database in the network of the Educational Federation of the Municipalities.

Electronic materials for the academic libraries in Finland are acquired through the FinELib consortium as a centralized procedure. FinELib, the National Electronic Library, acquires Finnish and international resources to support teaching, learning and research. Science-specific expert groups propose electronic publications to be acquired. FinELib negotiates user-rights agreements for electronic resources on a centralized basis for its member organisations.

The university libraries receive central government funding via the Ministry of Education. An agreement on how the costs are divided has been signed between the university libraries and the universities. The Ministry of Education financially supports the participation of the polytechnics and the provincial libraries in the consortium. In addition to the central government funding the universities, polytechnics and provincial libraries finance all acquisitions out of their own budgets. The National Library charges the polytechnics, research institutes, and provincial libraries annually for acquisition services and for extra services. At

the moment there are about 6,000 full-text online journals, 90 reference databases, dictionaries, and reference books.

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Electronically influenced changes in library users' behavior: a case study at the Institute of Arctic and Alpine Research (INSTAAR)

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Abstract. The typical researcher at INSTAAR now begins his/her quest for appropriate resources by performing an online search in his/her office. Online library catalogs and reference databases quickly link the user to full text journal articles through the University of Colorado Libraries subscription services. An increasing number of users now confine their use of the literature, polar and otherwise, to electronically available resources in a 'virtual' library. These people no longer, or only rarely, appear in a 'real' library to search for further materials.

The profound effects of this recent change in user behaviour are documented in this paper, using both empirical and qualitative evidence collected while preparing a 'white paper' on the future of the library at INSTAAR after 2002. Demographic changes, administrative decisions and the physical division of INSTAAR personnel into two buildings are also discussed.



It is hoped that this paper will generate feedback as to whether or not other libraries are experiencing similar changes and particularly how we, as librarians, can react to these changes effectively while maintaining quality service.

Introduction. The Institute of Arctic and Alpine Research (INSTAAR) is an interdisciplinary research institute of the Graduate School of the University of Colorado. INSTAAR emphasizes the environmental and social sciences (anthropology, biology, engineering, geography, and geology), especially as they pertain to high altitudes and high latitudes and to former cold environments of the Quaternary period. INSTAAR investigates how these environments affect, and are affected by, natural and human-induced processes on local, regional, and global scales, using a holistic approach to earth system science. INSTAAR celebrated its 50th anniversary last September!

Throughout its 50 years INSTAAR has maintained a special library collection, now known as the Reading Room. In the 1960s this collection, then called the Mountain Library, was supported by the university as an official branch library at INSTAAR's Mountain Research Station (MRS). INSTAAR still maintains a small collection, administered as part of the Reading Room, at the MRS. In 1970 the university discontinued its support at the same time as INSTAAR moved from its main campus offices to its present east campus facility. INSTAAR felt the need to continue to have its own specialized collection for two reasons. First of all, the 3 km. distance from the main campus generated a need for frequently used materials to be on the premises. Second, INSTAAR needs to archive and make available unique materials not available on campus. The Reading Room is staffed with one professional librarian with appropriate subject background, and one library assistant. The Reading Room collection now numbers some 3600 monographs, 400 theses, nearly 200 journal titles, and over 2,500 reports.

Some 100 scientists – faculty, research scientists, visiting scientists, postdoctoral fellows, and graduate students – use this collection to support their teaching and research needs. INSTAAR typically has about 50 graduate students resident at their main facility on the University of Colorado east campus. These students, under supervision of de-

partmentally tenured faculty who are also INSTAAR fellows, carry out their main research and laboratory work at INSTAAR. However, INSTAAR does not grant degrees, and all students work through one of the university departments also.

In 2000 and 2001, twenty one students completed nine Ph.D.s, eleven M.Sc.s, and one MA. Of these degrees granted, three were through engineering departments, three were through the geography department, and fifteen were through the geology department. The ratio of Ph.D.s to M.Sc.s and M.A.s has remained constant at 50:50 over the past 33 years, during which time 264 degrees were granted to INSTAAR students. It may be assumed that the twenty one students finishing degrees in 2000 and 2001 were responsible for a large portion of the library use in the preceding seven or so years which coincides with the length of journal circulation statistics discussed later in this study.

The specialized nature of the collection, and its convenient location within the INSTAAR research complex, have ensured its survival to date. However, as anyone familiar with the provision of information resources recognizes, this is a dynamic business and over the past 5-10 years technological changes have affected the very nature of scientific inquiry and communication. INSTAAR science, once focused on Quaternary glaciation in North America, has become widely diversified in concert with new scientific funding initiatives at an international level. Therefore reading and publishing habits have expanded from 'cold regions' and geology into journals covering ecological applications, global and planetary change, biogeochemistry, hydrology, geophysics, and computer sciences, etc. Information technology during the 1990s has come of age in terms of supplying, to the desk top, full text of scientific articles in addition to a range of other web based research materials such as data files, preprints, etc. These changes in scholarly habits and technology have had significant impacts on our Reading Room at INSTAAR, as they have to other polar science libraries to a greater or lesser degree.

This paper and this venue present me with an appropriate opportunity to discuss changes introduced above, and their impact on the future of INSTAAR's library. I plan to retire at the end of 2002 and have been put in charge of a transition team



tasked to evaluate the current state of the Reading Room and recommend the direction it should take after 2002. The team is to consider three scenarios: 1) keeping the Reading Room status quo, 2) putting more resources into the operation, or 3) discontinuing it completely. A decision regarding the future of the Reading Room will be made in the fall of 2002. The materials developed to aid in this decision making process are presented and discussed in this paper.

Methodology. Qualitative data were collected through an interview process designed to allow input from all of the nearly 100 scientists at INSTAAR. Quantitative data were assembled using book and journal circulation statistics kept manually, and computerized databases of book, journal, and theses holdings.

For administrative purposes the INSTAAR directorate has been divided for the past several years into three research focus groups – Past Global Change, Geophysics, and Ecosystems. The Past Global Change Group, including the Center for Geochronological Research, has fifteen graduate students and three tenure track faculty members in the geology department. The Geophysics Group has nine graduate students and three tenure track faculty members in geography, engineering, and geology. The Ecosystems Group has twenty-three graduate students and four tenure track faculty in the biology, geography, and engineering departments. There are also several research scientists, postdoctoral fellows, and visitors in each group. The present balance of students among groups, with approximately half being in Ecosystems, is a recent shift.

Although the INSTAAR directorate recognizes that the community formerly provided by a unified group has been somewhat compromised by this division, it does make sense in an enlarged in-

stitute with increasingly diverse interests. This larger institute now occupies space in two buildings rather than the one that held the whole group for thirty years.

Each of the three research groups was invited to set up an informal meeting in the Reading Room to discuss, with the librarian and members of the transition team, a number of issues regarding their group's information use and the future of the Reading Room. The Past Global Change Group and the Geophysics Group each set aside an hour for these discussions. The Ecosystems Group declined the invitation for a group discussion but did e-mail some comments.

Issues discussed were chosen by the transit team to elicit information thought to be valuable in their decision making process. These are:

1. Information finding habits – procedures used to locate reference materials for various purposes;
2. Use of other libraries on the university campus and at nearby federally supported facilities;
3. Influence of electronically delivered information – the impact of electronic delivery of information;
4. The impact of the recent division of INSTAAR into two buildings; and
5. Suggestions for the future of the Reading Room after 2002.

Information finding habits. All users begin their information searches at the office computer, searching a range of reference databases, electronic journals, and web sites with data and other types of information presented electronically. Past Global Change Group members are most likely to use the Reading Room to check out needed materials of all types, to use databases only available in the room, and to browse. This group has traditionally been dominant in terms of graduate students, but this is changing. The Geophysics Group has very similar, although less frequent, use patterns. The Ecosystems Group uses the Reading Room less than the other groups. These differences in use are illustrated in Table 1 and Table 2.

In Table 1 the 3,600 books in the INSTAAR collection are divided into subject areas in the first column, into % in the collection in the second column, and INSTAAR book circulation records col-

| | % in collection | % used | % difference |
|--|-----------------|--------|--------------|
| Geography and geology | 41 | 69 | +28 |
| Bio-sciences | 26 | 12 | -14 |
| Atmospheric sciences | 12 | 14 | +02 |
| Other (general science, anthropology, history, forestry) | 19 | 05 | -14 |

Table 1. Book circulation data

lected from 2000 to 2002 are shown in the third column. The fourth column shows the % difference between columns two and three. The % difference between holdings and use for the geosciences and biosciences agrees with the group responses regarding use of books. Table 2 shows that the % of geosciences holdings in the journal collection is at least as dominant as it is in the book collection, and later journal use data (Figure 1 and Figure 2) demonstrates that, one again, the bioscience collection is underused when compared to the geoscience collection, which is not too surprising given the historical dominance of the Quaternary research at INSTAAR.

Use of other libraries. The first two groups make extensive use of the following libraries in addition to the Reading Room: Earth Sciences Library, Math/Physics Library, and Engineering Library on the main campus; National Snow and Ice Data Center in a neighbouring building; the National Center for Atmospheric Research in Boulder and the U.S. Geological Survey in Denver. The Ecosystems Group is likely to use the main CU Libraries collection which includes all of the biology collection, as well as the Earth Sciences and Engineering Libraries on campus.

Impact of electronic availability of journals. All three groups report heavy use of electronic journals. The University of Colorado subscribes to thousands of electronic journals, including the ScienceDirect package from Elsevier which includes nearly 1,000 titles. Journals in this package, and from most other vendors, typically go back until about 1997. The Elsevier subscription will no longer include paper copy. The university subscriptions are available to all users with a university computer address.

Both the Geophysics Group and the Ecosystems Group believe that it is now the business of the internet to supply journal publications electronically even though there is not complete coverage in their fields of interest. (References listed in all student theses for 2000 and 2001 showed that about half of the journals used were electronically available.)

The Reading Room now acquires 78 'core' journals. Over 100 other titles are kept in order on the shelves, but due to lack of demand and as a

| | % in collection |
|--------------|-----------------|
| Geosciences | 51% |
| Regional | 20% |
| Bio-sciences | 18% |
| Other | 10% |

Table 2. Subject breakdown of journal holdings.

cost saving measure, no accessions records are kept for these titles.

Journal circulation statistics shown below should be seen in the light of several caveats. Among these are: the changing population of the user base, the possibility of one user skewing records, and the fact that circulation statistics (we do not keep in-house use statistics) by themselves do not reflect total use numbers (Noga *et al.* 1994).

Journal circulation statistics concerning the sixteen most frequently checked out journal titles 1995-2001 are presented in the following two figures. The sixteen titles are divided into those eight available to INSTAAR in print only (Figure 1) and those eight available both in print and online (Figure 2).

Figure 1 (complete or nearly complete print file available at INSTAAR) shows that, from 1995 through 2001, use of these titles consistently accounts for roughly the same percentage (ca. 35%) of all checkouts. There is some yearly variation in the composition of this 35%. Geology and the GSA Bulletin show a marked decline in use while the Annals of Glaciology and the Journal of Glaciology show a rise in use.

Figure 2 (electronic version available, usually from 1997) shows more variation between the years for the eight titles although the total of ca. 65% remains consistent. Circulation of Nature peaks in 1998 and declines each year following. Science circulation declines after peaking in 1998 and 1999, but not as much as Nature. Boreas, Palaeogeography, Palaeoclimatology, Palaeoecology (Palaeo3), and Quaternary Research do not show a decline until 2001. The other three – The Holocene, Journal of Quaternary Science, and Quaternary Science Reviews actually show an increase in checkouts of the printed version in 2001.

It was not within the scope of this study to investigate the use and acceptance levels of electronic journals at INSTAAR, but fortunately such a study was conducted in 2000 at the Goldthwait



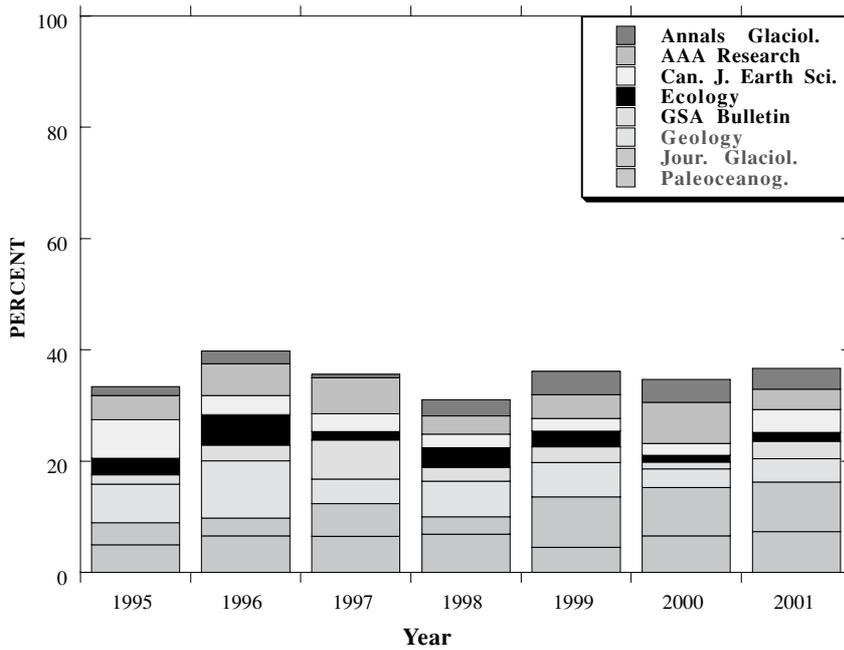


Figure 1. Journal circulation (print only available).

Polar Library at the Byrd Polar Research Center, which has a very similar user base (Nekrasova 2002). In a very detailed study she lists several advantages and disadvantages of electronic journals which affect scientists use and acceptance of this medium. She found that a majority of those surveyed preferred print over electronic format even when both were available for the same title (Nekrasova 2002: 27). She also found that the most

frequently mentioned disadvantages of using electronic journals were: network dependency, graphic quality, and reading on the screen (Nekrasova 2002: 32, Figure 6). In my own experience here at INSTAAR, graphic quality is also a concern, but the complaint I hear most often has to do with the lack of cover to cover inclusion of print journals in electronic versions.

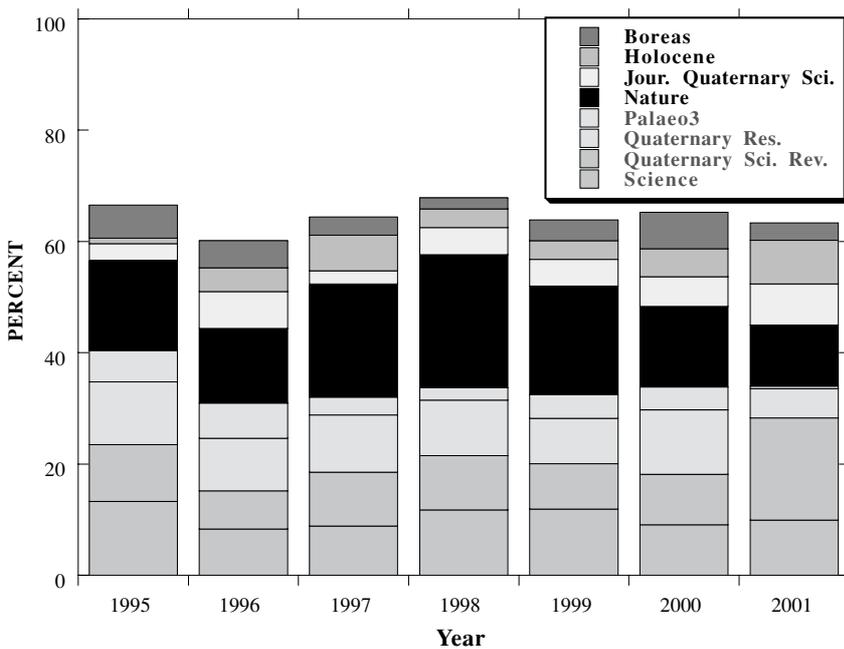


Figure 2. Journal circulation (electronically available).

Impact of the division of INSTAAR into two buildings.

The Geophysics Group is located in an adjacent building, which houses the entire group and its computing facility, along with some members of the Ecosystems Group. The Geophysics Group feels that this location affects how often they use the Reading Room. They did not feel that being able to consult the databases (books, theses, reports) now searchable only in the Reading Room, at their desks, would enhance the likelihood of their visiting the Reading Room. Since they usually need to visit a campus library anyway, they do not bother to visit the Reading Room first. The Past Global Change Group is most conveniently located to the Reading Room, and the Ecosystems Group did not reply on this issue.

Suggestions for the future of the Reading Room. The Past Global Change Group and the Geophysics Group both support the option of retaining the Reading Room as it is at present, BUT with some major changes:

1. Emphasis on journal holdings should decline commensurate with provision of electronic subscriptions through the university.
2. Concentration of budget resources on the monograph collection should provide a 'niche' location for specialized books either no longer afforded by the university or necessary for INSTAAR's mission, such as atlases and other reference materials.
3. Special collections in the Reading Room (theses, reprints, older books on the polar and alpine regions) should be maintained, enhanced, and better advertised to users (all three groups agreed on this).
4. The new professional staff should have the skills to stay current with changes in information delivery formats and should communicate these skills to the Reading Room user community through presentations at in-house seminars and by hosting an open house with refreshments each semester.
5. It was also suggested that the Reading Room should become the central information point for all if INSTAAR's information needs and should provide the most up to date computers with color printers for general use.
6. Other issues such as a) the lack of university

support for the Reading Room, b) INSTAAR's own policy of support for the Reading Room ahead of other facilities, and c) use of space for the Reading Room were raised; these are ongoing issues at INSTAAR. The present INSTAAR director does not feel that the \$40K budget per year for the Reading Room is a large sum for what is provided, and at this time space is not an issue.

The Ecosystems Group, in their written response from a very limited number in the group, presented a different view of the future of the Reading Room. They see the issues raised in number 6 above as serious constraints to INSTAAR. They feel that a teaching assistant or a graduate student should be employed "to maintain the operation" of the Reading Room at a much reduced level in terms of space, collections, and services.

Conclusions and recommendations. The results of this study in scholarly communication demonstrate that new technologies and the associated changes in library user behavior will require new approaches in the management of information resources at INSTAAR. The case study at INSTAAR both reflects and personalizes issues facing many science libraries (Topical Session ... 2002).

Based on user interviews and data kept regarding Reading Room use, it is concluded that:

1. Information finding habits are changing, with users making fewer visits to the library and acquiring more information from the internet. There is little indication that they are using fewer books, theses, reports, and reference books.
2. 'Real' library visits, although visibly declining in number, still include visits to several campus and nearby federally supported facilities.
3. Electronic journals in particular are changing user habits considerably, although these changes are in the early stages. A trend has started which shows that users are gravitating toward use of electronic reference databases, data sets, and full text delivery of journal articles. Although users perceive that either they are, or could be, using the internet almost exclusively for journal needs, data show that in reality it is still necessary to use journals existing



only in print form, and sometimes preferable to use print versions of electronic journals.

4. The division of INSTAAR offices into two buildings has been accompanied by a decline in users from the building which does not contain the Reading Room.
5. Two of the three research groups within INSTAAR, Past Global Change and Geophysics, are clearly in favour of retaining the Reading Room at its present level with several changes.

Based on the findings presented in this paper, I will ask the transition team to recommend that the numerous thoughtful suggestions for improvement of the present facility be incorporated into a new library policy upon my retirement at the end of 2002.

Two suggestions should be emphasized:

1. Concentration of the collection to provide materials not available electronically nor on campus, including placing more emphasis on INSTAAR's 'special collections' such as theses, faculty reprints, and older monographs about Arctic regions.
2. Improve interaction with users by scheduling regular seminars and open house opportunities at least once a semester. A particular effort should be made to accommodate the interests of the Ecosystems Group as their faculty increases and their students become dominant in numbers at INSTAAR.

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The library network and the active users in Lapland

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Abstract. Aurora is a library network run by twelve public libraries in Lapland. The Aurora libraries have a common register of borrowers and library cards are valid in all libraries.

In the autumn 2001 three separate projects began, two of which try to find out more flexible ways in the resource sharing of the library network by allowing the customer to act more independently.

The customers in the project named Rekku are able to make reservations themselves and to order material available on the shelf through the collection database on the Internet. The project also tries to find out flexible ways of transporting the material daily over long distances, between libraries in different parts of Lapland.

The project named Alli deals with both the technical success of the resource sharing of the separate library systems, as well as the willingness of the customers to make interlibrary loans themselves via the Internet.

The third project called Olli focuses on the cooperation and division of labour between libraries and schools in teaching information search.

Public libraries in Finland have formed 80 co-operation groups and about half of the public libraries belong to one of these networks. Aurora is one of the most extensive library nets.

The Aurora library system of the libraries in Lapland was established in 1992. From the beginning it included 5 libraries from various parts of the Lapland province and has in ten years expanded into 12 public libraries and the libraries of the Rovaniemi Polytechnic. The Aurora library net covers a great part of the 63,000 km² area of the Lapland province with about 109,000 inhabitants, of which 47% are borrowers.

A common collection register is the backbone of the Aurora libraries. It is maintained collectively so that new acquisitions are registered in the library which first gets the material. In ten years the collections of the Aurora-libraries have grown as

well as the number of borrowers and visitors. Last year there were over 2.5 million loans and over 1.8 million visitors.

In 2001 the database contained over 1.3 million records, mainly printed material. The benefit of the common system can also be seen in the joint use of the material. Inter-library lending among the Aurora libraries is active: in 2001 about 9,000 inter-library loan requests were made, of which 70% could be provided by another Aurora library. Joint use is alleviated by a common patron register: one card goes for all Aurora libraries.

The power of co-operation is also reflected on the speed of development of the library system, as well as on the services provided to the patrons. During the years 1996-1998 the Aurora data communications net was developed in a separate project. As a result, the Aurora database was transferred to the Internet.

The patron has an opportunity for remote use of the library from school, place of work and by home terminal even outside the opening hours. The patron can do the following things: search the collection database, make reservations for material which is on loan, cancel his reservations, renew his own loans and check his own personal customer data.

New services. This Aurora Intro system has been realized by taking into use another server through which all customer use is directed. In this equipment a so-called duplicating application is run to transfer data real-time between the production database and the user-database. Data is transferred in both directions. All changes happening in the lending, booking, customer or volume data as well as in acquisitions order control are transferred real-time from the production database. Data about renewing loans, making bookings and deleting bookings is continually transferred from the Aurora Intro server.

In order to use his customer data on the net, the patron needs a personal password given by his library in addition to his customer identification code. Use of this service is free of cost. In four years this service has become known and it is used abundantly: there are 41,000 entries on average per month. In 2001 500,000 entries were registered.

In 2001 this Aurora service was expanded. The

patrons have an opportunity to make a special, so called Intro Active agreement with the library, getting a quicker than before arrival notice of the reserved material by e-mail or as a text message into a mobile phone. The patron gets the notice in less than 15 minutes after the reserved material has been returned. He can also reserve material which is currently on the shelf of the local library. He can check his loans and avoid futile overdue payments by asking notices of approaching return dates into his e-mail.

The service also includes the opportunity to follow new acquisitions of the Aurora libraries by defining search profiles of subjects of interest. In defining the search profile the patron can use author, title, subject headings or classification numbers. If he wants, he can limit the search profile by language, material or library. When the acquired material matches the search profile, the patron receives a notice via e-mail.

The libraries for their part can approach the patrons by sending them notices of e.g. events arranged in the library or of exceptional opening hours.

Virtual bookshelves. The new service also offers virtual bookshelves, which the patron can make on the net and name them as he wishes. The patron can, for example, gather and maintain a list of material pertaining to his hobbies or material he needs at work by copying references found in searching the Aurora collection database into the virtual bookshelves he has established. There can be as many virtual bookshelves as the patron wishes and he can maintain the shelves by copying or deleting references according to his wishes. The references on these shelves can be complemented by the patron's own comments, and a notice can be ordered into one's email to remind when this work in question is needed.

Introduction of the new net services is connected to the experiments which started last year, the objective of which is to find out new ways of handling inter library lending as well as to improve the joint use of the collections of the Aurora libraries. The idea of the experiment is to provide the patrons with opportunities to make reservations, more independently than usual, from the collections of the libraries involved in the project. At the same time it is of interest to find out the



technical success of the joint use of the collections of the various libraries, as well as, the willingness of the patrons to use a remote lending service. Ordering loans from other libraries requires access rights into the IntroActive and involves only material which is on the shelf. The Ministry of Education has granted funds for the project.

Resource sharing. Four Aurora libraries, including the Regional Library of Lapland, have a project in resource sharing. The patron searches and locates the material he needs in the common collection database. If the needed material is found on the shelf of one of the participating libraries, the patron makes a reservation and chooses the most convenient library from where he can fetch the material. The reservation made by the client is printed out in the library where the reserved material is, and there it is fetched from the shelf and sent to the library appointed by the client. The patron gets a notice via e-mail that the reserved material has arrived.

The other project in the joint use of the collections is directed outside the Lapland province. The participants of the project are the Regional Library of Lapland, Oulu City Library, and Tampere City Library all of which have the same adp-system and IntroActive services. This project concentrates on the self-service remote lending for the patrons. The patron registers into the database of another library via IntroActive pages. During the registering process the patron becomes a temporary client for the other library. A temporary borrower code is created for him when his name and address data are transmitted to the other library. The patron searches the material from the database and makes a reservation. In the project the client gets the booked material directly to his home address.

The Regional Library of Lapland experiments remote lending also from the Repository Library situated in Central Finland. The collections of the Repository Library include books, magazines and tape recordings which research libraries and public libraries have disposed of from their collections. The patron registers himself into the collection database of the Repository Library by a separate library code given to him by the Regional Library of Lapland and gives his address in connection with making an order. Also in this experiment

the material is sent directly to the home address of the patron. It is also possible to order copies of articles into one's e-mail from the Repository Library.

The experimenting time of the joint use of libraries' collections has been quite short. It always takes time before the patrons find out about the new services. Deducing from the experiences of this spring, the interest of the patrons has mainly been directed to the collections of other Aurora libraries. It is planned that in the near future the clients could order material from whatever Aurora library by themselves.

Teaching the patrons. During the past winter these new net services have been introduced in a school and library teaching project concerning information management. In the course of this project the students acquainted themselves with information search techniques and learned to use essential information sources from the standpoint of their schoolwork as well as to evaluate them.

Teaching of information search included writing an essay on paper or as a web site. Three pairs of co-operators have taken part in the project: The Regional Library of Lapland – Lyseonpuisto High School, Kolari Municipal Library – Kolari High School, Rovaniemi Polytechnic Library – School of Catering and Institutional Management.

Thinking about the usefulness of these new net services, in the long run, they could benefit a student in his studies, for example, in independent searching, locating and getting into use the needed source material from the library where it can be obtained fastest.

Source references which are relevant to an essay can be gathered into virtual bookshelves supplied with one's own comments, for example, about the usefulness of the source. The virtual bookshelves can also be useful in planning a schedule for studies – the student can order a notice in his e-mail about a book to be read for the exam. The material in the virtual bookshelves could also be used for making a list of sources. During the project the students were encouraged to make good use of the services. Towards the end of the project, a feedback about the use of the net services was gathered from a rather small group of students. The students had had only a short time to try out the services, but they felt that these were mostly



beneficial. According to the answers the students had tested nearly all of the services. Nobody had booked material outside the Aurora libraries, and material on the shelf was reserved mainly from the library situated in the student's own locality. More than half the students replied that they had made virtual bookshelves, although in the questionnaire they were not asked about the actual purpose for using them.

The new net services have been at the disposal of our patrons by way of trial less than a year. It always takes some time to introduce new services and get the patrons aware of them. At present

there are well over a thousand users. According to available statistics, 15 % of them have virtual bookshelves and 20 % follow the new acquisitions of the library. According to the experiments under way and according to the former remote use of the Aurora-database presumably the most used of the new services would be various electronic notices into e-mail, booking material on the shelf, as well as remote lending from the Aurora libraries involved in the test. It seems that the services benefit most of all the patrons who are active users of library services. In the future it would be interesting to find out more exactly which services the patrons use and for what purposes.



Session 5: Bibliographic resources

The Bibliography of Cold Regions Science and Engineering – now and the future

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Abstract. In 1998 the Cold Regions Research and Engineering Laboratory (CRREL), Hanover, NH became one of seven laboratories composing the Engineer Research and Development Center (ERDC). With a new paradigm of research in the Corps of Engineers and many changes in mission and priorities, CRREL moved away from traditional cold regions research and was unable to sustain the previous and increasing level of funding for the *Bibliography of Cold Regions Science and Engineering*. The Library of Congress had compiled the bibliography since 1951, with great success, accuracy, and quality coverage. The increasing costs required that CRREL and the National Science Foundation prepare a request for proposal for the continuation of both the *Antarctic Bibliography and the Bibliography of Cold Regions Science and Technology*. This presentation focuses on the process, current status, and future projects of the *Bibliography of Cold Regions Science and Technology*. Included is a discussion of the aging arctic research staff at CRREL and other institutions as it affects the archiving and retrieval of information. The purpose of this paper is to raise awareness and stimulate discussion rather than present definitive solutions.

Introduction. The U.S. Army Corps of Engineers has sponsored the Bibliography on Cold Regions Science and Technology since 1951. The Snow, Ice and Permafrost Research Establishment (SIPRE) and the Arctic Construction and Frost Affects Laboratory (ACFEL) were combined in 1961 to form the Cold Regions Research and Engineering Laboratory (CRREL) in Hanover NH. From 1961 to 1998, CRREL remained an independent government research laboratory, within the Corps of Engineers, with the specialized mission of cold regions research, including the varied disciplines of

engineering and broad coverage of the physical sciences. The disciplines and subject matter remained varied and covered every topic relating to cold regions imaginable. Some of the highlights of the research include technical consulting on the environmental impact and engineering of the Trans-Alaska Pipeline, work on inland navigation of rivers, which included study of ice jams and the related flooding, to the more mundane issues of frost heaves, airfield construction, and water quality in cold environments.

CRREL's product is knowledge – knowledge of the winter battlefield, of the environment, of basic physical processes, and of engineering technology that works in the cold. For this knowledge to be put to use, either to solve an immediate problem or to serve as the basis for future research, it must be properly managed. In 1998, CRREL became realigned with the newly established Corps of Engineers Engineer Research and Development Center, which is composed of seven laboratories – four in Mississippi, one in Illinois, one in Virginia, and CRREL in New Hampshire. The realignment shifted organizational responsibility for the Bibliography to the Information Technology Laboratory (ITL) located in Mississippi. The actual sponsorship remains with CRREL; I am, however, an ITL employee. Managing CRREL's ever-growing accumulation of cold regions knowledge is the job of the information management elements within the Information Technology Laboratory residing in Hanover, NH.

If the reorganization was not confusing enough, in 1999, CRREL and the National Science Foundation (NSF) initiated a joint request for proposals for the continuation of the Bibliography on Cold Regions Science and Technology and the Antarctic Bibliography. NSF has sponsored the preparation of the Antarctic Bibliography since 1962. The Antarctic Bibliography is unique; no other bibliography covers all the world's serious operational and scientific Antarctic literature. The compilation and editing of the Antarctic Bibliography were co-located with the Bibliography on Cold Regions Science and Technology at the Library of Congress since the beginning of both bibliographies. Spon-

sorship costs had escalated during the 90's. The advent of the Web and digital processes seemed to point toward soliciting new approaches for preparing the bibliographies, with associated cost savings. I should be clear that the issue was never quality or content within the Bibliographies. In fact the total number of records entered in the Bibliography on Cold Regions Science and Technology reached, in 1998, an all time high of 6,762. Guy Guthridge, NSF, is the project manager for the Antarctic Bibliography and has participated in the Polar Colloquy in the past. Guy manages the award for these bibliographies for NSF.

Carrying on. On 7 July 2000, the National Science Foundation awarded an estimated \$860,000 to the American Geological Institute to continue the Antarctic Bibliography and the Bibliography on Cold Regions Science and Technology for 5 years. This award was made after the two submitted proposals were carefully evaluated. NSF would, for the first time, co-sponsor with CRREL the Bibliography on Cold Regions Science and Technology in addition to their continued total support of the Antarctic Bibliography. NSF is administering the 5-year award and we are nearing the end of the second year.

The American Geological Institute, a federation of 35 geoscience societies, has 32 years of experience building databases and compiling bibliographies. The Institute produces GEOREF, the comprehensive geoscience bibliography with more than 2.3 million records. The Institute can use its substantial resources and experience to provide significant cost savings to the sponsors.

The bibliographic service that was outlined in the requests for proposals included the following major requirements.

- The awardee would cite worldwide journal articles, organizational reports, books and book chapters, dissertations, patents, and conference proceedings that relate to physical science and engineering in cold environments for the Bibliography on Cold Regions Science and Technology. Web sites are also being added to the bibliographies now. For NSF the interests are geographical, being limited to the Antarctic and the Southern Ocean, but covering all disciplines pertaining to that region, including industry, tourism, biological and geological sciences, cartography, expeditions, medical science, and political geography.
- The bibliographies would be in the English language except in the field for original language or transliterated title.
- The citations included in the Antarctic Bibliography would be no less than 2000 per year and 5000 per year for the Bibliography on Cold Regions Science and Technology.
- Within 2 years of the award, the gap in Antarctic coverage for the period between the end of the Library of Congress coverage and the beginning of the new award would be eliminated.
- A computer searchable file, including all records of both bibliographies, would be made available. That number was approximately 225,000 items at the time of the award.
- The authority files of the Library of Congress would continue to be used for indexing the bibliographies.
- Each sponsor would receive a computer exportable file in USMARC-format file when the project ends.
- Abstracts would be written for every article entered in the Antarctic Bibliography except when an author abstract exists.
- A Web-based database would be developed to make both bibliographies completely searchable on the Web.
- The bibliographies would be made available via CD-ROM semiannually or more often. This responsibility could be with another vendor such as NISC. NISC's Arctic and Antarctic Regions (AAR) service contains a million bibliographic records of literature published from 1800 and earlier to the present. The world's largest collection of international polar databases includes the following databases:
 - Bibliography of Arctic and Russian Geology (1984–present). Cambridge Arctic Shelf Program, UK, including an unrivalled collection of Russian geological works (44,000 records).
 - Arctic Bibliography – digitized in 1999 by the American Geological Institute with funding from NSF. The original bibliography covers the literature through the early 1970's. The references with English abstracts are from the project's 16 published volumes and the un-



published 17th volume (114,716 records included).

- ASTIS – Arctic Institute of North America, University of Calgary (43,500 records).
- C-Core – Center for Cold Ocean Resources Engineering, Memorial University of Newfoundland, St. Johns, Newfoundland (34,300 records included).
- Citation – World Data Center A for Glaciology (Snow and Ice), University of Colorado, Boulder (38,400 records).
- SPRI – Scott Polar Research Institute, University of Cambridge (123,600 records).
- USBGN – Antarctic Place Names; U.S. Board on Geological Names' Official Place Names index: descriptions, elevations and coordinates for over 12,000 sites (12,300 records currently).
- BOREAL – Canadian Circumpolar Library, University of Alberta Library, Edmonton, Alberta, Canada (285,000 records).
- Yukon Bibliography – Canadian Circumpolar Library, University of Alberta Library, Edmonton, Alberta, Canada (4,800 records).
- INAC – Department of Indian and Northern Affairs, Northern Development, Canada (72,400 records).

Cooperation. It has always been the goal of NSF and CRREL to build international liaisons with other institutions for shared inputting of cited items to assure completeness and to reduce search and compilation cost. At one point we considered the possibility of developing a system whereby authors could do their own input directly into the database through a Web form, with quality control by the awardee. We have given up on this proposal as experience has shown that direct input leaves indexing severely inconsistent and degrades quality. The question that I propose to this group is, what can we do to penetrate the scientific community and provoke a sense of ownership, beyond the sponsoring institutions, for these bibliographic centerpieces? Even within CRREL, we constantly remind researchers to include us in the distribution of their publications. More comprehensive inclusion from all scientific communities would raise the intellectual bar on the quality of the input to these information tools. Multiinstitutional input benefits everyone. The broader and more

comprehensive is the product, the better the end result search will be.

Document delivery. The availability of full texts has changed under the current award. No longer can the CRREL library or the Antarctic stations rely on microfiche files of every cited item. We would hope to continue to work toward a solution for making full text digitally available in the future. Establishing a one-stop source of full text information is not an easy thing to do with the copyright hurdle to navigate. The technology to digitize documents and provide them electronically is available. It is the administrative nightmare to provide for simple copyright solutions that complicates full-text delivery. The digital rights are a problem if you do not own a copy of the actual document. AGI and CRREL will survey the extent of CRREL ownership of the documents that we want to digitize, and to what extent the documents are in the public domain. The goal would be to have full text available electronically to the CRREL research staff. The issue of interlibrary loan would need to be addressed at that point. Time is of the essence with determining how to solve the full text delivery, because the microfiche and microfilm from the 50's, 60's, and 70's are beginning to deteriorate. The demise of this collection will be a scientific loss.

The largest change for the CRREL bibliography was the removal from the award requirements of the need for a microfiche copy of every item. The CRREL library had furnished about 70% of the bibliographic material to the Library of Congress over the history of the project. CRREL continues to supply materials to AGI. NSF does not own the items indexed in their bibliography. The CRREL library receives materials from individual scientists, institutions, governments, universities, and private organizations engaged in cold regions science and engineering. The materials were sent to the Library of Congress and were returned after microficheing to the CRREL library for permanent archiving. The items now owned by CRREL and indexed in the Bibliography on Cold Regions Science and Technology are available through interlibrary loan from the CRREL library or through document delivery from AGI. AGI has a fee schedule in place for document delivery. This will be a new process for many of the bibliography users.

Current awareness. AGI writes short monthly highlight lists for the Antarctic Bibliography that are featured on the first page of the Web site. In addition CRREL, sends e-mail announcements to our research staff when a new file is added to the database each month. There will no longer be any printed documents. The last volume of the printed bibliography was volume 54, 2000. The current literature is currently available only in electronic form to the CRREL staff. For those of you unfamiliar with the database, go to www.coldregions.org and after entering the supplied user id, "COLD" and password "USER", visitors to the website can search the database by keyword, author, or year of publication. The search returns include title, source, and a link to more information including pages, notes, series, and publisher information. By being maintained and continually updated, a database that is an accumulation of over 40 years of materials on science and technology at work in the world's cold regions provides a security for researchers who know that they have reviewed all work conducted on a cold regions subject.

The future. Over the years of involvement in this Bibliography, I have heard many examples of how a search has helped to save hours of unnecessary research because the answer was already in the literature and found through the Bibliography. I have heard stories of how money was saved by not reinventing something or heading off a possible incorrect approach to a problem. The EXXON library called the day the *Exxon Valdez* went aground in Prince William Sound, Alaska, and wanted to know how to find material on laser igniting the oil spills efficiently and immediately. The military was supported when the Marine aircraft went down in Gander, Newfoundland, in the 80's and they had to secure the site before an incoming snowstorm. They called the CRREL library for references and contacts to provide immediate aid. The Washington DC government and the Transportation Safety Board used the bibliography to learn of our ice penetrating radar to locate the aircraft black box after an ice related crash into the Potomac in January 1982. These dramatic stories are examples of how our bibliographies are used. Value is added to the scientific community by having these bibliographic tools as comprehensive and accessible as possible.

The monthly awareness listings on the CRREL website in 1998 produced 20,736 individual hits. From October 1998 to March 1999 (6 months) Current Antarctic Literature had 47,662 views, 19,805 user sessions, and was CRREL's fourth most requested web page. During the same period, the Library of Congress web site recorded 22,744 individual logons. These figures would be augmented by the users of the NISC disc, which has 57 individual subscribers.

Outreach to the international community is another task that was highlighted in the solicitation. Institutions that establish cooperative agreements with AGI will gain access to portions of the bibliographies at no cost. For other users, the sponsors have authorized AGI to shift some portion of the project's financial support to non-federal sources by establishing user fees and cost sharing. Comprehensive coverage of the published and grey literature is a critical goal. AGI has used several types of international data exchanges in building GEOREF and will seek to establish cooperative arrangements with polar research organizations. NSF and CRREL will encourage the polar community to work with AGI to help maintain the quality and comprehensiveness of these bibliographies. There is room for discussion on whether the advent of the Web has made bibliographies such as these obsolete. I maintain that the validity of the sources, the one stop-shopping availability, and the ready access is much more efficient than dispersed resources, even using push-technology and current awareness technology.

Government websites are an impressive portion of the Internet, both in content and reliability. However, even the government websites have increasingly uncontrolled content. It is dangerous to believe that scientific and technical information is available comprehensively on the Web. At the Special Libraries Association meeting in 2002, a VP for content management at IBM estimated that 1/100th of 1% of all information is in electronic format. This is not unrealistic when you consider the Web is a very recent arrival to the on-line world of information retrieval. I would contend that the majority of full-text articles available have been published since 1993. CRREL research reports, for example, are available in full-text at http://www.crrel.usace.army.mil/library/intro_pub.html since 1994. That leaves about 70 years of information



that is not retrievable using Web search engines. These materials can be found by searching library catalogs or proprietary databases. The actual text of the document would not be there. The expediency of the Web makes it both convenient and dangerous. It is tempting to download information from the Web, rather than pursue a more relevant article in a library. We are all aware that anyone can publish on the Web and that process leaves us open to invalid and inaccurate information.

Conclusions. I maintain that databases such as Cold Regions will be around for the future. One of my personal concerns, which will be addressed in a panel later this week, is the loss of grey information with each retirement of a polar researcher. Grey information is defined as material that is not published, such as communications, data that support written reports, collegial exchanges, and internal reports of an organization. CRREL is not bringing new polar researchers into our organization either at the rate or with the youth that we did in the 60's and 70's. With each retirement, boxes of valuable material arrive in my office. We cull through and archive the information as appropriate. Each time this happens, I am amazed at the materials that I find that were never entered into the Bibliography and that are still important and valid scientific documents. However, many organizations and retired researchers do not always think to deposit their personal libraries in established libraries. I have had calls from academic polar scientists indicating they would like to donate their materials and we usually gladly accept. However, as we will discuss, there is no institutional process for archiving this material. We have also had libraries that are no longer collecting in the polar area, such as the National Geographic Society. Libraries are unsure what to do with their collections. CRREL inherited the National Geographic collection gladly. The CRREL library has also engaged in finding homes for duplicates. A collection that CRREL has supported is the Ilisagvik College library in Barrow, Alaska. CRREL has a special partnership agreement with Ilisagvik.

We continue to ask the Polar Libraries Colloquy to assist in the establishment of designated exchange arrangements, such as those between British Antarctic Survey, Scott Polar Research In-

stitute, and the AGI. We ask that documents that are published by your organizations be made available directly to AGI, NSF, or CRREL. We would again like to revisit opportunities for direct input to these bibliographies using the format and classification schemes that AGI has established. The ultimate purpose of these specialized bibliographies is to ease scientists' access to polar research literature. An additional benefit is improving access to polar research results for non-polar scientists, educators, students, and other interested groups. Continued liaison and cooperation internationally will support the long-term quality, existence, and relevancy of these bibliographies. We need your help in this endeavor.

The evolution of the Cold Regions Bibliography Project through migration and cooperation

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Abstract. In July 2000, the American Geological Institute (AGI) took charge of the Cold Regions Bibliography Project and began work on the *Antarctic Bibliography*. Three months later, with the completion of Volume 54, the *Bibliography on Cold Regions Science and Technology* was also transferred to AGI. Bearing in mind that coverage and quality of the bibliographies should remain very much the same, several objectives were outlined for the transfer and migration of the bibliographies. The Antarctic Bibliography had ceased operation in October 1998 and a major objective for AGI was to close the gap in coverage over the first two years of the project. On average, the *Antarctic Bibliography* had covered 2000 items per year and was, at the time of the awarding of the grant, almost two full years behind. A second major objective was to distribute both databases via CD-ROM and the Web in ways that would make it possible to recover some of the production costs for the bibliographies. A third objective was to promote cooperative agreements with other organizations that collect and produce polar information. Cooperative agreements with institutions such as Scott Polar Research Institute are seen as a

means of reducing production costs, increasing coverage and fostering wider distribution. A future objective includes the examination of ways to incorporate new data into the bibliographies to enable end-user access to full-text in a Web environment. This includes supplying URLs for full-text and/or exploring linking to publisher sites. With two-years of experience with the integration of the two bibliographies into the AGI production system, the basic production system for the Cold Regions Bibliography Project is in operation and beginning to meet its objectives.

Introduction. In July 2000, the American Geological Institute (AGI) began to take charge of the Cold Regions Bibliography Project. The Project, with funding from the U.S. National Science Foundation and the U.S. Army Cold Regions Research Engineering Laboratory (CRREL), had resided at the U.S. Library of Congress since the early sixties. The project consists of two components, the *Antarctic Bibliography* and the *Bibliography on Cold Regions Science and Technology*. The two bibliographies had been produced in print and distributed to libraries via CD-ROM and Web-based files. The project had resulted in a combined file of approximately 220,000 records and was widely recognized as the most comprehensive bibliographic file for polar scientific literature.

The *Antarctic Bibliography* portion of the project had ended in mid-1998 at the Library of Congress. At that time the Bibliography contained 60,000 items which covered the time period from 1961 to early 1998. Geographic coverage included the continent of Antarctica and the Southern Ocean north to the Antarctic Convergence. Sub-antarctic islands north to 40 degrees S latitude and the southern tip of South America that is used a staging area for visits to the continent are also included. Subjects covered include all physical and biological sciences, tourism, logistics, and expeditions.

The *Bibliography on Cold Regions Science and Technology* portion of the project was continued by the Library of Congress through the end of September 2000. By the time the project ended the Bibliography contained 180,000 records and covered the time period from 1951 to early 2000. This Bibliography covered all physical science and engineering for a cold environment.

In July 2000, the AGI was notified of the award-

ing of the grant to be begun in two stages. First, the AGI was to immediately begin work on the *Antarctic Bibliography* followed by assumption of management of the *Bibliography on Cold Regions Science and Technology* three months later. The grant would run for five years. The AGI brings considerable expertise in bibliographic development to the project. GeoRef, the 2.4 million record geoscience bibliographic database, has been produced by the AGI since 1967. Staff members (28) currently add approximately 80,000 records to the file each year from more than 3500 scientific journals. GeoRef has grown significantly through a collaborative approach to bibliographic production. By working with its counterparts at many geological organizations throughout the world, the AGI has managed to develop cooperative cataloging arrangements that allow GeoRef to cover of the world's geoscience literature, make it accessible to users, maintain quality of the records, and keep costs at a reasonable level. In addition, AGI has almost twenty years of experience with fee-based delivery of full-text through the Document Delivery Service.

Goals. Goals for the Cold Regions Bibliography Project include goals for each Bibliography, as well as general goals for both. For the *Antarctic Bibliography* the goals include maintaining the comprehensive coverage of the files by covering at least 2000 items per year, closing the gap in coverage caused by the hiatus from mid-1998 to mid-2000, including informative abstracts, producing and distributing e-mail listings of some new items added to the file each month, and to developing cooperative arrangements for distributed cataloging. For the *Bibliography on Cold Regions Science and Technology* the goals include adding at least 5000 items per year, producing a monthly alert, tracking publications of the CRREL staff, and addressing special topics as needed by the CRREL staff. Joint goals included distributing the bibliographies via CD-ROM and Web-based files, reducing the cost of production of the bibliographies via shared cooperative efforts and subscription-based distribution, maintaining digital files of uncopyrighted materials, providing access to materials through various document delivery mechanisms, and maintaining the high-quality of the original bibliographies.



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| ABBREV_TITLE | 1 | S |
| ABSTRACT | 2 | S |
| ANT_ACC_NO | 3 | S |
| ANTAR_TERM | 4 | M |
| ANTARCTIC_VOLUME | 5 | S |
| AUTHOR_AFFILIAT | 6 | S |
| CITY_OF_PUB | 7 | S |
| CONFERENCE | 8 | S |
| COPY_RECORD_NO | 9 | S |
| CORPORATE_AUTHOR | 10 | M |
| COUNTRY | 11 | S |
| CRELA | 12 | S |
| CRREL_ACC_NO | 13 | S |
| CRREL_AU | 14 | S |
| CRREL_REPORT_NO | 15 | S |
| CRREL_TERM | 16 | M |
| DATE_CREATED | 17 | S |
| DATE_OF_PUB | 18 | S |
| ET_AL | 19 | S |
| FIRST_AU_AM | 20 | S |
| FOREIGN_TITLE | 21 | S |
| FORM_OF_ITEM | 22 | S |
| GEOGRAPHIC_TERM | 23 | M |

Table 1 STAR data elements (partial).

Migration. In September 2000, the Project files were transferred from the Library of Congress to the AGI. The Library of Congress had used the STAR system for maintaining the database. The STAR system is a well-known software package for text information management that provides web-based retrieval options for library catalogs. Both bibliographies were stored in a single file with a system of shared fields and separate fields. This approach of storing records in a single file had advantages as some records were appropriate for both files. A sample of the field tags used in the Library of Congress version of the file is included in Table 1.

The Library also provided controlled vocabulary lists for both files. The *Antarctic Bibliography* vocabulary was general in nature and hierarchical. Geographic names followed the format of the U.S. Board on Geographic Names. The *Bibliography on Cold Regions Science and Technology* was more detailed and consisted primarily of terms for snow, ice, and other components of a cold environment. Along with the vocabulary lists, the Library provided detailed coverage descriptions for both bibliographies supplying details on past decisions regarding limits to coverage. For example, K-12 education was originally given no place in either project, but in recent years had become of

interest to the *Bibliography on Cold Regions Science and Technology*.

Merging the production system into the GeoRef production process posed several challenges. GeoRef's production system is a proprietary, internally-designed system based on UNISIST, a standard bibliographic record format intended to facilitate record exchange. The format of GeoRef records is significantly different from the STAR format. A sample of the fields used by GeoRef is included in Table 2. It was necessary to maintain the reproducibility of the structure of the original file and, at the same time, produce a file that could be converted to USMARC format. The ability to merge both types of old records with the new records into a unified, online, searchable file was also required.

The GeoRef production system was designed by GeoRef staff to handle text-based records with relative ease. A major component of the system is a duplicate checking algorithm that effectively prevents inclusion of references to the same material. This duplicate checking system also enables the system to spot duplicates should they be supplied by cataloging partners. A major question upon receipt of the files from the Library of Congress was whether a duplicate checking component for the Cold Regions Bibliography Project should be developed. In the end, the decision was made to use the GeoRef module and manually verify material dated prior to the startup date of the project. A second component of the system is the serials control system. The serials file creates basic records for all journal citations. Within the file, the date received and who supplied the data can be tracked. This is a critical file as materials are borrowed from many libraries and cooperative arrangements exist with at least seventeen distributed cataloging groups for GeoRef. A third component, the document management system, enables tracking of records from the start of the production process through the end. As records travel through each step, the system monitors who has a document and what action was last applied to the document. The system is flexible enough to handle changes to procedures, addition of fields and generation of new products without the need to refer to outside technical support. A full-time programmer handles all aspects of the production system.

Challenges in migrating the Cold Regions Bibliography Project to AGI were many. The primary challenge involved determining what had been covered already by both bibliographies and what had been covered only for the *Bibliography on Cold Regions Science and Technology*. Records from the Library of Congress detailed the last issue covered for the latter, but provided no information on the *Antarctic Bibliography*. Even with the information on the last issue covered, gaps existed. In the end it was determined that the only effective way to locate gaps was to manually search, on an item-by-item basis, many of the journals central to the cold regions literature. A complicating factor was the fact that many journals had already been reviewed for geoscience coverage, so it was necessary to backtrack through large blocks of the scientific literature.

Vocabulary differences were another adjustment. As noted before, the two bibliographies used two separate sets of controlled-vocabulary terms. After examination of the online versions of both the *Antarctic Bibliography* and the *Bibliography on Cold Regions Science and Technology*, it became apparent that both sets of vocabulary had been merged for use in searching. The option to merge both together into one searchable field for the purposes of the Web file seemed the simplest. Consistency with the terms used in the past was of the utmost importance. The *Antarctic Bibliography* contained hierarchical geographic structures. By using the GeoRef Thesaurus with its set of 13,000 geographic terms, it was possible to duplicate the same hierarchical structure. For the extensive cold-related terms used by the *Bibliography on Cold Regions Science and Technology*, new terms were introduced into the GeoRef internal vocabulary and existing vocabulary was manipulated to produce the desired set of terms.

New fields were also required for handling types of data not normally covered for GeoRef. For example, patents are not generally covered by GeoRef and contain several types of information that is not normally part of other types of publications. In addition, both bibliographies had specific fields necessary for tracking specific needs of the project, such as the CRREL author publication number (a special number assigned to journal and conference publications by CRREL staff) and the Antarctic category (the subject groupings used to

| | |
|-----|--|
| A01 | ISSN (International Standard Serial Number), e.g. 0016-7606 |
| A02 | CODEN 6-character serial code, e.g. BUGMA6 |
| A03 | Serial title The ISDS Key Title is used, when available. |
| A05 | Volume number of serial |
| A06 | Issue number of serial |
| A07 | Other identification of serial |
| A08 | Title of analytic* Original language title, transliterated title, or modified title. There may also be a translated title. |
| A09 | Title of monograph* |
| A10 | Title of collection* |
| A11 | Person-analytic* (author unless otherwise noted) |
| A12 | Person-monograph* |
| A13 | Person-collection* |
| A14 | Affiliation, primary-analytic |
| A15 | Affiliation, primary-monograph |
| A16 | Affiliation, primary-collection |
| A17 | Corporate body-analytic* |
| A18 | Corporate body-monograph* |
| A19 | Corporate body-collection* |
| A20 | Pagination-analytic, e.g. 23-35 |
| A21 | Date of publication |
| A22 | Date, other* |
| A23 | Language of text* Abbreviation and language, e.g. FR @French |
| A24 | Language of summary* |
| A25 | Publisher* Includes name, city, and country |
| A26 | ISBN* (International Standard Book Number) |
| A27 | Edition |
| A28 | Number of pieces-collection |
| A29 | Pages-monograph, e.g. 235 |
| A30 | Meeting name* |
| A31 | Meeting location Includes city and country |
| A32 | Meeting date |
| A39 | Report number* |
| A41 | Degree-granting institution |
| A42 | Degree (bachelor's, master's, or doctoral) |
| A43 | Availability of document* Organization where document may be obtained. Used for reports and theses. |

Table 2. GeoRef Data Elements (partial list).

classify references in the older print version of the *Antarctic Bibliography*).

A major adjustment for the system was the addition of an abstractor to the staff in order to produce original abstracts for the Antarctic Bibliography. GeoRef, while including author abstracts, does not contain abstracts for publications that either do not contain abstracts or prohibit their use.

Lastly, the need for a separate tracking system for CRREL loans became apparent. The CRREL library provides about 50% of the materials that are referenced in the *Bibliography on Cold Regions Science and Technology*. As the materials are returned to the library, it is necessary to include the final CRREL identification number along with the book. The GeoRef production system is designed



internally to produce the final number as the last step in the process and uses a temporary number during the interim time period. A system for permanent number assignment at the beginning of the process was developed.

Distribution. In prior years the two bibliographies had been distributed by NISC as part of the Arctic & Antarctic Regions suite of databases. It was clear that continuance of this method of distribution was in the best interests of the users of the files. In early 2001, an agreement was reached with NISC to continue providing the databases to users through both the CD-ROM and Web-based systems. Several options existed for formats in providing the data to NISC. The STAR format had been the format of choice by the Library of Congress. USMARC is the standard format that many libraries use and that could be produced easily from the GeoRef internal format, but as AGI had previously worked with NISC on adding the Arctic Bibliography to this suite of databases, a simpler format had already been developed for loading data. This format was selected for supplying the new data and the STAR format was used as necessary for additions and corrections to prior materials.

AGI obtained the domain name coldregions.org for the main web site for the project. From this Web site users can gain access to both the *Antarctic Bibliography* and the *Bibliography on Cold Regions Science and Technology*. Each month a listing of new items added to the latter is generated and sent to the CRREL library where it is loaded as a pdf file. Links to this file are found on the www.coldregions.org site. Until recently, an e-mail listing was being generated on a monthly basis for the *Antarctic Bibliography*. The e-mail highlighted some of the new materials going into the *Antarctic Bibliography*. In June 2002 the process began to undergo a change to an alert that is linked from the homepage. Visitors can select categories and scan through new additions to the file for the month by category. A calendar of relevant meetings is included on the site and anyone with a meeting to advertise is encouraged to e-mail details to the Webmaster.

Cooperation. Cooperative database development is a major goal for the *Antarctic Bibliography* portion

of this project. In order to improve comprehensive coverage and reduce total cost, a distributed cataloging effort is essential. Cooperative agreements must, however, work within a framework of certain requirements. The AGI must ensure that the format remains consistent and that the quality of the data produced does not change. Informative abstracts must be provided for the *Antarctic Bibliography* references. Original materials must be accessible to users.

In late 2000, an understanding was reached with the Scott Polar Research Institute to work on adding data to the *Antarctic Bibliography*. The SPRI generously provided some materials for the time period when the *Antarctic Bibliography* was dormant and AGI began the process of determining how to proceed with ongoing cooperation. Eventually, a list of series was established for SPRI to cover on a regular basis. This has the advantage of making it possible for all parties to know what the other is planning to do. For books and grey literature, a file was established of all items identified as potential Antarctic candidates. This file contains every item that AGI has begun to work on, but has either not finished or has not transferred to the final *Antarctic Bibliography*. SPRI was given access to the file. In this way, new items of interest encountered by SPRI can be searched in this file before consideration is given to cataloging them. SPRI forwards references on a quarterly basis to AGI where they are reviewed and the controlled vocabulary is edited.

Preliminary discussions had been initiated with the appropriate groups in Spain, Italy, and New Zealand. However, finalization of other cooperative agreement has not been completed for various reasons. Further efforts to develop cooperative agreements will continue.

Document delivery. A last major goal of the project is to maintain access to original materials in some form for the users. The GeoRef Document Delivery Service has been in existence since the early eighties. The Service is registered with the Copyright Clearance Center and has provided materials to a variety of GeoRef users throughout the last twenty years. As part of the Cold Regions Bibliography Project the Document Delivery Service was extended to handle orders derived from the users of the bibliographies. Our document re-



searcher uses libraries in the Washington DC area including several major government libraries and the Library of Congress. In addition, uncopyrighted materials are available from digitized copies. Materials owned by the project supporters are available on archival microfiche. In the case of cooperating institutions, a part of every arrangement is the option of using Inter-Library Loan or some other mechanism to gain access to materials cataloged. The bulk of the items requested to date have been either to original CRREL reports or to older Russian literature.

Full-text access via the Web is the next big step. The versions of the files available through NISC are linked in some cases to full-text. In addition, AGI is embedding URLs where appropriate for material that is freely available on the Web. Digital Object Identifiers are also added to records if they are supplied. The Digital Object Identifier is a permanent identifier for individual articles and stays the same no matter how often a URL might change. Using a handler program, a DOI can be used to locate materials even when the material moves. The DOI does require the cooperation of the publisher in keeping the handlers up-to-date.

Future options for full-text access may involve accessing the Cross-Ref system. Cross-Ref is a system devised by publishers to allow document interlinking and allows libraries and bibliographic systems to obtain DOIs that publishers won't provide freely. Within Cross-Ref, over 120 major publishers are working together to keep DOIs up-to-date and to interlink content. A bibliographic utili-

ty can link to Cross-Ref and obtain access to the public portion of a given journal. When users have subscription access to journal, either through individual or institutional subscription, the link will usually allow direct access to the full-text.

The Project microfiche files represent another major option for full-text delivery. Many materials covered by the project are archived on microfiche. Digitization of some portion of the microfiche is being considered. Intellectual property rights issues and cost are currently being explored.

Where we are today. Our accomplishments over the last twenty months include integration of the files into the GeoRef production process; completion of more than 14,000 references; design of the web site; distribution of updated files via CD-ROM and Web and initiation of the cooperative agreement with SPRI. Over the next few years, our goals are to consolidate our procedures, continue to assess coverage, expand the use of the web site and extend cooperative agreements to include more organizations.

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Session 6: Picture collections

New trends of the Italian Antarctic Research Programme Library. Projecting a database of Italian Antarctic expeditions pictures

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Abstract. The paper describes the project of a pictures database that documents all the Italian Antarctic expeditions, people involved in the organization and technological equipment, from 1985 to the present.

After a brief description of collection development and preservation, some considerations about different kinds of users will be discussed. The success of the project named “Adopting a school from Antarctica” (see 18th PLC proceedings) and the growing interest of public opinion in Italy towards the Antarctic continent, have changed and extended the role of final users interested not only in Antarctic pictures as scientific documents, but also as amazing images.

According to the growing influence in supporting the scientific dissemination of Antarctic research in Italy, the PNRA library can play a gateway role between two different requests: the scientific community and the so-called end users (students, media, Internet “navigators”).

The paper gives an overview of criteria established for selecting the huge collection (about 50,000 pictures) and for constructing a key words list with the aim of making the database available on the Internet.

“While flying with deep emotion on the path that half a century before had been covered by Amundsen and Scott to reach the Pole I was thinking of the huge efforts and difficulties that those brave men had overcome with their comrades...”

When the aircraft started to lose altitude and then to slide on ice, another type of emotion caught me, thinking that I was on one of the cusps of the Earth that I had dreamed so many times, not only in my young years.

But what is the real fascination of the South Pole? The landscape is not attractive; it is a boundless area of

ice at an elevation of 2.800 m., from which here and there emerge stacks and domes of scientific observations...” Ardito Desio (1987).

The starting point is a citation contained in a travel journal published by Ardito Desio, a well-known Italian geologist, mountain climber and memorialist who recently died at the honourable age of 102.

The long period makes evident the paradox which everyone sees when travelling and working in Antarctica: as historical document and aesthetic image, the photograph of an Antarctic site always shows this paradox.

This characteristic has been also acknowledged in Frank Hurley’s and Herbert Pointing’s works, the first photographers who captured fashionable images in Antarctica.

We are not allowed to define Shackleton and his companions less than “contemporary Argonauts” (Baroni 2001).

Therefore, we remember the detailed information of Scott Polar Research Institute picture library edited by Philippa Smith on the Endurance: the documentary images are at the same time “spectacular” portraits of panoramas and “unique” pictures of everyday life (see 18th PLC proceedings 2001).

Far from attesting the historical meaning of “heroic age”, the photograph collection of the Italian Antarctic Programme has a value in itself and a public heritage of a nation involved in Antarctica.

The collection stores photograms and motion pictures which document 17 scientific campaigns of the “modern era”. They show the paradox mentioned above and librarians have to take it into account for the availability of collection itself.

We keep in mind that Antarctica is a public heritage of humankind, not a private property (Suter 1991). At the same time, we give prominence to the risks of running conflicts of interest between scientific research needs and tourism impact.

David Drewry wrote that “tourists are drawn, magnetically, to Antarctic bases and research stations where their visits can be disruptive to science programmes” (Drewry 1994).



Far from simplifying answers, the question is: how could we turn the paradox of function and fashion into a challenge and a change?

Here the Antarctic library establishes its institutional role of conservation, documentation, dissemination, promotion of scientific research in Antarctica.

As you know (Alesi 2001), the Italian National Antarctic Research Programme has been developing a strategic plan of scientific dissemination on different aims and levels: the efforts and support to the researchers involved in the program and the activities in primary and secondary schools.

Together with these two kinds of users, the scientific community and school pupils, we have to consider media journalists and Internet "navigators" because the network is the virtual space where curiosity grows as soon as the information availability grows.

So, building a photographic collection, the library has to take into account user needs and aims and has to be aware of that paradox: the dissemination of Antarctic photography on the Internet excites public interest on wilderness and environment beyond the priority of environmental protection. They are all real users and their number can grow indefinitely. In other words, between promotion and protection, our role consists of management of the paradox.

In this way our library confirms its mission: to organize documents with a triple aim: documentation, dissemination and conservation.

To reach this aim the library has to define: documentary heritage, users typology and requests, aims of the organization who has produced the documents; by the synthesis of these three elements we have fixed standards for a uniform description of Antarctic pictures.

We have just acknowledged what kind of users look at the Antarctic pictures: on the one hand scientific community, on the other school, media, Internet navigator, the general public.

We have also talked about PNRA aims: give support to the scientific and technological activities and promote into the Italian public opinion the dissemination of the knowledge on Antarctica.

With regard to collection analysis, actually the Italian National Antarctic Research Programme has about 27,000 photograms, 25,000 digital pho-

tographs and 7,000 slides. The material description is strictly connected to the physical support of the document and, as a consequence, inventory and preservation are considered in the same way. The storage also consists of motion pictures: documentaries and radio-TV interviews amounting about 150 hours filmed.

Photograms are filed in acrylic sheets, in boxes protecting the sheets and in a cabinet with a proper temperature. Digital images are preserved in high definition, on electronic support.

The collection consists of pictures from the 1st Italian Antarctic expedition in 1985 till today. A huge heritage of images showing the whole of the activities carried out during 17 Antarctic campaigns: stations, means of transport, landing craft, technological equipment, research activities, people, views, icebergs, flora and fauna.

We have immediately realized the characteristics of the main part of these kind of documents: its value first of all as scientific and technical documents, and only for the earliest images as historical proof.

The authors are all members of the expeditions, in many cases non-professional photographers. So, we provided a preliminary selection of not perfect and out-of-focus images.

The "ad hoc" media working group, created by Antarctic Project, decided to use an appropriate software of management, cataloging and indexing images. After a market analysis, the software called Media Manager has been chosen. Media Manager is a digital asset management system that stores, tracks, searches and retrieves large volumes of multimedia files. It is a client/server database program with a nonproprietary open architecture for working with a mix of computer platforms and server software.

We need a simple and flexible database for managing texts, images, sound, video and other media files available for previewing them (through thumbnails, extended views and downloading of original files) over Internet connections. Media Manager allows us to classify each document with regards to users typology.

The software offers a more specialized solution of image availability on the web. We have created an appropriate dialog box containing the following tags: File name, date entered, size file, type file, job, author, image number, category, subcate-



gories, keywords, short description, long description, user note.

Particularly attention has been dedicated to the connections between keywords tag, short and/or long description tags and categories/sub-categories because each one contributes to classify the enormous amount of images and to identify every single detail.

As William Mills told at the last PLC Conference about the work of expedition indexing, the controlled terms we can use have always been produced by the expedition itself, despite of national differences. He acknowledges the “utility of “expeditions” as a means of unifying a variety of materials generated by, or relating to, a specific expeditionary undertaking” (Mills 2001).

We agree upon the importance of date and geographic site in indexing an image of Antarctic expedition, but the question is how to determine precisely the enormous variety of equipment, instruments, “ice” sites which a photography captures every time.

We have selected two sources: the authority file of CRREL (Cold Regions Research and Engineering Laboratory) subject terms, considered as a thesaurus, and the research projects founded by the Italian Programme.

The first source offers nowadays a more detailed list of terms particularly appropriate for logistic and equipment, two of the main subjects of our pictures; the second one is a product of the programme itself and consists of the Italian research system involved in Antarctica (researchers, aims, objectives, results, equipment and instruments, sites). In the context of research project, the picture, like the research itself, has been captured.

In other words, indexing Antarctic images means to join controlled language and natural language centred on the Programme activities involved in scientific research.

In this sense – and only in this one – we acknowledge different activities between Polar archives and an Antarctic documentation centre.

To conclude, it's easy for us to answer to the question “how do we know that the Antarctic environment is fine?”, which David Walton has recently written in Antarctic science.

Thanks to technology, the Antarctic library and photography are changing, but we'll be always

impressed by the mysterious fashion of the continent, like the sound of Homeric sirens.

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Snow and ice data sets at NSIDC: analog versus digital in issues of cataloging, archiving, and access

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Abstract. The National Snow and Ice Data Center (NSIDC)/World Data Center for Glaciology, Boulder is a national information and referral center in support of polar and cryospheric research and, as such, it archives and distributes digital and analog snow and ice data. The issues of indexing, cataloging, assignment of metadata, archiving and distribution for digital data, especially geospatial data, have taken on new practices, standards and terminology as the discipline and its user base have grown. In order to broaden the current user base



of geospatial data management best practices and to establish standards that are recognized by the library, archive and business communities, an effort must be made to distinguish the similarities and not the differences in practice. This is especially true as technology and funding make more analog geospatial collections available in digital form, (work frequently done by the library and archive communities), and as business applications are found for the use of geospatial information.

The National Snow and Ice Data Center (NSIDC)/World Data Center for Glaciology, Boulder is a national information and referral centre in support of polar and cryospheric research and, as such, it archives and distributes digital and analog snow and ice data. Currently, the majority of the digital data at NSIDC consist of remotely sensed satellite images, while the analog data are comprised primarily of heritage collections of photographs, radio echo soundings, and ice charts, or of new validation data in the forms of film negatives and prints. The WDC, Boulder also houses a bibliographic collection of books, journals, reprints and other published and grey literature, in both paper and electronic formats.

Though the theory behind the data management processes of digital and analog collections is similar, it can differ greatly in practice as we have learned in the process of adding electronic materials to the library collection and in developing metadata and searchable catalogs for data sets being converted to a digital format. The issues of indexing, cataloging, assignment of metadata, archiving and distribution for digital data, especially geospatial data, have taken on new practices, standards and terminology as the discipline and its user base have grown. Though these changes have involved those in the library and archival communities, these standards can challenge the practices and standards established long ago within the fields of library and archival science. And, though those involved have been successful in establishing best practices that are followed by small groups within their respective government and academic circles, they have yet to incorporate the larger library/archive or business user bases. Comparisons of MARC to FGDC and Dublin Core, and of cataloging to metadata preparation are inevitable parts of this data manage-

ment discussion. In order to broaden the current user base of geospatial data management best practices and to establish standards that are recognized by the library, archive and business communities, an effort must be made to distinguish the similarities and not the differences in practice. This is especially true as technology and funding make more analog geospatial collections available in digital form, (work that is frequently done by the library and archive communities), and as business applications are found for the use of geospatial information.

During the last year the Library at NSIDC has been working on the data management of several analog data sets, including SSM/I passive microwave satellite remote sensing validation data from in the form of film negatives and photographic prints, and the original paper ice charts from the National Ice Center. It has also started a digitization project converting historic glacier photographs into digital data with accompanying metadata and an online searchable database. These projects provide the background for this paper, with emphasis on the Glacier Photograph Digitization Project and standards and practices used in the process of converting it and making it available online.

In the United States, many members of the library community use the USMARC, (Machine Readable Cataloging), format standard for the cataloging of material in an electronic environment, and the Anglo-American Cataloging Rules, version 2, Revised edition (AACR2 Revised) to standardize the cataloging done. Many different thesauri are available for the use of standard terminology and controlled vocabulary to aid in the search for material by subject, including the Library of Congress Subject Headings. Classification standards used include Library of Congress, Dewey Decimal and the Universal Decimal Classification systems. All of these standards that aid the librarian in the indexing and cataloging of material have been around for quite a while, and have undergone frequent updates to reflect changes within the community over time. Though these standards were developed for the cataloging of all information within "the universe of knowledge," they became associated primarily with bibliographic material and were not widely adopted within the archival, records management, scientific



ic or business data communities. With the advent of the World Wide Web and the ease of creation of web pages by the general public, questions have arisen about standardization for the cataloging of digital objects. Various standards are developing, but metadata creation, that is, the creation of data about other data, has yet to develop widely accepted international standards. To meet more specific needs for the cataloging of digital objects, the library community, (specifically the Office of Research at OCLC), began working with others to develop the Dublin Core Metadata Initiative. Dublin Core has attempted to narrow the data elements and qualifiers used to the fewest possible, thus allowing non-librarians and those unfamiliar with indexing and cataloging theory to create metadata for digital objects. The Dublin Core Data Elements include title, creator, subject, description, publisher, contributor, date, type, format, identifier, source, language, relation, coverage and rights, making them similar to the fields recognized by AACR2 and MARC.

Within the community of users of geospatial data, it was recognized that more specific standards were needed for expressing geographical and geophysical spatial information. In the United States, the National Spatial Data Infrastructure, created by the Federal Geographic Data Committee (FGDC), is the content standard for digital geospatial metadata. The FGDC was formed in the early 1990s to coordinate the development and use of geographic data. It consists of representatives from a variety of U.S. federal departments, including the Department of Commerce, National Aeronautics and Space Administration (NASA), Library of Congress and National Archives and Records Administration. These groups hope that the standard will be adopted by all areas of government and within the public and private sectors for the use of maintaining metadata about geospatial data. It does not attempt to determine implementation criteria for the standards, though it is a highly detailed content standard that requires training and/or expertise in cataloging theory and the use of geospatial information in order to implement successfully. The National Spatial Data Infrastructure includes a Clearinghouse for the data being cataloged. It is, however, a national standard only, and though it has tried to incorporate whatever currently existing national and in-

ternational standards it could, there is no way yet of knowing if it will be adopted by the international community.

Because the National Snow and Ice Data Center is an information and referral centre that archives data, data management practices and standards are of great concern to us. However, it is frequently project managers, computer programmers and specialists in GIS who develop these best practices, and not library, archive or information science trained personnel. Sometimes this leads to frustration as project leaders "recreate the wheel" because they are not familiar with the history of cataloging and indexing theory. At NSIDC, the Librarian position supervises the library collection as well as the non-digital or analog data sets housed there. As the non-digital data sets are digitized, tension about the data management practices utilized for them is inevitable between the various groups involved.

Glacier Photograph Digitization Project – Analog to Digital

The Glacier Photograph Digitization Project at NSIDC is funded through NOAA's National Climatic Data Center's Climate Database Modernization Project (NCDC's CDMP). The World Data Center for Glaciology, Boulder at NSIDC is funded by NOAA and it is as a NOAA affiliate that these funds were obtained for the project. NOAA frequently uses these monies for data rescue projects that involve the digitization of analog data that is at risk of being lost or that have not been easily accessible to users because of their format. One of the primary advantages of digitizing data is that it can make it more accessible to users around the world, provided it has the appropriate metadata accompanying it. Before requesting funds, NSIDC worked hard to determine our project goals and objectives, and the criteria that we would use for the selection of photographs for the project. A large stipulation for receiving the funding is that the scanning work must be done by an outside contractor, thus requiring NOAA and its affiliates to complete an extensive preparation process before Statements of Work can be finalized. I will now cover some of the elements of our Statement of Work.

The study of historic glacier photographs is an excellent source of information about glacier change. The National Snow and Ice Data Center is

the repository of several thousand glacier photographs collected by the American Geographical Society, and we also have prints from the U.S. Navy and the U.S. Geological Survey. The digitization of these photographs will inform users of the existence and availability of these images and provide greater access to the images. It will also be an important first step in a project to display matching images of the same glaciers over time, thus providing an instantaneous visual representation of climate change.

The goals for this digitization project are:

- To increase knowledge of the existence of the photographs to the glaciological community and others of interest;
- To increase availability of the images to the user community;
- To provide the highest quality digital reproductions of the photographs available, thus cutting back on the need to use the original archival image and aiding in the preservation of the originals;
- To provide proper archival storage to this subset of glacier photographs.

Future plans (Phase Two) include securing additional funding that will enable us to obtain current glacier photographs matching the existing historic photographs. Approximately 2000 photographs will be used in this project. Criteria we are using for their selection include that they are held by NSIDC with no copyright restrictions to their use, that they represent glaciers that have shown retreat over the last one hundred years, probably as a result of climate changes, or that are suspected of fluctuation due to climate change, and that they are good quality images that show substantial portions of the glacier.

The contractor for the project will reproduce a set of three digital images from the original photograph. The originals are black and white photographic prints ranging in size from 2" x 3" to 10" x 10", and 8.5" x 11". The reproductions will be: 1.) an uncompressed archival image (TIFF), 2.) a compressed reference image (JPEG), and 3.) a thumbnail image in either GIF, PGN, JPEG or TIFF, depending upon the test scanning done on the first fifty photos. The thumbnail images will appear on the short displays when a search is performed,

and the JPEG image will be attached to the metadata for each photograph. The TIFF image will be stored separately as the archival image, but will be available for users upon request. In order to ensure that requirements for the project are met, a startup and testing phase will first be performed with a limited number of photographs, (50). Quality control will be performed on all work completed by the contractor, and the requirements for the project which are listed below will then be fine-tuned. When the CD-ROM with the 150 test images, (3 formats for 50 photographs), is received by NSIDC, NSIDC will take one week for quality control and then will contact the contractor with any problems, issues, or concerns. Final project scheduling will also be determined, such as the frequency of shipments to contractor, time to allow NSIDC for quality control, time for contractor to correct problems, etc. Baseline values will also be established of target images for noise, flare, and scanner geometry. The contractor will have a variety of obligations to the safety of the images while they are in their control, including assuring that the scanner being used does not cause harm or damage to the photographs. Damage could be caused by excessive heat, excessive light, and abrasions to the photographic surface. No food or drink will be kept near the photographs while they are offsite. The contractor will wear white cotton gloves whenever the photographs are handled. The photographs will arrive to the outsourcing location in polyester sleeves. These sleeves should be removed for the scanning process, but should be reapplied immediately upon completion of the scanning process. Care will be taken to avoid directly touching the photographic surface with hands or fingers. When not being scanned, the individual lots of photographs will be stored out of direct light and heat, away from water, in a secure location. Many of the images to be scanned are mounted on cardboard. In no case should the cardboard be included in the scanned image and in no case should the photographic print be removed from the cardboard. Loss or irreparable damage to the images will result in financial penalties.

The master/archival image will be the highest quality image possible, TIFF, with version 5.0 or 6.0 headers, uncompressed, unedited, at 600 dpi. An 8-bit greyscale will be used, with 1800-6600



pixels across the long dimension, depending on the size of the original print. This resolution will be the actual optical resolution of the capture and not achieved by interpolation.

The compressed reference image will have a tonal depth of 8-bit greyscale and will be saved in the JPEG format. It will be approximately 640 pixels on the image's long side. This resolution will be the actual optical resolution of the capture and not achieved by interpolation. The JPEG compression will yield average compression of 10:1 for greyscale. JFIF format/headers will be used.

The thumbnail image will have a spatial resolution of 150 pixels on the image's long side, with tonal depth at 4 bits per pixel. Because of possible licensing problems with GIF, a JPEG compressed format may also be used for this image.

NSIDC is creating an online searchable database of the images being scanned that we will mount on our web site after completion of Phase One of the project (2002). We originally considered using off-the-shelf software for this database, but because of security concerns with the server, we decided that in-house staff would create it. It is an SQL relational database using PHP with basic HTML. This database consists of fourteen fields, (plus some fields for administrative data), and eight of these are searchable. It is based largely on the Dublin Core Metadata Initiative element set, but because location description is not as developed within Dublin Core as it is in the FGDC's NSDI, additional geospatial information is being added based on the NSDI standard. The fields in the Glacier Photograph Digitization Project Database are:

| | |
|------------------|--|
| Identifier | Unique Number |
| Title | Glacier Name |
| Creator | Photographer |
| Subject | Controlled glacier vocabulary developed in-house |
| Publisher | NSIDC |
| Rights | Free to use with identification of NSIDC |
| Description | One photoprint, with size |
| Format | Photographic print; Imaged |
| Source | Original source of photograph, usually AGS |
| Spatial coverage | State and country of glacier location |

| | |
|------------------|---|
| Date | Date of Digitization |
| Date | Date of original |
| Spatial coverage | Latitude and Longitude (2 separate fields) |

Progress and Problems to Date. Though we were awarded the funding for 2002 CDMP in December 2001, the actual work for all NOAA 2002 projects did not begin until May 30, 2002. During the first week of June, NSIDC sent the test batch of fifty photographs to the contractor, and we are currently waiting for the CD-ROM of the scanned images. Since the librarian is attending this conference, she trained two staff members from the Operations Department in the Quality Control that would be needed for the test image scans while she was gone.

What we have learned so far from this project is that any digitization, whether done by a contractor or in-house, is labour intensive. Outsourcing the work, though possibly efficient and cost-effective in the long-run, increases the initial labour because of the extensive preparation work and quality control that must be done. Preparation work includes cutting off any unnecessary edges and writing unique control numbers and other metadata on the back of each print, as well as building the inventory that will be sent with each batch of photographs and that is incorporated into the database we are using for the creation of our online searchable catalog. The librarian is doing this work alone, on a part-time basis, though others are aiding in the creation of the Sybase database on the Web. NSIDC hopes to complete the project by the end of summer 2002, depending upon the time schedule set by the contractor and the amount of time required for quality control of the images. Quantifying the QC has been the most difficult aspect of the planning process. At the end of the summer, NOAA will be accepting requests for 2003 CDMP funds and NSIDC will begin developing goals and objectives for Phase Two of the project. We are happy with the work that we have completed thus far, and optimistic that additional funding will be available for the remainder of the project in which we place matching pairs of photographs online for glacier-fluctuation comparison purposes. The database will be mounted on the NSIDC web page at <http://nsidc.org>.

We have also learned that though we are at-

tempting to follow data management best practices, a standard is not of use if it is not adopted by the user community for which it is intended. Since many of the “standards” we are using are still in developmental stages, we have no way of knowing if others will accept them or if our belief in them will be justified. We in the information science community are working in a time of flux and uncertainty. It is thus both frustrating and rewarding to be involved in these projects and to work with those from other fields and disciplines. In order to increase the reward, we need to remember that discussions about the processes we are following, with input from the largest community possible, are necessary.

Historical Greenland on-line

Grete Dalum-Tilds
Polar Photos, Danish Polar Center

Abstract. The Arctic Institute collection of photographs consists of photographs from historical Greenland. The collection spans a century, from approximately the 1860's until the 1950's including photographs from expeditions, missionaries, colonialists, and ethnographers. Recently the collection has received funding from the Ministry of Culture to begin scanning the photographs and register the information into a database that will be accessible on the net. At the Polar Libraries Colloquy I will discuss why it is important to make the collection accessible on the web and what consequences it may have for the understanding of the history of the people of Greenland and research in Greenland.

The Collection. The Arctic Institute collection of historical photographs consists of 60-80,000 negatives and positives ranging from the 1860's to 1979 when Greenland received home rule. The core of the collection is from 1890 – 1940. The collection is owned by the Danish Arctic Institute and is managed by the Danish Polar Center. The Arctic Images project is a special collaboration between the two institutions, supported by the Danish Ministry of Culture.

On-line. When I first decided to do this paper, the

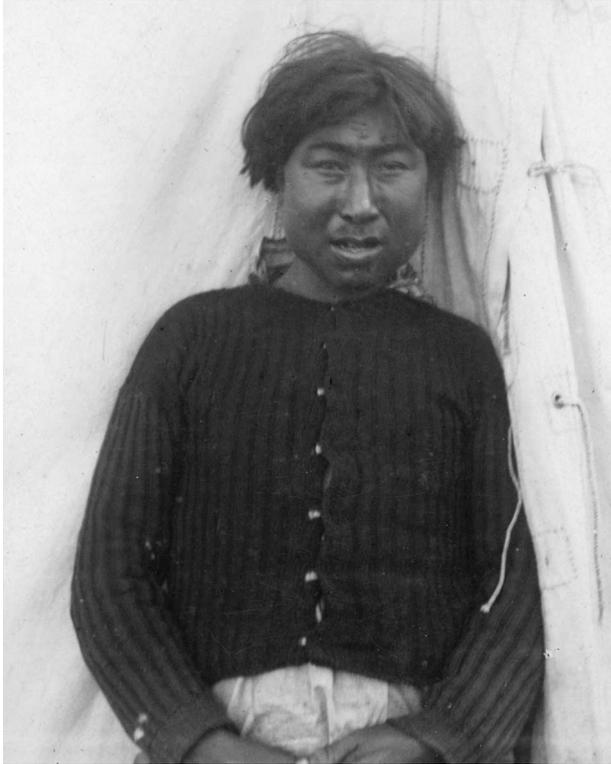


Students from the Teachers college, Godthåb. 1. Pavia 19 years, the mother of mixed race, the father European. 2. Julius 15 years, both parents mixed race. 3. Eli, 15 years, both parents mixed race. 4. Johan, 15 years, both parents mixed race. Photo H.J. Rink/© Arctic Institute.

project that I will present to you did not have a title and the funding was still pending, therefore the somewhat sweeping title of this paper. The photo database itself now has the title “Arctic Images”, and the goal is to scan 20,000 photographs from the Arctic Institute collection of historical photographs in order to secure and preserve the original material. The photographs are to be registered and catalogued into the photo database, in order to ensure public access and minimize wear on the originals. The photographs will then be accessible on the Internet.

Siulleq – a previous attempt. Siulleq is a multimedia database about Greenland published in 1990 on laser disc by the Danish Public Radio and Television. For the last 10-15 years there have been discussions that the collection of historical photographs from Greenland should be made digitally accessible. In 1985-90 DRIVE (Danmarks Radios Interactive Video Experiment) undertook the huge





Kuannia of Uummanaq, also called Pitsania. On the photograph he is approx. 30 years old. Photo Gustav Holm Expedition to East Greenland (1884-85)/© Arctic Institute.



The painter Harald Moltke at work. Photo The Danish Literary Greenland Expedition (1912-14)/© Arctic Institute.

project to gather over 40,000 stills and other information about Greenland from a wide range of Danish institutions.

In order to make the information accessible, it was published on the hip media of the day; a Macintosh computer reading photographs from a Laser Disc controlled by a Hyper Card database. Our copy of the system is still in working condition, when it is set up. It was recently packed away because of space problems, since it requires 2 monitors, as well as the disc player.

In an old conference paper I found a quote by Peter Looms, one of the people working on the project at Danish Public Radio and Television stating that: "As and when low cost digital formats emerge, we plan to transfer our applications to them." Unfortunately there has never been sufficient funding for any upgrades. For the last two years I have tried to get an agreement with the Danish Public Radio and Television station about getting copies of the original meta-data and scans relating to the Arctic Institute photo collection,

concerning approx. 10,000 stills, but without success.

Arctic Images (Arktiske billeder). Everything has up until now, been registered by hand into binders, listing negatives and descriptions by number, and in a card catalogue divided by subject. The only way to browse the collection has been in person, or to have us pre-select images, and send photocopies.

– The photocopying accelerates the wear on the collection, and it is a very tiresome way for people to select photographs second hand.

– Curators in local museums in Greenland often operate on very small budgets, so they rarely have the option to go and do research in person. And since the collection holds a large number of unique photographs from Greenland before WW2, access to searching the collection should be better.

– Conservation of original negatives and positive material is an issue, and some materials are

disintegrating due to age and usage. Often only positives exist from some collections, so everything must be treated as original.

For these reasons applications were written, and on a special 3 year grant from the Ministry of Culture, we have been given the option to scan and register into a database information about 20,000 of the oldest and most rare photographs.

Prioritizing. In prioritizing the material, it was decided to register all photographs from before 1930. The collections after 1930, are selected by a combined criteria based on the historical interest of the photographs, and the rarity of the subject. We also decided to scan and register collections bulk – including all photographs. Some not so interesting photographs are scanned in this way, but it also gives a unique opportunity to get a pre-edited view of the collection, in particular in the cases where we have the whole of a photographer’s work. Unfortunately there are large and important

newer collections that can’t be treated under the current grant, us having given the highest priority to the oldest material. We hope to raise money for the newer collections independently, as the project is an ongoing task that should not end with the special grant in 2004.

Because the archive has been a collection of photographs primarily from the colonial administration and in some incidents the only existing photographs from certain areas or events, priority was given to accessibility. We chose a database in which the information and the photographs go directly on the net, and are immediately searchable once the information is entered into the database.

In the description of each photograph there is an option to add a comment, with corrections, added stories, or identification of places or people. Also, the user can order a photograph. We have already received more orders from people who want prints of their grandparents or ancestors, in



Harald Moltke and Markus with the pelt of the expeditions first polar bear, Melville Bay 1903. Photo The Danish Literary Greenland Expedition (1912-14)/© Arctic Institute.





The first dining room in Ammassalik 1894. Photo F.C.P. Rüttel/© Arctic Institute.

the few months since the database opened in April, than our total for the last few years. There are now 2200 photographs in Arctic Images

Safety copies. All photographs are scanned in high resolution, to ensure that a print or new negative can be made from the scan if necessary. The resolution is meant to prevent loss of information, not to reproduce the original charm or aura of the photograph, since this is not possible. The database has been customized for our purposes but is based on standard elements, so that it can be reconstructed in the case of a complete breakdown. The data management company backs up the database on tape, and we get a copy on CD every quarter. The high resolution scans are stored in uncompressed tiff files on a hard disc image serv-

er, and are backed up on DVD and CD.

Since storing large amounts of data has become very cheap, it is our intent to keep the high resolution files uncompressed on a hard disc, since this will make future mass -conversion and transfers to updated storage media much easier.

Preparations. In order to plan the work it is necessary to evaluate the size and character of the work of each photographer, or collection. Some are very uniform in type of material and quality, others are in very mixed formats and materials. For this purpose we are making lists of negatives and positives, and to show you some examples I have picked 5 photographers' collections, all from before or around the turn of the century; *Hinrich J. Rink, 1860-70, The Gustav Holm Expedition To East*

Greenland 1884-85 photographed by Norwegian Hans Knutsen, *The Danish Literary Expedition To Greenland*, photographed by Ludwig Mylius Erichsen and Knud Rasmussen, the missionary C.F.S. Rüttel and the medical doctor Regnar Bentzen.

H.J. Rink (1819-1893). Trained as a geologist and geographer, Rink started to take an interest in Greenland, and in particular the local communities and how the Danish administration was affecting the people.

Between 1848-1871 he spent most of his time in Greenland as an administrator and in 1857 he brought one of two printing presses to Godthåb. He started publishing texts in Greenlandic, and in 1861 he started "Atuagagdliutit", the first newspaper in Greenlandic, with the help of Lars Møller, who's son was to be the first Greenlandic photographer, John Møller. Rasmus Berthelsen was the first editor of the "Atuagagdliutit". H.J. Rink was

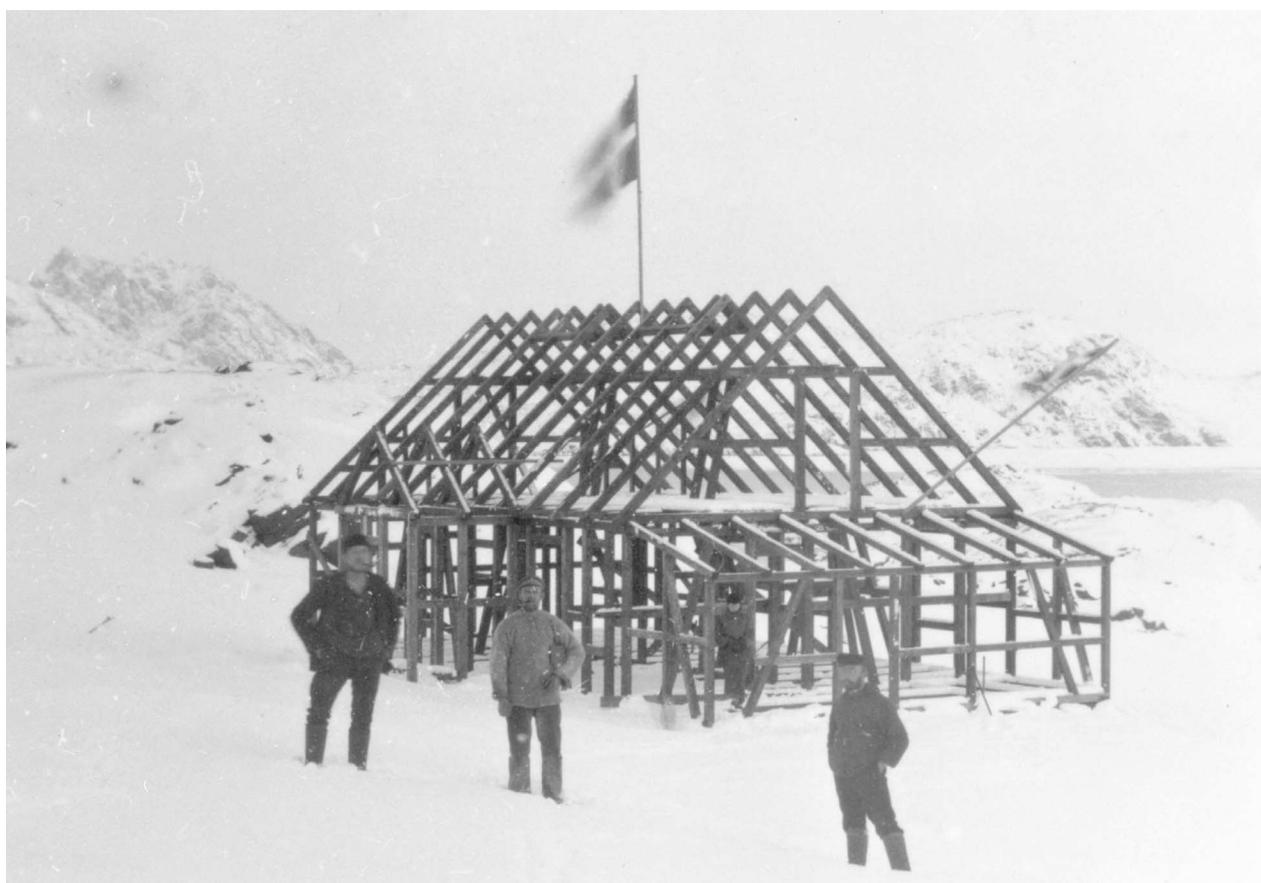
himself the first photographer living in Greenland in the 1860'ies.

The collection comprises one album and a total of 65 hand coloured positives.

Gustav Holm Expedition to East Greenland (1884-85). The expedition travelled by umiak, the traditional skin boats of Greenland, from Narsaq to Ammassalik, and photographs were taken by the Norwegian mineralogist and photographer, Hans Knutsen (1857-1936).

He photographed landscapes as well as people during the trip. In comparing the collection of prints and negatives that we have, to the photographs of the expedition members and advertisements shown in books from the time (shown as etchings based on photographs) we know that not all photographs are in our collection, but the photographs of the east Greenlanders are.

These photographs mainly document the physical traits of the East Greenlanders and their cloth-



Building a house for Rüttel, the first missionary in Ammassalik 1894. Photo F.C.P. Rüttel/© Arctic Institute.





Mrs. Bentzen with newborn boy 1909. Photo R. Bentzen/© Arctic Institute.

ing and amulet styles, in an act of mechanical registration. The collection comprises around 100 positives, and negatives.

The Danish Literary Greenland Expedition (1902-04). The expedition took place from 1902-04 with the intention to travel the whole West Coast of Greenland, and across the Melville Bay. The purpose was to collect information from the still heathen parts of Greenland, in particular the Polar Eskimos of Thule, an area not under Danish rule at the time. The expedition was lead by Ludvig Mylius-Erichsen (who later lead and perished at

the Denmark-expedition to the north East Coast of Greenland). Other Danish participants were Knud Rasmussen, who was later to spend a great deal of time among the Inughuit of Kap York (only pronounced Thule later by Peter Freuchen). Also on the expedition were the painter Harald Moltke, and on the southern part of the expedition the medical doctor Alfred Bertelsen.

They used photography as well as drawing to document the expedition. They documented themselves, their hardships, comical situations, as well as the Greenlandic characters they met on their way. Although not strictly ethnographic, this



Playing billiards, Ivigtut. Photo R. Bentzen/© Arctic Institute.

expedition represents one of the first expeditions in Greenland taking a broader interest in the traditional life and mythology of the culture of Greenland. Bringing an artist instead of a scientist taking photographs is a step in the direction of documenting the people of the land as individuals, and not just the inhabitants of the land.

The collection comprises approx. 70 nitrate negatives.

Fredrik Carl Peter Rüttel (1859 – 1915). Photographer and missionary, he took the first, and maybe only, autochromes in Greenland in 1910. Autochromes is a colour technique introduced by the Lumiere brothers in 1907 in Paris. The photographs seem only to have been for his personal use, and they show a strong tendency towards pictorialism.

The second group of photographs shown here documents his work, and working conditions, in Ammassalik where he worked as a missionary

from 1894-1904. The collection comprises 400 negatives and positives including a large number of stereograms and 60 autochromes.

Regnar Bentzen (1869 – 1950). He was a doctor in Greenland 1897-1920. Our collection consists of family and social photographs, documenting the life of the Danish families around and after the turn of the century. It also contains photographic “jokes”, and it is quite evident that photography was a hobby for him, in the sense that he was very involved but not always so serious.

He worked in Ivigtut, Jakobshavn and Julianehåb.

The collection comprises 1100 negatives.

Conclusion. By publishing the photographs in an open-ended database, we hope for the project to be kept up to date, and maintained as the main access and collections management tool. We hope that the database will offer the possibility of new





3 women posing as the 3 muses, Julianehåb 1907. Photo R. Bentzen/© Arctic Institute.

insights, and ways of looking at the photographs in the collection, and will make it available to laypersons, as well as scholars.

We hope that the database will also be of great help for closer collaboration and exchange of information with institutions in Greenland and abroad. The organization of local archives in

Greenland have embarked on a similar project and other institutions holding collections of historical photographs from Greenland are on the way. We hope to share our experience and to use it as a base for further development of the collection.

Session 7: Arctic resources and collections

Searching for polar information in Norway

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Berit Jakobsen
The University Courses on Svalbard

Abstract. The polar traditions of Norway are mirrored in most Norwegian libraries. The polar collections are, however, seldom on special display or in special catalogues in these libraries. Using the union catalogues BIBSYS or SAMBOK is the best way of searching and locating this literature. The National Library and other institutions have published their most important picture collections as

databases on the web. Some full text information is found on the sites of various research programs and institutions.

Introduction. Norway has traditions as a polar nation, and polar heroes such as Fridtjof Nansen and Roald Amundsen are known all over the polar world. Fortunately, Norwegian polar history and polar research is very highly regarded among Norwegians. To some extent this is mirrored in research institutions, museums, libraries and collections in Norway. Polar collections are not always on special display or in special catalogues – searchable databases are therefore of great help.

We would like to bring you in touch with the most significant digital polar information resources in Norway. Information about Norwegian polar territories made available in other countries

Bibliographic databases holding polar records.

BIBSYS (Norwegian-English) <http://wgate.bibsys.no/search/gen?lang=E>

SAMBOK (Norwegian-English) <http://www.nb.no/baser/sambok/english.html>

Sámi bibliographic databases

Sámi Bibliography (Norwegian-English) <http://www.nb.no/baser/samisk/english.html>

Sámi Special Library (Norwegian) <http://webhotel.mikromarc.no/ssb/sam/mikromarc/ssearch.idc?dbAlias=ssb>

Sámi University College (Norwegian – English – Sámi)

<http://wgate.bibsys.no/search/gen?base=BIBSYS&bibl=SAMALL&lang=E>

Picture archives and collections

Fridtjof Nansen <http://www.nb.no/baser/nansen/index.html> (Norwegian, c. 3,500 entries)

<http://www.nb.no/baser/nansen/english.html> (English, brief version, c. 1,300 entries)

Galleri NOR (Norwegian) <http://www.nb.no/gallerinor/>

Roald Amundsen (Norwegian) <http://www.nb.no/baser/amundsen/>

Tromsø University Museum (Norwegian) www.uit.no/fotoarkivet/

Selected links from Norwegian web sites with a polar focus

Arctic programmes & projects

ACIA – Arctic Climate Impact Assessment (Norwegian) <http://acia.npolar.no/>

ACSYS/CLIC – Arctic Climate System Study (English) <http://acsys.npolar.no/>

AMAP – Arctic Monitoring and Assessment Programme (English) <http://www.amap.no/>

Arctic Portal (English) <http://www.unep.net/arctic/>

IASC – International Arctic Science Committee (English) <http://www.iasc.no/>

NAMMCO – The North Atlantic Marine Mammal Commission (English) <http://www.nammco.no/>



Research and education

The Auroral Station in Adventdalen, Svalbard (*English*) <http://haldde.unis.no/>
EISCAT (*English*) <http://www.eiscat.uit.no/eiscat.html>
Kings Bay (*English*) <http://www.kingsbay.no/>
Longyearbyen Public School/High school (*Norwegian*) <http://www.longyear.vgs.no/>
The Norwegian Polar Institute (*Norwegian-English*) <http://www.npolar.no/>
* Environmental Monitoring of Svalbard and Jan Mayen – MOSJ (*Norwegian – will be translated to English*)
<http://miljo.npolar.no/mosj/>
* Environmental Information Svalbard – MIS (*Norwegian*) <http://miljo.npolar.no/mis/>
* Ny-Ålesund Large Scale Facility for Arctic Environmental Research (*English*) <http://www.npolar.no/nyaa-lsf/>
* Research in Svalbard (*English*) <http://www.npolar.no/ris/>
Norwegian Polar History (*Norwegian-English*) <http://www.polarhistorie.no/uk/index.htm>
The Roald Amundsen Centre for Arctic Research (*Norwegian-English*) <http://www.arctic.uit.no/English/index.html>
Svalsat (*English*) <http://www.svalsat.com/>
Tromsø Geophysical Observatory (*English*) <http://geo.phys.uit.no/>
UNIS – The University Courses on Svalbard (*English*) <http://www.unis.no/>

Museums

The Arctic Museum “Aarvak” at Brandal (*Norwegian-English-German*) <http://www.museumsnett.no/ishavsmuseet/>
Ethnographic Museum – University of Oslo (*Norwegian*)
http://www.ukm.uio.no/etnografisk/nettutstillinger/arktis_start.html
The Fram Museum (*Norwegian-English-German-French*) <http://www.fram.museum.no/>
The Polar Museum (*Norwegian*) <http://www.polarmuseum.no/>
Tromsø University Museum (*Norwegian – brief version in English*) <http://www.imv.uit.no/>
Zoological Museum – University of Oslo (*Norwegian*) <http://www.toyen.uio.no/zoomus/isbjorn/>

Information resources

The Governor of Svalbard (*Norwegian – brief version in English and Russian*) <http://www.syssemmannen.svalbard.no/>
Laws and regulations (*Norwegian – some also in English*) http://www.syssemmannen.svalbard.no/laws_en.htm
Jan Mayen 71N 8W (*Norwegian-English*) <http://home.no.net/janmayen/>
Longyearbyen Public Library (*Norwegian*) <http://bibliotek.svalbard.com/>
The Northern Lights Route (*English*) <http://www.ub.uit.no/northernlights/eng/index.htm>
State of the Environment Norway (*Norwegian-English*)
http://www.environment.no/Topics/Polar_areas/polar_areas.stm
Store Norske [The coal mining company at Svalbard] (*Norwegian, some English*) <http://www.snsk.no/>
Svalbard and the Polar Region (*Norwegian*) <http://odin.dep.no/md/norsk/internasjonalt/svalbard/index-b-n-a.html>
Svalbard – The Arctic Pearl (*Norwegian-English*) <http://www.svalbard.net/eng/>
The Svalbard Pages (*Norwegian-English*) <http://www.svalbard.com/>
Svalbardposten (*Norwegian*) <http://www.svalbardposten.no/>

Web sites with a Sámi focus

The Nordic Saami Institute (*Norwegian-Sámi-English*) <http://www.nsi.no/>
The Sámediggi (*Sámi-Norwegian-English*) <http://www.samediggi.no/>
Sámi Bibliography Project (*Norwegian*) <http://www.ub.uit.no/fag/samisk/Prosjekt.htm>
Sámi Library Service (*Sámi-Norwegian*) <http://troms.kulturnett.no/bibliotek/samisk/>
Sámi University College (*Sámi-Norwegian-Swedish-Finnish-English*) <http://www.samiskhs.no/>

will not be described here. We focus on Norwegian resources for the High Arctic, i.e. the islands north of the Norwegian mainland. We only make

an exception for some Sámi (Lappish) resources. The Antarctic is also included in this presentation. Some Norwegian sites are not always given the

time, and funding, needed to reach a high international level. Yet Norwegian sites are often in Norwegian and English, so most of the information is therefore available for a larger audience.

Bibliographic databases. The BIBSYS database is an important tool for locating sources of polar information in Norway. BIBSYS is a shared library database, and also a household system, for all the university libraries, the National Library, colleges, and most of the research institutions in our country. The database is rapidly growing – 99 libraries are currently participating – and almost all larger research institutions are now included. It consists of about 3 million records corresponding to about 8 million physical documents. The University Courses on Svalbard has participated in BIBSYS since 1994, and the Norwegian Polar Institute collection was recently included. Handling of inter library loans is an integrated part of the system. All Nordic libraries are already registered as users in BIBSYS and have a user-ID. Other libraries can obtain a user-ID by contacting the National Library. There are of course lending restrictions on a lot of the old literature. These restrictions can often be found with the holdings information for each record.

SAMBOK is the Norwegian union catalogue of monographs, hosted by the National Library. The database contains about 3.1 million records from about 400 Norwegian libraries. One important difference between BIBSYS and SAMBOK is the number of libraries included. All county libraries and the largest public libraries participate in SAMBOK, none do so in BIBSYS. There are also a number of special libraries and small research institutes that do not participate in BIBSYS. Another important difference is that BIBSYS is a household system shared by its member libraries, while SAMBOK is a union catalogue in the traditional sense of the word. For ILL services – interlibrary loans – libraries need a password obtainable from the National Library.

The Sámi literature is found in many bibliographic databases representing library holdings in all kinds of libraries in Norway. Specially made Sámi bibliographies are, however, very important for the Sámi language and culture. Firstly, there is a Sámi bibliography in Norway published on the web by the National Library of Norway. The bibli-

ography covers Sámi relevant literature, and Sámi language literature published in Norway from 1945 until 1987, and from 1993 until the present time. There are 9700 records representing several types of documents as books, and serials, and analytical entries as chapters in books, and articles in journals. Norwegian is used as subject headings in the database, Sámi subject headings will, however, be introduced later on. Already in use are the language codes for the different Sámi dialects. Secondly, there is a joint Sámi bibliography project aiming to give easy access to Sámi references in databases in Norway, Sweden, and Finland. For the time being several databases are needed to get access to this bibliographic information. BIBSYS is most likely to be the database host for a union catalogue. As part of the project a thesaurus is also under construction.

Picture databases. The National Library has collected thousands of pictures from the expeditions of our two most famous polar explorers, Fridtjof Nansen, and Roald Amundsen. These pictures have been digitized and registered in databases that are free available on the net.

The full version of the Nansen database contains about 3500 pictures, but this is only in Norwegian. There is an international version containing 1300 pictures. This version is translated into French, Spanish, and English. The pictures are from the years 1860 to the 1930's, and paintings and drawings by Fridtjof Nansen are also included. The quality of these digital pictures is only good enough to be viewed on screen, and better quality pictures can be ordered from the National Library.

The Amundsen database contains more than 3300 pictures from the life and expeditions of Roald Amundsen. The pictures are from the 1870's to 1928. Pictures from several institutions and persons have been included in this extensive collection. The Amundsen database is only in Norwegian, and has not yet been translated to any other language. According to the National Library, they have no immediate plans to get the information translated. The Amundsen and Nansen databases have similar user interfaces with the same search options. The Amundsen pictures can also be ordered from the National Library.

Galleri NOR is hosted by the National Library



and contains 69.000 pictures. Most pictures are from 1880 to 1950, and the quite well known Norwegian photographer Anders B. Wilse is the most figured photographer in this database. Most of the pictures are from mainland Norway. There are also some pictures related to polar areas and Sámi areas. The pictures are owned by the Norwegian Museum of Cultural History, and better quality prints can also be ordered. For the time being it is in Norwegian only, the English version of this base is under construction.

Tromsø University Museum has published a quite extensive picture database on the web. The database contains about 50.000 pictures from 1850 until the present time. They are mostly from the northern part of Norway, and a few hundred pictures are from Svalbard. Polar expeditions very often started in the northern part of Norway, so many interesting pictures can be found in this database. Unfortunately the information and user interface are available in Norwegian only.

There are two more picture databases that will be published on the web. The Norwegian Polar Institute's picture library contains about 40.000 pictures from the polar areas. There is currently a digitizing project running, and the database is expected to be on the net in a few months. The oldest picture in this collection is from 1872. Most of the pictures are from the expeditions of the Norwegian Polar Institute in the Arctic and the Antarctic.

The Polar Museum in Tromsø holds a collection of about 6000 pictures from arctic sealing, hunting, and expeditions. Also the Polar Museum has an ongoing digitizing project to make the pictures available on the net.

Library services at the Keith B. Mather Library for its international clientele

Julia H. Triplehorn
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Abstract. The Keith B. Mather Library is the special library supporting the research at the Geophysical Institute and the International Arctic Research Center. A visual tour of the library may be helpful to understand the library's special features: case

shelving with metal beams bracing the shelves, motion-sensor lights overhanging the shelves, electrical outlets and lamps on all the tables, mobile aisle shelving with overhanging lights, lockable book trucks. Many of the design ideas were a result of library visits at the colloquy in Finland.

The library provides special services to the research faculty, staff and students. These services include: collection development and publication exchange with a focus on increased coverage of Japanese and polar materials, 24 hour library access for staff and GI/IARC visitors, library brochures and tours in English, Japanese, and Russian, inter-library loan (same day as requested), reference verification and journal copying.

Introduction. The Keith B. Mather Library is the special library supporting the research at the Geophysical Institute and the International Arctic Research Center (IARC). This library is here to help expedite research with special services for the research staff and is funded by the Geophysical Institute and IARC. The Geophysical Institute was established by an Act of Congress in 1945 and the legislation states that there will be a Director, Secretary and Librarian – so the library has played an important role since the very beginning. The International Arctic Research Center (IARC) is a new center next door to the Geophysical Institute. The building was 60% funded by the Japanese and now houses four Japanese agencies: JAMSTEC – Japan Marine Science and Technology Center, NASDA-National Space Development Agency of Japan, ESTO – Earth Science and Technology Organization, and Frontier – a cutting edge climate change research agency as well as the Atmospheric Science Department, National Weather Service, Geodata Center and the Library.

International staff. The library provides library service to approximately 470 staff in both buildings and 100 graduate students in physics and geology. Staff means everyone from the principal investigators to the technical staff in the machine shop. Of these, approximately 25 per cent are foreign nationals. The majority are from China, Japan and Russia, with the others from Armenia, Columbia, United Kingdom, Germany, Norway, Australia, Korea, Canada, India, and Switzerland.



Visual tour. A visual tour of the library may be helpful to understand the library's special features. Many of these were developed after visiting libraries in Finland at the colloquy.

The library is open 24 hours a day for the GI and IARC staff. Access after hours is made with a magnetic card which opens the front door of the IARC building and the Mather library. Regular library hours are M-F, 8:00 a.m. – 5:00 p.m. This magnetic card will also be the charge card for the new 3M circulation system when it is installed in the near future.

The journals are the most important part of any scientific library and the Mather library is no exception, subscribing to 350 journals from around the world, primarily English language but also Japanese, Russian, and Chinese. These can be copied on a Xerox slant page copier designed so that it does not break the spine of the volumes.

Special consideration was given to the shelving in the library, because Fairbanks could have as much as a 7 earthquake on the Richter scale. The shelving is unique for a library – case shelving which is a box with a metal plate in the back. It weighs 43,000 lbs; the floor was built to support this weight. The shelving is tied with a metal beam bracing so they will move as a unit in an earthquake. The library allowed for 20 years expansion space.

The lights are all motion-sensored overhanging the shelves – they save energy but are also a safety factor at night. The light bulbs are just now being replaced after 3 years. All the tables have lamps and electrical outlets for laptop computers. The facility is now wireless which makes it convenient for our foreign visitors. On the lower level the mobile aisle shelving has overhanging lights to enable the user to easily find materials on lower shelves. The patrons also have access to this area 24 hours a day. Lockable book trucks are available for visitors to store research materials when they are not in the library. Four offices for visiting scientists are available for short term visitors to GI or IARC.

With this brief overview of the physical library facilities, the following section will be a description of the special services provided to the research faculty, staff, students and visitors. These services support the research projects of the Geophysical Institute and IARC.

24 hour library access. This is the most popular library service we offer. All faculty, staff, graduate students and visitors are given a magnetic card which admits them to the Mather library after hours. This service is particularly important for short term visitors who need to do a lot of research while they are in Fairbanks. Many visitors save their reference lists until they get to this library because all the high latitude geophysical materials are here in one place.

Since the journals and reserve books never circulate, they are always available for use. Books are checked out after hours in a special notebook. These books are added in the circulation system the following morning.

Journal photocopying and reference verification. This is the second most popular service. Faculty, staff and visitors give the library staff lists or bibliographies of materials needed for their research. The library student staff are trained to locate and photocopy the needed materials within copyright compliance. Copies are 5 cents per page and this is charged to the investigators grant. If there are a lot of items, the student's time may also be charged to the grant. This works well since researchers are frequently inefficient in locating library materials. Economically it is advantageous when you compare the salaries of the students and the research staff.

If the documents are located in another library on campus, the library provides courier service to pick up the materials. If the items cannot be located, the items are borrowed through interlibrary loan.

Collection development. As mentioned in the visual tour, the journals are the most important part of this scientific collection. All the journals are in hard copy – the library owns no microfiche or microfilm. Since, the journals are arranged alphabetically by the title on the cover, the foreign visitors are easily able to locate the journals they need. Electronic journals are available to the staff desktops if the paper subscription price includes the electronic version free.

In addition to the journals, the library has an extensive collection of books, reports and data that support the high latitude geophysical research – approximately 68,000 items. Books are usually



purchased in English to support the research efforts in both buildings. A large number of gift books and journals are received annually and these are integrated into the collection if appropriate. In addition, the library also administers and catalogs the Alaska Department of Transportation collection from this facility. It is one of the major transportation collections in the U.S.

Special considerations have been made to acquire books, journals and reports from other international agencies. Major research institutes have been contacted to exchange publications. Visitors frequently bring publications as gifts and the library is able to establish communication with their agencies. Locating Japanese and other international vendors has been a challenge. Currently we are ordering most Japanese materials through one vendor with only a few direct orders such as the Japanese newspaper.

One of the first purchases in the new building was a Japanese newspaper and news magazine. A large percentage of the Japanese staff come to the library daily to read the newspaper. Also the library has the local Fairbanks newspaper which is frequently scanned for cabins, apartments, cars. The library also keeps Consumer Reports, and other guides for purchasing cars, cameras and computers which many of our visitors need.

Cataloging. New materials are cataloged within 24 hours of their arrival in the library. Our Japanese cataloger has a degree in Library Science both from the United States and from Japan. She is currently entering library holdings into OCLC. In addition, she is entering the Japanese holdings into the Japanese academic database, National Institute of Informatics. She also writes a regular column for Advanced Visual Communication Center, a Japanese journal which supports educational institutes (including libraries) to improve their electronic communication.

Publication exchange. Journals that are duplicates to the ones in the collection are used as gifts to visiting research staff and students for their institution's libraries. The last two years we have sent materials to the following countries' libraries: Armenia, Columbia, Canada, Russia, Japan. Usually the librarian is able to find an organization or person to donate the funds for shipping; no state

funds are used. All periodicals and books were sent in M-bags; this is a canvas bag holding about 50 lbs and costs \$.79 a lb. (American) to mail. They usually arrive in foreign countries in approximately 3-6 months. To date we have never lost a shipment.

Tours. The library has approximately 10-12 international visitors per week. Individual tours are given each visitor with emphasis on his specific subject area. At present tours are given in English or Japanese. If the tour is given in Japanese, the patron seems willing to use the library immediately.

Library brochures. The library has the following brochures to help our international visitors become acquainted with our services and publications:

- Library services brochure (English and Japanese)
- Books for writing research papers (English)
- Japanese Journals and Reports held at the Mather Library
- Alaska books in the Mather Library

Interlibrary loan. The library has an extensive national and international interlibrary loan network and can provide same day service if requested. Recently the library has been designated as the only worldwide depository for the IAVCEI Proceedings (International Association of Volcanology and Chemistry of the Earth's Interior); the library is receiving many requests for these. Numerous requests come in for the Alaska Department of Transportation materials and the Northern Sea Route collection for which we have the only complete set in the U.S.

Communication. Good communication in providing these services is extremely important. All of our visitors read English, but some speak only minimal English. In these cases, we have the user write down the information needed. Some communication problems can be avoided by speaking slowly and not using slang. The Japanese library staff act as liaisons to the Japanese research staff assisting them with reference questions, book orders, locating and copying materials. The other

foreign nationals work with the rest of the library staff for the above library special services. As patrons walk out the door, the library staff always ask if they found what they needed. It is a good library practice and may identify items that need to be purchased or borrowed on interlibrary loan.

To build friendships between the staff in the IARC building, the library staff organized weekly lunches. These were not a great success. Perhaps next year we will try monthly ones. Our best social events have been book signings and the celebration of International Special Librarians Day when the foreign national staff told about the libraries in their countries.

Better communication is our ongoing challenge. The library hopes to be able in the near future to have additional students as liaisons and to create guides to library information.

In conclusion, this paper has been an overview of the services provided to our international clientele. The Mather staff look forward to working with you and your library in locating Alaska and Arctic high latitude geophysical materials on global change, aurora, arctic air pollution, glaciology, volcanoes, earthquakes, and remote sensing.

French polar research and resources

Sylvie Devers

Fonds polaire Jean Malaurie

Abstract. The Center for Arctic studies (EHESS) in Paris is still active as a teaching, research and publishing unit. A French-Russian expedition, headed by Professor Jean Malaurie will take place on an ice-breaker along the northern coasts of Siberia in the Summer of 2004 to study biological as well as human topics.

The IPEV (Paul-Emile Victor Polar Institute) has replaced the IFRTP; as a public agency the institute provides facilities for polar research carried out by laboratories and researchers linked to public structures, and it has taken part in the renovation of a French scientific base in Ny-Ålesund, Spitsbergen, in oceanographic campaigns aboard the *Marion Dufresne* in Antarctica and in the building of the new Antarctic station *Concordia*. Research has been conducted in geophysics, climatology,

glaciology, oceanography, biology and the human sciences.

The *Fonds polaire Jean Malaurie* has been given the library holdings of IPEV, representing approx. 15,000 books and 80 serials which will progressively enrich our on-line library catalog. The *Fonds polaire* has taken part in the publishing of an important book on the Art of the Great North

A few historical features. The history of French Polar exploration is punctuated by some famous names such as Jules César Dumont d'Urville, who discovered the Adelie Land in Antarctica in 1840, Captain Jean-Baptiste Charcot who led twelve scientific expeditions both in the Arctic and the Antarctic between 1903 and 1936, Paul-Emile Victor founder of the French Polar Expeditions (EPF) in 1947 who organised more than fifty expeditions in Greenland and Antarctica and Jean Malaurie who created the Center of Arctic Studies in 1957 in Paris. One can notice that French involvement in Polar exploration and research has been in the past mainly due to individual initiatives rather than to a national will.

Present French research in the Antarctic. The French Institute of polar research and technology (IFRTP), created in 1992 from the merging of the EPF and the French Austral and Antarctic territories (TAAF) was recently renamed the Paul-Emile Victor Institute (IPEV) after its founder's name; located in Brest, along the Brittany coast, it is a public agency which provides facilities for Polar research carried out by about 50 researchers belonging to different laboratories. The IPEV is mainly involved in the development of scientific programs in the Antarctic and austral regions, fewer in the Arctic, and it also carries out oceanographic programs from the supply ship *Marion Dufresne*.

This institute manages the Dumont d'Urville scientific base in the district of Terre Adélie, which can house 30 to 60 people depending on the season. Supplies are brought in by ship, the *Astrolabe*. During the austral winter, the base is totally isolated. In 2003-2004, a permanent French-Italian station called *Concordia* will open in the center of the continent about 1,000 km from Dumont d'Urville. For six years a provisional base, Dome C, has been open there from December to February.

Other scientific research takes place elsewhere



on the continent, generally involving international cooperation, such as the ice-coring programs Vostok and Epica.

Besides the Terre Adelie district, France owns three subantarctic islands which have the status of overseas territories: Crozet, Kerguelen and Amsterdam-Saint Paul. Each of those islands houses a scientific base open throughout the year, although more active in the summer period: Port-aux-Français on Kerguelen island, Alfred Faure on Crozet, and Martin de Vivriès on Amsterdam. Their supplying is provided by the *Marion Dufresne* which is also fully equipped for deep ice-coring.

French research programs in Antarctica cover a broad range of topics in earth, life as well as the human sciences. The main themes include:

- In external geophysics, cosmic radiation measurements, auroras and ionospheric movement observations are taken in cooperation with the international network Superdarn (Superdual Auroral Radar Network) which covers both North and South Polar regions with eight radars in the Arctic and six in the Antarctic.
- Internal geophysics since the four bases are both seismic (World Web Geoscope) and magnetic (World Web Intermagnet) observatories
- Studies of the upper layers of the atmosphere which as one already knows are affected by the so-called phenomenon of the ozone hole. Since 1989, measurements of ozone and nitrogen dioxide volume as well as studies about stratospheric clouds and solar UV radiation are permanently carried out at Dumont d'Urville which takes part in the world network for detection of stratospheric change (NDSC)
- Concerning lower layers of the atmosphere, as our Austral and Antarctic stations are distant from any artificial or natural pollution source, they are perfect observatories for the study of gases causing the greenhouse effect or radioactivity. The Amsterdam station is the best equipped to perform such analyses.
- In glaciology, France is involved in two ice-coring programs, Vostok and Epica, started in 1997 in Dome C. The collected data allow reconstruction of the climate history over 400,000 years, since the ice-caps contain earth's climatic archives such as gases, dust and aerosols confined in successive snow layers.

- The main Polar oceanographic programs deal with climate and global change. Those phenomena are studied through palaeoclimatology and biochemistry analyses in co-operation with the international marine global changes study program. Three ships are used for those programs: the *Marion Dufresne*, the *La Curieuse* and *l'Astrolabe* an ice-breaker which shuttles five times a year between Australia and Antarctica.
- In the ecological field, research includes the study of the native flora and fauna and of ecosystem disturbances induced by human activities. Populations and the behavior of Emperor penguins have been studied for over 50 years. Albatrosses are now equipped with miniature Argos sensors that allow the study of their migrations and explain their progressive disappearance. Few specialists are also involved in rehabilitating destroyed ecosystems : for instance, six cows were introduced on Amsterdam island in 1871 by a farmer who abandoned them. There were 2000 in 1988 causing ground degradation, and threatening some rare species like the Amsterdam albatross and the only native tree (*Phyllica nitida*). Today the environment has been restored. Physiologists study the adaptation of species to their harsh environment and the mechanisms of thermos regulation and energetic strategies adapted to climatic changes by invertebrates, fish, birds and mammals.
- Several programs deal with Antarctic marine biology and biodiversity: let us notice that studies of native micro-organisms have led to applications in biotechnology.
- Finally, a few programs of medical research are carried out at the Antarctic and austral stations, dealing with the psychological and physiological adaptation of human beings to long-term isolation. They allow the construction of models which can be applied to space flights for instance.

French Arctic research. In the Arctic, where France has no territory, the situation is quite different. Since 1980, an Arctic research network (GDR "Arctic studies" which will be renamed "Polar mutations" in the near future) operates in France: this research organisation gathers about thirty researchers from twelve different laboratories and

universities. In a multidisciplinary approach, research carried out concerns earth, life as well as human sciences in Svalbard, continental Norway, Iceland, Northeast and Northwest Greenland, Northern Canada and Northern Siberia.

In co operation with this Arctic network, the Center of Arctic studies created by Professor Jean Malaurie in Paris in 1957 developed a wide range of activities from research and teaching to organising international symposiums and film festivals, publishing monographs, proceedings and serials and collecting information.

Research in the earth sciences are focused on the priority themes established at an international level by the International Arctic science committee (IASC); these concern dynamic geomorphology, sea-ice and remote sensing, glacial hydrology, climatology, continental glaciology and palynology. Many of those studies take place in Svalbard, where France set up fifty years ago a scientific station, named after the French geographer Jean Corbel; it consists of four buildings offering facilities for up to ten people and is located close to the village of Ny Ålesund. Another base called Rabot (Charles Rabot was a French specialist in the history of Polar exploration) is located in Ny Ålesund and can also welcome ten people. In the surroundings, scientific research has been carried out for more than thirty years especially in the fields of biogeography, climatology, geomorphology, hydrology and seabird physiology often in co-operation with the Norsk Polarinstitut in Tromsø.

For 40 years, research on Arctic natives has been devoted to the study of social, cultural and demographic mechanisms of men's adaptation to their specific environment and the analysis of evolutionary processes in these small Arctic societies linked to the development of contacts with the western world. Actually Arctic communities have given up their nomadic way of life, modifying the past balance between man and his environment and leading to significant sociocultural and economic changes: activities, way of life, family structures, social and economic organisation, religious beliefs and practices have been greatly affected. Several different communities have been studied: two Inuit isolates, one in Ammassalik in East Greenland, furthering the research undertaken in 1934 by Paul-Emile Victor and Robert Gessain, and the other in Thule, in Northwestern Green-

land by Jean Malaurie. Other French specialists study Nunavut toponymy and ethnolinguistics, political changes among the Sami of Northern Sweden and Norway, Canadian Indian identity and cultural revival, and since 1991 and the opening of the Soviet far north to western scientists, reindeer breeders from North-east Siberia (Chukchee, Yuit, Yakut, Yukaghirs) focusing on demographic trends, traditional food habits, health and the survival of shamanic beliefs and rituals. Michele Therrien, a French linguist, teaches the Inuktitut language at the National Institute of Oriental Languages (INALCO) and takes part in an international PhD school project for the study of Arctic societies (IPSSAS) which started in Nuuk some weeks ago.

Since 1992, the Center of Arctic studies works in close co-operation with the Polar Academy in Saint Petersburg. This academy offers a training program designed for northern Siberian natives who intend to head the local and regional authorities.

Professor Jean Malaurie is planning a French-Russian expedition for the summer of 2004 along the north east coasts of Siberia, aboard a Russian icebreaker when both French and Russian researchers will tackle various geophysical, biological, medical and human questions.

French resources. The library of the Center of Arctic studies was set up in 1957 and in 1992 it moved to become part of the library of the National Museum of natural history where it was renamed *Fonds polaire Jean Malaurie*. Its holdings now include 25,000 monographs, 20,000 reprints, 600 serial titles as well as microforms and maps. They deal with the Arctic and the Antarctic regions and cover all topics from physical and natural sciences to human sciences. In 2000, the Polar Institute (IPEV) donated its entire library to the *Fonds polaire* thus enhancing its holdings with 80 serial titles and 15,000 monographs and scientific reports.

With the sponsorship of the French Gas Board, we were able to buy some old and rare books on Polar exploration. The catalogue is computerised and accessible on the web on the site of the Museum library *i.e.*: <http://www.mnhn.fr/muscat>

It takes part in a large database which gathers all French universities libraries catalogues and



presently contains some 4,5 million bibliographic references. This national catalog called SU (University server) can be consulted at the following address: <http://www.sudoc.abes.fr>

The *Fonds polaire* offers a service of interlibrary loans in France and abroad. Approximately 500 monographs are added every year. It is now the only French polar library.

After eight years of preparation, we were proud of the publishing in October 2001 of a book devoted to the Art of the Great North which studies and analyses artistic expressions, both traditional and contemporary, of all circumpolar peoples: Athapaskan and Algonquin Indians, Inuit of Canada and Greenland, Yupit, Inupiat and Aleut of Alaska, Same of northern Scandinavia, North Siberian peoples and Ainus of northern Japan. The influence of this art on contemporary western artists such as the surrealists and Matisse is also demonstrated.

Finally, a website created by two young French Polar enthusiasts is worth mentioning: <http://www.transpolair.com>. It records recent and current Polar events such as news of Jean-Louis Etienne who is presently drifting aboard a small capsule, the *Polar Observer*, from the North Pole through the Arctic ocean.

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Libraries at high latitudes

Berit Jakobsen *The University Courses on Svalbard*

Abstract. The world's northernmost libraries are to be found in Longyearbyen (78°10'N) on Svalbard. There are 3 rather small libraries in Longyearbyen: the school library in the southern part, the public library in the central part, and the library at the University Courses on Svalbard in the northern part of the settlement. The small research commu-

nity, Ny-Ålesund (78°50'N), houses a small book collection, which is most likely the northernmost book collection in the world.

Introduction. Libraries and collections holding polar literature etc. have often been presented at Polar Library Colloquies. Also, reference books such as "Keyguide to information sources on the Polar and Cold regions" by Mills & Speak (1998), and resources on the web such as Polar and Cold Regions Libraries and Archives (2002) give a good overview of these resources. There are, however, no records of the northernmost libraries.

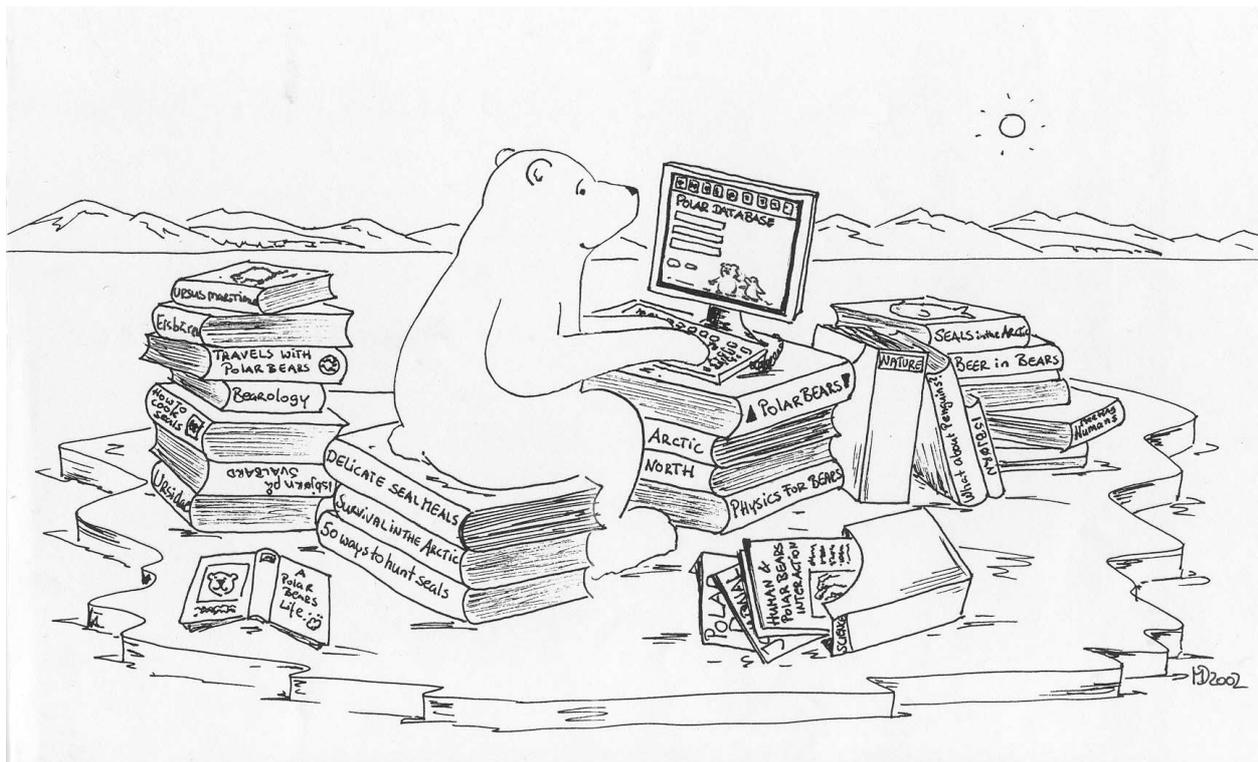
Methods. Locating the northernmost libraries cannot be done without any limitations – the survey is therefore limited to more permanent settlements that are inhabited by quite a steady working force and their families. Likewise, military or semi-military camps are not covered in the survey. This makes it far easier to locate the infrastructure and the libraries. Besides, bases on floating ice and tiny weather stations would probably not house any libraries at all. Nor would a trapper's cabin house a library.

Maps, some books, and a lot of web sites have been consulted. Scientists and others working in the High Arctic have been of great help. Living in Longyearbyen (78°10'N) has also been an advantage, in knowing quite a few high latitude libraries beforehand.

Results of the circumpolar survey of libraries. The survey began by heading to Greenland. Qaanaaq, the local Inuit village near Thule Air Base, has a public library with around 8,000 to 10,000 books. There is, however, a small settlement further north – Siorapaluk (77°45' N). It is often referred to as the world's northernmost naturally inhabited settlement, and here they have a school combined with a church and a small public library (Qaanaaq Department of Culture and Education homepage). Station Nord in Northeast Greenland is a military outpost.

Further west, Ellesmere Island in Arctic Canada is an interesting area, and Ausuittuq, or Grise Fjord, is the northernmost civil settlement at around 76°N in Canada. Alert (82°30'N) on the northern part of Ellesmere Island should, however, be mentioned, as it is sometimes referred to as





the northernmost permanently inhabited settlement in the world. But this is a settlement based on military activity, to which is recently added research. Eureka, a little further south, is also semi-military, so these two settlements will not be included in this survey.

Heading even further west, we come to Alaska. This is not so interesting as its land masses end around 71°N. Arctic Russia is, however, far more interesting, as many islands are located in the High Arctic. Some islands are even located around 80°N. However, these islands of the north do not have any civil settlements.

The survey ends at Svalbard. Here there are settlements and libraries very far north.

A closer look at the Svalbard libraries and collections.

The Svalbard Treaty makes it possible for many nations to run activities on Svalbard (Ulfstein 1995). The settlements, the libraries and the collections will therefore mirror the different nations involved. The settlements are found from 77°N (Hornsund), to 78°50'N (Ny-Ålesund), and there are no roads connecting the settlements to each other.

Starting on the southern part of Svalbard, a Polish research station located in Isbjørnhavna in

Hornsund (77°N) has a rather small collection of books etc.

Sveagruva (77°50'N) in van Mijenfjorden is a mining community with no library. Miners and staff working in Svea spend most of their spare time in Longyearbyen, were they can visit the public library.

The Russian settlement in Barentsburg (78°N) on the east side of Grønfjorden is also a mining community – or a company town – with around 900 inhabitants. In Barentsburg, a culture center built in 1988 holds a public library in addition to swimming pool, an indoor sports arena, and a cinema.

Longyearbyen is situated in Adventfjorden at 78°10'N, and has a population of around 1700 inhabitants. The community is based on mining as well as education, research, and tourism. Longyearbyen is easily accessible by regularly scheduled commercial airline flights, and serves as the gateway to the other places on Svalbard. The libraries in Longyearbyen are found at the school, and at the University Courses on Svalbard (UNIS). There is also a public library.

The previous Russian mining settlement Pyramiden (78°40'N), on the western side of Billefjor-



den, once had a library. The settlement was closed in 1998, and most of the books were moved to Barentsburg.

In Ny-Ålesund at 78°50'N, there are research stations belonging to several nations. The logistic company Kings Bay runs the infrastructure for scientists who inhabit the stations. For the time being, Ny-Ålesund has a very limited family settlement – in 2001 the first baby since 1963 was brought there with her parents (Kings Bay homepage). There are many research stations, and probably most of them have a reading room. At Sverdrupstasjonen for instance, the research station run by the Norwegian Polar Institute, they have the Encyclopedia Britannica, some handbooks and some theses and dissertations. The collection only fills about 7-8 shelves, and it is not yet catalogued. There is also a small collection of polar literature in the lounge of the cantina building belonging to Kings Bay.

An even closer look at the Longyearbyen libraries and collections. In the southernmost part of Longyearbyen, the Gallery has on display a collection of polar literature collected by Henrik Varming, who was formerly the head of office in Store Norske, the coal mining company. The original Varming Collection had around 400 books, and 60 maps. The old maps in particular, are very rare (Sveum 1992). In 2001, the collection received about 535 “new” books, and 169 duplicates, from the private collection owned by Varming. Moreover, the collection received 330 publications from the Norwegian Polar Institute. The collection is now called Svalbardsamlingen (The Svalbard Collection), and Svalbard is the major focus of the collection. Polar literature in general is also presented. The most significant part of the collection is catalogued, and it has been published on the web in early June 2002 via the web site of Longyearbyen public library.

There is a school and a small school library in Longyearbyen. In 2002, around 220 pupils (including 32 high school students) went to school in Longyearbyen. The school library has one employee, a teacher, and the library is open 3 hours a week. Statistics for 2001 show that a total of 509 books were borrowed from a collection of around 4400 books. The electronic catalogue is not yet published on the web.

Further north in Longyearbyen there is a public

library. A full-time librarian and a part-time library assistant keep the library running. During winter-time they keep the library doors open for 27 hours weekly. In 2001 the public library had a collection of 15,221 books, and had 26 journals and 5 newspapers in subscription. It also had around 192 audio recordings of books, and 287 videos. 2 computers with web access were in daily use by the patrons. 10,508 publications were borrowed in 2001, and they received 323 inter library loans. Recently, the public library got hold of about 15 hours of old radio recordings of interviews with trappers etc. on Svalbard. The library also has their electronic catalogue published on the web (Ødegaard 2002). The library activities (baby groups, kids groups, reading groups etc.) play an important role for the inhabitants of Longyearbyen – especially the newcomers. The library’s polar collection is also very popular.

The very first public library in Longyearbyen was the labourer’s library, “Arbeiderbibliotheket i Longyear City”. It was established in October 1919 (3 years after the mining company was established). There was also a collection of books in the church. During the 2nd World War the church was completely destroyed and “Arbeiderbibliotheket” had its collections spread around in town. Just after the war, “Arbeiderbibliotheket” bought around 1200 new books. The church library was not immediately rebuilt. In 1947, it was suggested to merge the two libraries, and in 1949 it was decided to establish a board for the public book collection, “folkeboksamlinga”, with representatives from the governor, the church, the women’s organisation and the labour organisation. (Enne 1993). From January 1997, the public library was taken over by Svalbard Samfunnsdrift.

The University Courses on Svalbard (UNIS) is situated in the northernmost part of Longyearbyen. About 300 students and faculty at UNIS, and some scientist at the Norwegian Polar Institute’s branch office in Longyearbyen, use the library for their studies and research. Students and staff change very often, and many nationalities are represented (UNIS 2002). One librarian is running the library. The library is usually open for every-one 10 a.m. to 4 p.m. Monday to Friday, faculty and graduate students at UNIS have access 24 hours a day. 142 journals and 10 newspapers were in subscription in 2002, and the library had

around 4000 books. The library's catalogue is hosted by the statewide cataloguing database BIBSYS, and it is published on the web. In addition, 8 subscribed databases were available for the library patrons. The databases provide a good starting point for students and staff requesting articles and books from UNIS and from other libraries. Numbers of Inter library loans indicate a high library usage as 1,216 publications and article copies were received from other libraries in 2001, whereas the UNIS library only sent out 212 publications or article copies to other libraries. Patrons borrowed 2,278 publications, and 238 patrons made active use of the library in 2001 (monitored by use of BIBSYS) – yet many more visited the library.

UNIS started in 1993/1994 and was initially based in the same building as the Norwegian Polar Institute's branch office in Longyearbyen. In August 1995, UNIS moved to a new building, and the first librarian was employed. About 300 books and some journals belonging to the Norwegian Polar Institute's branch office in Longyearbyen became the start of the library's collection. The library is rather small (93 m²). There are plans for an extension of the UNIS building, and a larger library is planned.

Concluding remarks. The High Latitude Arctic does not hold many civil settlements. Svalbard is in a special situation. The northernmost Russian library is located in Barentsburg (78°N) on Svalbard. The three libraries in Longyearbyen (78°10'N) are the northernmost on Svalbard. The UNIS library is the northernmost library of the settlement, and therefore the northernmost of the world. Further south in the settlement, the northernmost public library, and the northernmost school library are found.

The scientific stations or military bases further north have not been part of this study. In Ny-Ålesund (78°50'N), the scientific station has, however, become a little more of a community as a family with a child is living there for a period of time. For the time being it is therefore holding the northernmost book collection in the world. The search for other families at other research stations is, however, not carried out with great accuracy. There are,

however, very strict regulations on stations in the north, so families are not likely allowed to stay. When the scientific station Ny-Ålesund is back to normal, the northernmost book collection is probably Svalbardsamlingen at the Gallery in Longyearbyen.

Acknowledgements. I would like to thank Stephen Dutton and Hanne Hvidtfeldt Christiansen for improving my English. I am also very grateful to Ole Humlum for kindly supplying the maps presented during the talk. Last but not least thanks are addressed to Malin Daase for the drawing of the "Polar Bear Librarian" presented during the talk and in this paper.

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Useful links to two German bibliographic metadatabases

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Karlsruher Virtueller Katalog (KVK) (The Karlsruhe Virtual Catalog) <http://www.ubka.uni-karlsruhe.de/hylib/en/kvk.html> is a meta search interface which allows you to access library catalogs on the Internet. At the present time KVK provides access to the German union catalogs, the German National Library Catalog and furthermore to important library and union catalogs worldwide. It starts a simultaneous search and gives you a standardized hit list. As the KVK does not have its own database it depends on the avail-

ability of the target systems and cannot give more functionality than they do. If you click your way through the hit list you are linked to the target system and leave the KVK.

The system was developed at the University Library in cooperation with the local Faculty of Informatics.

Die Elektronische Zeitschriftenbibliothek (EZB) (Electronic Journals Library) <http://www.bibliothek.uni-regensburg.de/ezeit/> is a service to facilitate the use of scholarly journals on the internet. It offers a fast, structured and unified interface to access full text articles online. It comprises 11,679 titles from all areas of research, 1,171 of which are available online only. There are 2820 journals which are accessible free of charge to anyone, indicated by a green icon.



Session 8: Planning the future

A Greenlandic Inuk librarian's point of view on the future of Inuit libraries, language and literature

Elisa Jeremiassen

The National Public Library of Greenland

Abstract. As national and legal deposit library Groenlandica collects, secures, and registers all material edited and issued in Greenland and is responsible for its preservation for posterity. Here you can look for answers to special questions about Greenland, Inuit and the Arctic. It is possible to borrow books from our research collection according to the lending rules of Nunatta Atuagaateqarfia.

In this paper I will give my impression of the status of our library and the Inuit language and literature today. The paper pays special attention to our technological and digital status and points out future fields of work and hopes for even more cooperation with other polar libraries.

Introduction. Greenland is governed by Denmark. A homerule agreement was made in 1979 and although more and more areas of responsibility are handed over from Denmark to Greenland, Greenland is still not autonomous. Greenland has about 55,000 inhabitants of whom about 13,500 live in the capital Nuuk. Nuuk is a typical administrative town, home of the Greenland Homerule Administration and The Central and National Library of Greenland among other administrative and educational institutions. The municipality of Nuuk is huge, about 87,000 km² or twice the size of Denmark. The main language is Greenlandic with Danish as second and English as third languages.

The libraries. Libraries in Greenland go back to the beginning of the nineteenth century. In 1925 an organised library system for all of Greenland was initiated. Most libraries in Greenland are placed in the local public schools and most of the people working as librarians are connected to the school system. Often they are educated as teachers or cat-

echists. Our libraries could not work to the benefit of the Greenlandic people without the invaluable enthusiasm and knowledge of these local librarians.

Today 6 Greenlanders educated as librarians are working in all of Greenland. We were all educated in Denmark and I was made Head of Nunatta Atuagaateqarfia in 1994. Our staff of about 30 persons is two thirds Greenlandic and one third Danish today.

Nunatta Atuagaateqarfia is the central library of Greenland, the public library of Nuup Kommunea, and the national scientific library of Greenland.

Technological development. Since 1993 our library lending system and catalogue has been a database serviced by a Danish company, CSC, formerly Danish Data Electronics. Our mutual library network is still under heavy construction. So far the database, which originally was meant to serve only Nunatta Atuagaateqarfia, now contains and services also the libraries of the Health Care Education Centre, the Commercial School and the communal library of the Teachers Seminary, the Grammar School and the Social Workers Education Centre. The future university campus is planning to use our data-system as well. Direct connection is only possible for libraries situated in Nuuk. The public libraries outside Nuuk are not connected to our database yet. More institutional libraries are planning to join us soon. This includes the Greenland Institute of Natural Resources, the Knowledge Centre on Children and Young People, the Greenland Bureau of Statistics, the Greenlandic Bureau of Minerals and Petroleum and of course the University Library.

The Internet reached Greenland in 1996. The National library of Greenland joined the test group and had access to the Internet as early as fall 1995. The library database has been available on the Internet since 1998 via our homepage at www.katak.gl

Greenlandic language and literature. The Greenlandic libraries do their cataloguing in DanMARC



and use the Danish classification system for public libraries with a few local adaptations. Most books in our main library are in Danish.

About 5000 titles total exist in Greenlandic. This is a lot compared to other Inuit languages, but still not enough, when you consider, that they include outdated information and administrative material of only historical value and that many highly relevant subjects have yet to be treated in Greenlandic.

The Greenlandic language is very much alive, however, and the new orthography from the 1970'ies is used. Fortunately new novels for adults and children appear every year.

But the difference between new and old orthography creates problems for the library users. Elderly people generally prefer the old orthography and young people the new. Fortunately we also meet elderly people who read the new orthography as well. If the subject is interesting young people are able to read the old orthography.

The Greenlandic Homerule Office of Language officially recommends production of reading matter for children in Greenlandic to support the continued existence and development of the Greenlandic language.

The Greenland Home Rule supports Greenlandic books through support to our national publishing company Atuakkiorfik. This is necessary because small editions in a language spoken by only 55,000 persons are not commercially sustainable. To encourage the writing and translating of books into Greenlandic, the Homerule introduced a system of public lending right fee in 1993.

The book develops and strengthens the language of every single person as well as our ability to listen to new and other voices. This is what makes the publishing of translated books in Greenlandic, and Greenlandic books in foreign languages important. Thus we can develop our understanding of the outside world and give the rest of the world access to our own culture as we see it.

Primary sources in the libraries. Greenlanders and other Inuit have a strong oral tradition of storytelling. This tradition still lives despite the fact that more and more books are being published in Greenlandic every year.

Greenland has a strong newspaper tradition

starting with *Atuagagdliutit* in 1861. Here also appeared the first newspaper pictures printed in colour in the world.

Newspapers and periodicals have always flourished in Greenland and are a good source to Greenlandic life, debate, and thoughts today and yesterday.

When the Greenlandic Homerule took responsibility for cultural affairs and primary education in 1979, Nunatta Atuagaateqarfia consequently became the national and scientific library of Greenland.

Culture and education were among the first areas to be transferred to the Greenlandic Homerule. A natural consequence was that the responsibility for the making of a Greenlandic index of our periodicals and newspapers was also transferred from The Royal Danish Library to Nunatta Atuagaateqarfia in 1985. Unfortunately it proved impossible to transfer or find funding for the work on the index. The lack of funds has left Greenland with an incomplete index covering only the years 1950 to 1974 and a single volume from 1985. Most newspapers, especially the two largest, are bilingual in Greenlandic and Danish.

Thanks to the Internet we may now create our index gradually as a database rather than as a published book, and offer access to users via our homepage. In 2000 we started a pilot project employing a Greenlandic librarian part time. This was done partly to document the costs of an index to ease fundraising inside and outside the Greenlandic Homerule System. Unfortunately we have had to stop the project again for financial reasons.

Carl Christian Olsen, the Greenlandic Homerule Office of Language, strongly supported our project: "I am most happy to support Nunatta Atuagaateqarfia's application for money for a digital index of newspapers and periodicals. There is a clear need to base documentation of the continuing Greenlandic democratization process on primary sources.

During our work on the statement of language policy it has again become evident how great is the need of access to primary and untranslated sources of the documentary material. This need grows proportionally with the number of students and researchers writing papers and dissertations today.

The lack of access to untranslated primary



sources will easily create projects based on secondary sources only. This very much damages the value of the research of our students. All students studying the process of democratization have a right to demand access to the actual sources, unless you want to force an one sided presentation of the material. To avoid future biased research on Greenlandic history and secure documentation and understanding of the Greenlandic society and its development a digitized GATI is an indispensable part of our future University Campus Ilimmarfik homepage.”

Unfortunately the Greenlandic library system has not yet been able to solve the problem of access to and indexing of our primary sources from newspapers and periodicals. We hope and work to develop understanding for this strong need.

Fortunately we can digitize today. The exiting West-Nord Project digitizes old newspapers and periodicals and the methods developed here will be of great value in the future. The next speakers, Dorthe S. Jørgensen and Erika Nielsen, will tell you more about this fascinating project.

How do you deal with the primary sources in other parts of the polar regions? What do you do in Nunavut and in the other areas with small language groups in the polar region? Are we all on the same tentative starting level or have you perhaps visions of another future? Might we in the future gather all relevant information sources in one large database, where all users will have easy access to this important material? How could we start such a project?

Finally I want to thank you for your attention and hand out the first official invitation to a seminar on the conditions for small languages and their literary production. The seminar takes place in Nuuk in September 2003. I hope to see you there.

Groenlandica and the Ilisimatusarfik Library – past, present and future

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Abstract. Groenlandica is the name of the national library of Greenland and together with the Ilisimatusarfik Library at the University of Greenland the largest research libraries in Greenland. This paper will outline the history of the library system of Greenland and give a presentation of Groenlandica and the University library today. Groenlandica participates in two Nordic programmes to improve access to important sources of information. Finally, the paper will report on the plans to establish a new centre for education, research and documentation, Ilimmarfik, where the two libraries will be merged.

Literary history. The Greenlanders have had access to books in Greenlandic for more than 200 years. Between 1790 and 1850 local missionaries in Greenland received more than 16,000 books, mostly religious, to be distributed free of charge among a population of about 3,000 people. Most West-Greenlanders were literate in Greenlandic as early as 1860.

With the standardization of Greenlandic orthography in the 1850s by Samuel Kleinschmidt (a Moravian missionary, linguist and much more), and with the publishing of the newspaper *Atuagagdliutit* from 1861, Greenlanders gained access to non-religious literature and began to express themselves publicly in writing. *Atuagagdliutit* is a treasure, as cultural and printing history. The first colour illustration in a newspaper was published in *Atuagagdliutit* in 1861, a woodcut showing the American navy visiting Nuuk.

Library history. The first plans for libraries in Greenland were outlined as early as the 18th century. These libraries were reserved for the Danish colonists and the few Greenlanders who mastered the Danish language. In the first half of the 19th century missionaries established small collections for the local population. Nunatta Atuagaateqarfia



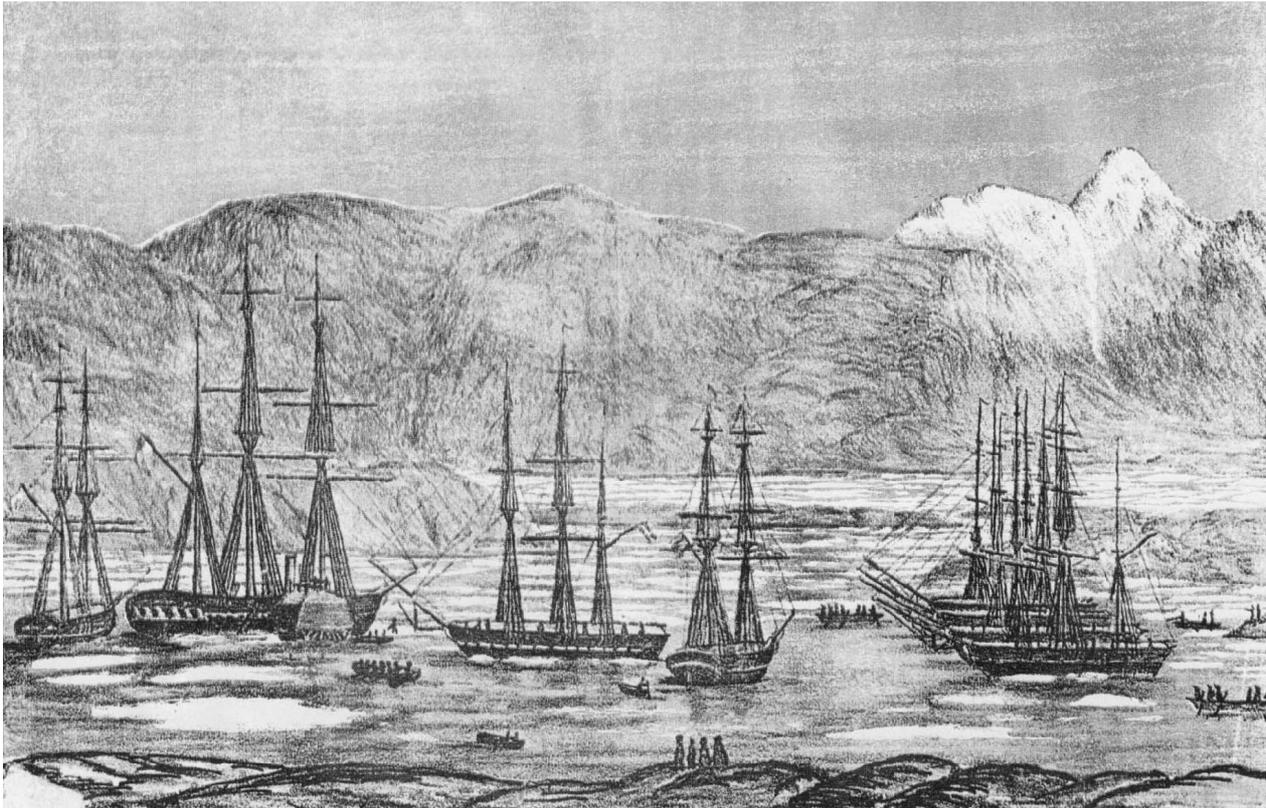


Figure 1. A visit of the American navy was shown in colours in the first issue of the national newspaper *Atuagadliutit*, 1861.

(The Public and National Library of Greenland) was founded in 1925, but the first library legislation came in 1956. One of the first Parliament Orders resolved by the new Home Rule Government in 1979 was for the library system. With this order Greenland took over the responsibility for the library system and for the preservation and registration of material published in Greenland.

The history of Groenlandica. As a result of the first library legislation in Greenland in 1956, the first qualified librarian, Hans Westerman, was employed. Hans Westerman was in charge of the creation of the present Greenlandic library system in the fifties and also in reforms after the establishing of Home Rule in 1979.

Westerman started the Groenlandica-collection in the fifties, primarily as a museum for the old and valuable Greenlandic publications and manuscripts. In 1968 a fire ruined most of the collection, but luckily the manuscripts of Samuel Kleinschmidt were rescued.

Through gifts and purchases from second-hand

bookshops and auctions all over the world we have succeeded in replacing almost everything. There are still holes in the collection, but we have a large collection of unregistered material which may fill them.

In 1976 the library moved into the present premises which is now much too small.

Objective. The objective of Groenlandica is to establish a national and a foreign collection. The National collection consists primarily of material acquired according to parliament order on legal deposit. Books, newspapers, magazines and other printed material which illustrate the material and spiritual development in Greenland. The foreign collection consists of books and other material about Greenland, Inuit, the Arctic and other subjects of importance for the Greenlandic society.

Groenlandica today. Groenlandica is today a department of Nunatta Atuagaateqarfia and acts as the national library. Groenlandica administers preservation and registration of the legal deposit, manu-

scripts and other material of national interest and purchases and registers the foreign collection. Besides, Groenlandica is responsible for the Greenlandic national bibliography and for answering domestic and foreign inquiries.

Nunatta Atuagaateqarfia's roles as national library, central library for Greenland and public library for Nuuk give a very broad user group from leisure time readers to students, national and international researchers. Groenlandica mostly services researchers and students.

The collections of Groenlandica and of the public library are registered in the same database (www.katak.gl). Groenlandica does not have its own reading room, and patrons have to share the reading room with users of the public library. The staff of Groenlandica is 1 head of department, 1 librarian, 1 technical assistant and 1 unskilled employee. In addition to the shared areas, Groenlandica has 350 m² stack room and office. All the collection is placed on closed shelves, the national and special collections in a fireproof room.

The special collection consists of several smaller collections, among others the rescued collection of Samuel Kleinschmidt's notes, Greenlandic writers' manuscripts and books, collections of audiovisual materials, and a collection of non-Greenlandic books from before 1870.

According to the legal deposit act, 3 copies must be deposited, and Groenlandica buys a 4th copy for lending. Due to the increasing publishing activity in Greenland together with increasing awareness of the legal deposit rules, the collection is growing rapidly and space has become a major problem.

On 1 January 2002 c. 20,000 titles (c. 57,000 books) were registered in the database, half of them in the national collection. Most of the periodicals and the special collection are not yet registered in the database. In 2001 the circulation was 706 and the budget for 2002 is 170,000 DKK.

The database. Nunatta Atuagaateqarfia started computer registration and lending in 1993. The first to be registered was the public library collection and next those Groenlandica books already catalogued in the database. The rest of the collections are registered little by little, the national and foreign collections were done in 1997.

In 2001 3 external educational institutions start-

ed to register their collections in the database and hopefully the university will soon be able to do the same.

Projects. Apart from the day to day work Groenlandica has different projects. Lots of time is used for relocating material because of lack of space and cataloguing unsorted material piled up through the years. In 3 years we have spent DKK 100,000 on binding periodicals. Groenlandica also takes part in external projects, eg. the Center for Knowledge of Children and Young People, two digitizing projects and Ilimmarfik, the centre for research and education (see below).

Center for Knowledge of Children and Young People. In the fall of 2001 the parliament decided to establish a documentation centre about the conditions of children and young people in Greenland, a Centre for Knowledge of Children and Young People. Groenlandica serves in the affiliated committee. Presently the centre is placed in the Ministry of Social Affairs and Labour, but it is supposed to be a part of the coming campus Ilimmarfik where collections of the center will be included in Groenlandica.

Digitizing projects. Groenlandica participates in two digitizing projects: *Tiden* and *Vestnord*.

Tiden is run by the National libraries of Norway, Denmark, Sweden, and Finland, and *Vestnord* is run by the National Library of Iceland in cooperation with the National Library of the Faeroe Islands and Groenlandica. The projects will have a mutual interface on the Internet, expected to be accessible by the end of 2002. Both projects are funded by *Nordinfo* and other foundations.

Two different methods are used for the projects. *Tiden* microfilms newspapers while *Vestnord* uses digital camera.

The Groenlandica contribution to the project *Tiden* is microfilming the newspaper *Atuagagdliutit* from the start in 1861 to 1999. In the project *Vestnord* Groenlandica digitizes the Greenland code of statutes, *Nalunaerutit*, 1905-1952, the magazines *Sujumut* 1933-1948 and *Avangnamiok'* 1913-1948, and the register to *Meddelelser om Grønland* (Monographs on Greenland) 1879-1983.

Inuit Institute. Iisimatusarfik is a very young uni-



versity. The first proposals for an institution in Greenland named Inuit Institute was made in the Provincial Council for Greenland in the fall of 1974. Its task was to do research in Greenlandic culture and language at a university level and to teach the subjects. A preparatory commission was set up, but never assembled, and the idea was left until Home Rule was established. In April 1980 the minister of Education and Cultural Affairs appointed 3 Greenlanders to give a report about an "Inuit Institute". The commission submitted their report in November 1980 and during the fall session in 1981 of the Greenland Parliament, the minister proposed an act for the Inuit Institute. The act was passed on 16 October 1981. In the summer of 1983 the Inuit Institute opened on the first floor of a newly built extension to Nunatta Atuagaateqarfia and received the first students 1 February 1984. A theological institute was also established in 1983

Ilisimatusarfik. In 1987 the Inuit Institute and the Theological Institute were merged and moved to an old but totally renovated Moravian Mission Station from 1747. The name was changed to Ilisimatusarfik/University of Greenland and the first statute was given in 1989. There were 3 departments: Department of Greenlandic Language, Literature and Media, Department of Culture and Sociology, and Department of Theology. The Department of Culture and Sociology comprised both cultural and administrative studies and was in 1990 divided into Department of Cultural and Social History and Department of Politics and Economics.

Today the building only contains some classrooms, the library, computer rooms, lunchroom, and a few offices. Other offices, 2 more classrooms and the university administration are scattered over 3 houses in the neighbourhood. Furthermore the university disposes of 3 houses to accommodate visiting lecturers.

Today Ilisimatusarfik has 15 teachers (of which 1 is president), 1 head of administration, 1 senior clerk, 1 caretaker, 1 librarian and about 100 students. In 2001 we admitted our first PhD student.

Until today 50 bachelors have graduated from Ilisimatusarfik, and 26 of them have also taken their masters degree.

The history of The Ilisimatusarfik Library. The library has always been important to Ilisimatusarfik, and when the university moved into the new building, the library got the whole ground floor of the side wing. From the start there was an employee at the library, though not always a trained librarian and not always full-time.

The library's collection consists of about 18,500 books, and we subscribe to 123 periodicals. The collection covers mainly anthropology, archaeology, history, sociology, politics, economics, linguistics, media, theology and philosophy.

Although the library is rather new, it has a lot of older books related both to Greenland and to the teaching subjects, donated by individuals and educational institutions, national and international.

In 1991 the computer registration started, but unfortunately not in a library system but a database-system called Freebase, which we still use. Hopefully we will have the collection registered in the national database soon.

The library covers 72 m² (about 425 meters of shelves) and the librarian's office is 14 m². The theological library is placed in a classroom and duplicates are placed in one of the computer rooms.

In 2001 the accession was 663 books, the circulation was 1062 and the interlibrary loans were 534 of which 188 were copies. The interlibrary loans are mostly loans from Groenlandica, from the local education institutions and from research libraries in Denmark.

We get a very fine service from the research libraries in Denmark. It is mainly the State and University Library and the Royal Library we borrow from, but we also use the other University Libraries, the Business Schools and the National Library of Education. Books from outside Denmark are ordered through The State and University Library.

The library's budget is 200,000 DKK for books and periodicals. 40,000 for each department and 40,000 DKK for shared acquisitions (newspapers, dictionaries, books on study skills, IT and library technique).

Ilimmarfik. As you have heard both Groenlandica and the university have far too little space. A situation we share with several other institutions in Nuuk. The idea of building a campus big enough

for several research institutions started at a conference on advanced studies in 1993. In 1996 four institutions with serious space problems sent a proposal to the Home Rule Government of building a house for them on the site next to the newly built Greenland Institute of Natural Resources and they called the place *Ilimmarfik*. Ilimmarfik is the word for a place where knowledge is produced or where the spirit can travel.

Today eight research and educational institutions are involved in the planning for Ilimmarfik: University of Greenland, School of Social Work, School of Journalism, Institute of Education, Groenlandica, The National Archive, Statistics Greenland and the Language Secretariat.

The objective of Ilimmarfik is to create an up-to-date framework for academic training, for research and for safekeeping and wider accessibility of Greenland's cultural treasures. An architectural competition was held in 1999 and the winning prize was given to KHR A/S in cooperation with Tegnestuen Nuuk. Further planning is carried out by an interim board of directors consisting of the leaders of the participating institutions in cooperation with the Ministry of Culture, Education Research and Church.

In Ilimmarfik, Groenlandica will be merged with the libraries of the other participating institutions into a National Research Library and will give access to a unique fund of knowledge, which today is invisible on closed shelves or in some cases in libraries without librarians.

The combined library will be part in the study and research environment and an information centre for the whole of Greenland and for the rest of the world. Optimistically, by then all the collections are registered in the national database.

Today librarians who are trained in public libraries perform the library service for the academic world in Greenland. In Ilimmarfik it will be an improvement to be able to consult subject specialists to secure the quality of the selection of material, key words etc.

The National Research Library in Ilimmarfik will hopefully help make education and research a tempting occupation for the Greenlandic youth, so that Greenland in the future will get researchers with a knowledge of the language, the culture, the society and the nature.

The plans now include a library situated in a

two-storey building, close to the reception, the archive and the canteen with 515 m² open library, including reading rooms and circulation desk, 139 m² fireproof room, 131 m² offices and processing department, a total of 785 m². The reading rooms will also be used by visitors to the National Archive, which will be housed in the same building.

But even though a lot of work and money has been put into the Ilimmarfik project, the parliament and the government have not yet granted the necessary funding for the project. The budget for Ilimmarfik is DKK 159 mio. of which it is hoped to get DKK 60 mio. from various foundations. The latest report says that the building process will start no sooner than 2005, so we will have to put up with our small spaces for a few more years.

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The ideal University of Alaska Science Library

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Abstract. The ideal University of Alaska Science Library (UASL) will meet the many information needs of the University's and other scientists and students which still cannot be met except through a library, even in the digital age. It will be a major factor in UAF's continued preeminence in high-latitude research, instruction, and science information service. It will contain a substantial book collection, because books will remain a medium of choice. It will have space for book collection expansion for at least 25 years, and it will remain flexible and adaptable to new technologies and concepts in science information service much longer. It will provide a comprehensive array of journals, individually selected, like new books, on the basis of the Science Librarian's knowledge of ongoing and new research and instructional programs. Unlike most books, all journals available digitally will be acquired in that form and made desktop-accessible by UAF and associated personnel anywhere they have Web access. Print-form backruns of many journals not yet digitized will be held in partial fulfillment of UASL's role as a major repository of the published record for high-latitude sciences. In addition to online journals, UASL will provide access to comprehensive indexing of the scientific literature and to certain carefully selected no-cost supplemental Web sites. As most of these various resources will be Z39.50-compliant, all will be brought together in a single integrated library information system.

The ideal UASL will be a symbiosis of the digital and physical information realms. It will provide an abundance of environmentally conducive people space, furnished and equipped to optimize individual, group and online intellectual activity and to minimize distractions. That activity will be enhanced by informal and organized information literacy instruction, all in the broader philosophical context of scientism. The ideal UASL will promote, with its physical, digital and instructional resources, scientism as the most appropriate worldview for advancing human physical, intellectual, cultural and spiritual well-being. Finally, the ideal

UASL, which could open as soon as seven years from now in a thoroughly renovated existing building, will solve two traditional problems facing the UAF Library system. These are an increasingly acute lack of space for materials, services and user activity, and the need to consolidate science materials on the part of the now bifurcated campus where most of their users are located. The statement presented here, painfully abridged to meet the space constraint, represents a more comprehensive document which is the first essential, to guide the broader planning process and fund raising for UASL.

Introduction. The University of Alaska Fairbanks (UAF) is the only high-latitude doctorate-granting university in North America and one of just a few in the world. UAF has long been a leader in research and instruction concerning high-latitude places, phenomena, processes, resources and peoples, and now it is experiencing major growth in physical and biological science activity and funding acquisition.

The capacity at UAF for providing science information materials, online resources and services is in increasing jeopardy as research and instruction expansion continues. Thus a new science library is needed at UAF, as a physically separate component of the University's main Rasmuson Library. An overview of the need and research methodology is followed by a description of the ideal University of Alaska Science Library, or UASL. The full description, available from the author, is the first essential in the UASL planning process, even though it will continue to evolve as science information concepts and resources continue to change.

Certain assumptions and opinions and the broader UASL vision presented here are those of the author and others in the science information leadership realm and are not necessarily agreeable to some persons.

Methodology. Analyzing the need for a new UASL is based on conditions readily apparent to the UAF Science Librarian, his colleagues and much of his constituency. Design of the ideal UASL has two major foundations. First, a great deal of ongoing research and thought concerns the future of the library in general and the nature of science in-

formation and its accessibility. Application of relevant results from so much intellectual activity, as reported in the contemporary print and online literature, is the primary contribution to UASL design. Second, an ambitious and responsible science librarian will work to know the broader mission of his institution, the specific information needs of the diverse members of his constituency, and how providing for the latter complements the former. Assuming this knowledge in conjunction with a substantial knowledge of the relevant literature, one is qualified to prepare a science library design worthy of review, appropriate adjustments, and approval by colleagues and constituents as well as architects and construction managers (Leighton and Weber 1999: 8). Even so, ongoing evolution of the design is not only to be expected in a changing science information environment, but will be essential for realizing the most nearly ideal facility (Arms 2000, Bazillion and Braun 2001, Crawford 1999, Leighton and Weber 1999, Riggs 2002, Webb 2000).

The ideal UASL is defined on the basis of five criteria. First, it will meet all the regular needs of its users, both within the physical library and elsewhere, in terms of print and digital information resources and in terms of reference and other services. Second, it will meet certain needs that many in its constituency might not have clearly realized they had, particularly in terms of bibliographic and information literacy instruction. Third, UASL will be sufficiently imposing both physically and in terms of its collections and services to be an intellectual hub of the UAF campus. Fourth, as a primary repository of the scientific record for high-latitude regions, it will be an information resource for other institutions and agencies in Europe, Russia and other countries as well as in North America. Fifth, and most importantly, the ideal UASL will be adaptable to future major changes in conceptual and technological aspects of science information form, access and use.

In many cases, designing new libraries draws on user surveys. Such a survey was not done to inform this first design of the ideal UASL for four reasons. The most practical one was that the UAF Science Librarian did not want to burden his constituency with yet another demand. The second reason is the Librarian makes it a point to interact with his constituency regularly, particularly by

making it well known that he is always eager for recommendations for book and journal acquisitions and other aspects of service (Anderson 2002b).

The third reason a user survey was not conducted is the assumption that a diligent science librarian will know of resources and services that should be provided but about which most of his constituency is not clearly aware and would not be able to articulate in a survey or otherwise (Winston and Dunkley 2002). As the sources cited indicate, one can take advantage of a very substantial amount of contemporary and forward-looking research and thought.

Fourth, and most persuasively, many user surveys are reported in the literature, and a few of these have been quite instructive for UASL design (Hiller 2002, Salwasser and Murray-Rust 2002, Greenstein and Healy 2002, Baruchson-Arbib and Bronstein 2002). However, as the UASL planning process continues, one or more user surveys might be implemented, guided by such presentations as those of Covey (2002) and Junion-Metz and Metz (2001).

The Need. According to its mission statement, UAF "... as the nation's northernmost Land, Sea, and Space Grant university and international research center, advances and disseminates knowledge through creative teaching, research, and public service with an emphasis on Alaska, the North and their diverse peoples" (www.uaf.edu/uni-vrel/plan/draft/plan.html).

Two of six specific goals in its strategic plan (*idem*) call for UAF to "be a world leader in arctic research and related graduate education" and "an academic gateway to the North Pacific and the Circumpolar North." Thus a substantial mandate is imposed on its Rasmuson Library system to support this mission and these goals with information materials and services.

The UAF campus has become bifurcated (Leighton and Weber 1999: 15). Instruction, research and service in mathematics, engineering, technology and the arts and humanities are based on Lower Campus, which is the original campus. The sciences, on the other hand, are now almost exclusively on a newer part of campus, the West Ridge. The migration there began in the late 1950s when space became limiting on Lower Campus.



While these two distinct areas of campus are only 1.2 km and a healthy hike apart, that is too far for science personnel to take full advantage of physical library materials, facilities and spaces according to modern standards of convenience.

The UAF BioSciences Library (BSL), a component of Rasmuson Library, is located on the West Ridge and serves UAF users and many others in the broad realm of the life sciences. In addition, a splendid new special library nearby, independent from Rasmuson Library, serves needs of researchers in the Geophysical Institute (GI) and International Arctic Research Center (IARC) in the realm of physics, astronomy, meteorology and geology. A succinct overview of these two libraries and their holdings and services is at their Web sites, www.uaf.edu/library/collections/biosci/index.html and www.gi.alaska.edu/services/library.

Unfortunately, BSL occupies antiquated space built in the 1960s. Growth in life sciences research and instruction since then has pushed BSL to its physical limits, and now major new programs with much new funding are increasing the pressure for materials, services and space all the more. In addition to its on-campus obligations, BSL has responsibilities for branch libraries and related services in UAF's remote research facilities (Anderson 2000, 2002a, 2002c).

In the broad realm of the physical and earth sciences, there is a considerable amount of UAF activity on campus and elsewhere outside of GI and IARC. The Departments of Chemistry, Geology/Geophysics and Physics are separate entities, although each shares some faculty members and graduate programs with GI and IARC. Thus Rasmuson Library has a substantial responsibility in this subject realm as well. There is a large collection of books and journals for the physical and earth sciences in the main library on Lower Campus. However, as those faculty members and students are mostly located on the West Ridge, the materials in the main library need to be transferred there, into a new UASL.

The lack of space in BSL inhibits further growth of its book collection and precludes the transfer of physical sciences materials from Lower Campus. Beyond that, it is affecting very seriously the ability of students and others to use the Library for reading, study and intellectual interaction, and

the ability of the Science Librarian and his colleagues to provide information literacy instruction. A major and essential feature of any academic library is its people space (Bazillion and Braun 2001, Bennett 2001, Demas and Scherer 2002, Mann 2001, Riggs 2002, Williams 2002), and BSL is increasingly lacking in that (Anderson 2002c).

Books. Most science librarians see no reason to assume, with the advent of electronic books, or e-books, that the demand for books in print form for teaching and research purposes will decrease significantly (Anonymous 1999, Bazillion and Braun 2001, Bennett 2001, Bridges 2001, Crawford 1999, Kniffel 2001, Mann 2001, Negroponte 1996, Riggs 2002). Books in the traditional form, presenting scientific and technical information at length and in depth, will remain the medium of choice for serious study and thought, even as lighter and popular book-length writings might become more common in e-book form. Thus there will continue to be a need for additional space to accommodate new books in libraries, especially in science and research libraries.

UASL will be a major research library, and as such it will be a holder and provider of original information in the sciences, and there is inevitably an increase over time in such information (Bush 1945). Ongoing acquisitions of older research materials in print form, as by donation from retiring faculty members, will also require physical expansion space.

The truly ideal UASL will provide book expansion space indefinitely into the future. Of course no mortal can see that far ahead, and the allocation of expansion space requires adopting certain assumptions (Leighton and Weber 1999, Webb 2000). For UASL these are (1) expansion space for 25 years from the time of opening will be adequate, (2) from then on, the rate of acquisition of books and other publications in print form will decrease substantially, and (3) any further space needed beyond that time will be acquired through construction of physical additions to the library, and the design of those will be future enterprises separate from the design presented here.

To push the concept of ideal to the optimum, it is recommended that UASL have space for future collection expansion equal to twice that occupied by the collection with which it starts. That collec-

tion will comprise the present 60,000 books in BSL, the perhaps 14,000 additional ones that will be added in the seven years before UASL can reasonably be expected to open, the approximately 66,000 books in physics, geology, chemistry and related disciplines currently housed on Lower Campus, plus the approximately 7,000 books that will be added there. From these, an estimated 5,000 books will be withdrawn during the next seven years. Thus the net total of books for the UASL startup collection will be 142,000. At an average of 15 items per shelf foot (Anderson 2002c: 15), about 9,500 feet of shelf space will be needed for the startup collection, plus another 9,500 feet for 25, or 30, years of expansion, for a total of 19,000 linear feet (5,791 m).

The 19,000 feet of shelving, with standard spacing between units, would occupy on the order of 25,000 ft² (2,232 m²) of floor space (Leighton and Weber 1999). However, it is quite feasible to divide a collection into a high-use component and a larger low-use component, then to shelve the latter on compact shelving in an area relatively unattractive as people space, such as a basement. In the ideal UASL, that division of the collection will reduce the total amount of floor space for book shelving to an estimated 15,000 ft², or 1,394 m².

Journals. The outlook for journals in the sciences is quite different from that for books (Butler 1999, Carlson 2001, Flecker 2001, Reich and Rosenthal 2002, www.publiclibraryofscience.org). While a relatively small portion of scholarly books in the future will be in digital form, most, if not all, journals for the sciences will be in that form and thereby potentially desktop-accessible. This is because the technology is available, the economic incentives and arrangements are becoming irresistible (Arms 2000, Goldstein 2002, Salwasser and Murray-Rust 2002), and, most of all, researchers and students almost overwhelmingly prefer the common-sense convenience and economy of desktop accessibility (Anderson 2002b, Hiller 2002).

Currently BSL subscribes to 686 individually selected journals and other periodicals for the life sciences, and 388 of those, or about 57 percent, are online. Rasmuson Library, of which BSL is a part, subscribes to many more selected titles for the physical and earth sciences. These selections are designated by Anderson (2002b) as essential titles,

defined as those specifically requested by users, and accessory titles, those not specifically requested but determined by the Science Librarian as needed to provide adequate coverage of the various subject areas. In addition to the individually selected titles, Rasmuson Library provides online access to numerous so-called peripheral titles for the sciences by virtue of their inclusion in the journal collections, or package deals, of several publishers and vendors (Frazier 2001). A complete list of some 4,000 titles is at the Rasmuson Library Web site, www.uaf.edu/library.

Providing access to online journals requires access as well to online indexes of journal contents, including the contents of backruns in print form. For the sciences, Rasmuson Library with BSL currently subscribes to 17 primary indexes, 7 additional databases providing indexing and some amount of full-text coverage, plus six major journal collections. All of these resources, plus a number of less important indexes for the sciences and several encyclopedias, are accessible by UAF and associated personnel anywhere in the world they have Web access. The ideal UASL, as a digital millennium facility, will provide remotely accessible and adequate indexing across all the sciences.

The 57 percent of selected life sciences journals now online is probably similar for the physical and earth sciences. This percentage is expected to increase to near 100 by the time UASL opens some seven years from now. Thus it is clear that the amount of space in the ideal UASL necessary for new journal issues will be very small relative to that for books. Moreover, the amount of space needed for backruns of journals will decrease considerably from that currently needed as more and more runs are digitized and made accessible via online collections (Arms 2000, Carlson 2001, Flecker 2001, Reich and Rosenthal 2002, Salwasser and Murray-Rust 2002).

However, it appears quite likely that the backruns of some older and less common scientific periodicals will never be digitized and made generally available as such. Thus the ideal UASL will need to provide physical space for those materials. As science moves quickly forward, researchers are increasingly dependent on the science of the past. Current models build on past discoveries, and such building obviously requires access to the past publication of those discoveries (Bush 1945,



Bridges 2001, Butler 1999, Flecker 2001, Mann 2001, Schaffner 2001).

The amount of space UASL will need to contain journal backruns can only roughly be estimated because it is not known how far digitization will go over the next few years. Currently print-form journals in BSL occupy space approximately twice that occupied by books (Anderson 2002c). A conservative estimate for the future calls for a reduction of backrun space by 50 percent, which would be equal to the space now occupied by books. In the preceding section it was determined that 7,500 ft² (697 m²) of space would be required for the UASL startup collection of books. The foregoing analysis calls for an equal amount for the shelving for journal backruns.

Finally, a certain small amount of expansion space will be allocated in the ideal UASL for ongoing additions to the print-form journal collection, for the few journals still available only in that form and for certain high-use titles. That will raise the total space requirement for print-form periodicals to 8,000 ft². Adding that to the 15,000 ft² projected above for the startup book collection and its 25 to 30 years of expansion brings the total for physical materials in UASL to 23,000 ft², or 2,137 m².

Other Online Resources and Science Information Literacy. Science librarians are well aware that an increasing amount of literature and various forms of data for the sciences are being made available on the Web at no cost to anyone who can find it there and use it. Many efforts are being made to impose some order on the confusing chaos of such resources and to identify and make readily accessible those of quality and most relevant to specific constituencies (Clement 2000, Greenstein and Healy 2002, Lee 2002, Salwasser and Murray-Rust 2002, Sisson 2000). In the ideal UASL, librarians will monitor the Web and the literature (e.g. Riley 2002) for new information to be reviewed and evaluated in the context of research and instructional activities in UAF. Those determined to be of value will be listed as links at the UASL Web site.

The ideal UASL will contain an electronically replete smart classroom with a capacity of perhaps 30 individuals, primarily to facilitate organized instruction in information literacy. With information resources for the sciences and other subject areas becoming so numerous, diverse and

variable in quality, more and more professional attention is being directed toward researchers' and students' access to and use of them (Bazillion and Braun 2001: 181, Brown and Krumholz 2002, Whitmire 2002). For UASL it is appropriate that this attention be considered in the broader context of science and its constant stream of new findings and syntheses and their applications to human intellectual, physical and spiritual well-being.

Much has been written on the increasing importance of science to society at large, as by Tudge (2001) and Shermer (2002). Indeed, the ideal UASL will promote the concept of scientism, defined by Shermer as "... a scientific worldview that encompasses natural explanations for all phenomena, eschews supernatural and paranormal speculations, and embraces empiricism and reason as the twin pillars of a philosophy of life appropriate for an Age of Science." In Alaska, wildlife management is a special example of the need for increased scientific attention, to counter regulatory actions based on uninformed and environmentally degrading personal agendas (Van Ballenberghe 2002).

The ideal UASL will promote scientism and information literacy, and serve specific scientific and medical information needs, well beyond its immediate UAF constituency. As local public and school libraries can contain only a minor portion of the high-latitude scientific record, UASL will be obliged to facilitate access to its own materials and online resources by members of the broader population and other research and resource management entities (Anderson 2000, 2002a).

The service desk in the ideal UASL will be occupied by a librarian or library assistant all the time the library is open. That will optimize the ability of staff members to promote information literacy as users attempt to deal with the diverse multitude of digital and physical resources. Even in early 2002, the UAF Science Librarian is astonished by how many BSL users appear to be only vaguely familiar with the concept of the library catalog and with how readily it can provide intellectual and physical access to the information needed, whether in print or digital form. The unfamiliarity is not relieved by the habit of some library workers in referring to the catalog only by its specific local pet name. That obfuscates any instructional function concerning the library catalog

as a concept and as an essential and widely accessible tool.

These concerns for fundamental aspects of information literacy will remain valid even as the ideal UASL will provide as fully integrated an online library system as possible. That will take advantage of the increasingly widespread implementation of the Z39.50 standard, bringing catalogs, indexes and other online resources together through a single user interface. Thus the distinction between these diverse information entities will become less apparent to the user. Instead of a hodgepodge of interfaces, each with its own idiosyncrasies, it will be necessary to learn only one interface. Nevertheless, the user's effectiveness in this streamlined and seamless environment will be enhanced by an understanding of basic bibliographic principles.

People Space. The amount of space projected above for materials in the ideal physical-digital UASL, 23,000 ft², is modest compared with other major academic science libraries. However, the ideal UASL will need to provide at least as much additional space for library users as for the startup book collection. The literature is exhaustive on the value of public, academic and many special libraries as places, in the traditional sense, for individual reading and study, for intellectual interactions and group study, and for information literacy education (Bazillion and Braun 2001, Bennett 2001, Crawford 1999, Demas and Scherer 2002, Mann 2001, Riggs 2002, Williams 2002).

The people space in UASL will be furnished by a number of individual study carrels and small-group tables appropriate to the size of its user community. It will provide network connectivity throughout for the use of personal computers, it will provide an adequate number of permanent computer workstations, and it will provide instruction space and equipment (Bazillion and Braun 2001, Leighton and Weber 1999). Most of the furnishings will be distributed in one large reading room also containing the service desk and close to the librarians' and other staff offices. Six of the tables will be located in as many separate group-study rooms, with closable doors, around the periphery of the main reading room. All carrels and study tables will be fitted with network outlets for the use of personal computers. Those

provisions will facilitate writing and editing as well as information retrieval.

The functionality of the people space in the ideal UASL will derive largely from the availability of print and digital forms of information for the sciences, from its furnishings, and from the instruction and assistance of library personnel. Its functionality will be further enhanced by its aesthetic qualities. A proper visual and sonic environment is essential not only to the suitability of a library as a place to be, but also to the ability to work effectively, without distraction (Bazillion and Braun 2001, Mann 2001, Bennett, 2001, Demas and Scherer 2002, Williams 2002). The ideal UASL will take advantage of a large private collection of original nature-oriented paintings potentially available at no cost. As such it will serve incidentally as an art gallery, and as that will be aesthetically appealing, it will further promote effective intellectual activity.

A major feature of the UASL visual environment will be the windows in the main people places. These will be sensible in size, placement and number, which will be in stark contrast to the atrocities in "fenestration" that architects in the past have imposed on some UAF campus buildings (Anderson 2002c). Most UASL windows will face south, which is the critical direction at high latitudes. To preclude future design and architectural improprieties, the Science Librarian and other members of the UASL Planning Committee will work closely with architects and engineers from the earliest stages.

In the ideal UASL special attention will be devoted to maintaining a conducive sonic environment, free from the many noises plaguing modern society that can be not only physically distractive but psychologically stressful. As just one example, the UAF campus with its long winters is frequently insulted by the backup beeping of snow removal equipment. In most cases that serves no useful purpose, but there is an all-too-inclusive legal requirement that such equipment and many other noisy vehicles always produce the superfluous nerve-wracking warning when backing up. Unfortunately the idiotic racket can be heard indoors with the windows closed. That added to other unnecessary sonic impositions _ like most computer beeping, keypad twerdling, cell phones blurting electronic bastardizations of a famous



Bach theme, and even dogs barking in cars thoughtlessly parked nearby _ can seriously impair effective and efficient intellectual activity.

To help assure an appropriate sonic environment, the ideal UASL will be fitted with windows having at least three layers of glass separated by vacuums. Of course that will also enhance the thermal efficiency of the building, thereby decreasing the consumption of heating fuel in a cold climate and in a world where the supply of that is increasingly problematic. Indeed, the "need" for petroleum exploitation in Alaska's scientifically and aesthetically exquisite Arctic coastal plain is driven substantially by inefficiency, extravagance and waste. A conspicuous example is the widespread use of off-road motor vehicles, especially snowmachines, as a demented form of recreation, a great scourge on Alaska's precious nature.

The ideal sonic environment of UASL will also provide white noise, or "acoustic perfume" to mask unwanted sounds that intrude despite the structural protections (Bazillion and Braun 2001: 50, Leighton and Weber 1999: 481). If the sound of the HVAC system is not adequate, a white noise generator will be installed. That will feature adjustable volume so that protection can be enhanced during snow removal or other sonically disruptive activities. The interior white noise will also mitigate the stresses imposed on others by occasional slovenly library users, as with open-mouth and audible gum chewing and popping.

External design, location and name. Academic libraries are widely recognized as physical as well as intellectual hubs of their campuses (Bazillion and Braun 2001, Leighton and Weber 1999, Riggs 2002, Webb 2000). The ideal UASL will exemplify this philosophy of library physical status and the intellectual utility it promotes. UASL will not need to be monumental, but it will need to be centrally located, readily recognizable, reasonably attractive visually, and inviting in appearance among the complex of research buildings on the West Ridge. Thus it will do for that area what the main Rasmuson Library building does for Lower Campus, although that structure's role as a campus centrepiece and workplace is impaired by its ill-conceived architecture.

In many cases it is not necessary to construct a wholly new building to accommodate a new li-

brary. Instead, it is often feasible to renovate or add on to an existing structure, and those possibilities are discussed by Leighton and Weber (1999: 28) and others. Such a possibility exists for the ideal UASL in the form of an existing building that will be mostly vacated when a new life sciences building, now in the advanced planning stage, is constructed nearby on the West Ridge. For its new use, the existing building has the advantage of being centrally located and situated somewhat higher and more imposingly than the surrounding buildings. Unfortunately, a significant aspect of its "imposition" is its ugliness, stark and windowless even in its primary south-facing orientation. That design atrocity, plus certain other aspects of its structure, inappropriate even to the building's present uses, will need to be corrected for UASL to be ideally functional.

The building on the UAF campus potentially available for conversion to the ideal UASL has a total square footage on three floors of approximately 35,000 (3,252 m²). Earlier it was explained that book startup and expansion space plus space for journal backruns and future print-form issues will amount to 23,000 ft². It was also explained that people space should be at least equal to book collection startup space, or 7,500 ft². UASL will need in addition on the order of 1,000 ft² each for its smart classroom and offices. The total comes to 32,500 ft². If the entire building can be converted to library use, then the all-important people space can be made more nearly ideal with the allocation to it of as much as 10,000 ft², or a little over 900 m².

The role and status of UAF as a major center of high-latitude-oriented research and instruction was emphasized at the outset as an essential context for designing the ideal UASL. Therefore, a library name containing the word Fairbanks, as in UAFSL, would not convey the full service value and stature of the facility. The more generic and streamlined UASL will be ideal. That name will best represent the University as a single entity of international repute, and in any case there are no other separate science libraries in the multi-campus system with which it might be confused.

Acknowledgments. Carol Haas provided critical information concerning integrated online library systems and valuable technical assistance. She and Colleen Sullivan and Cathi Massay reviewed

a first draft, and all three have otherwise contributed to the author's broader vision for the ideal University of Alaska Science Library.

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Session 9: Polar literature

Silent friends – books and reading on polar expeditions

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Abstract. After food and shelter, reading and writing were fundamental preoccupations of polar explorers and adventurers. Writings were often meant to be public, and are generally well known. Reading, however, has received little attention despite indications that it was a constant activity for many, particularly during the dreary winter periods, north or south. This paper will explore descriptions of reading, from Frobisher in the 16th century to the Scott-Amundsen South Pole base in 2001, with special reference to shipboard and base libraries. The findings are suggestive of social stratification, personal motivation, religious preoccupation, nationalistic fervour, and latent romanticism among men usually seen as more muscular than mental.

“On the night of January 30, 1916, a frail, white-haired gentleman retired to the bedroom of his house in London’s Eccleston Square. Once undressed, he swung expertly into a hammock and, as he had done for more than seven decades, read himself to sleep in traditional Royal Navy fashion: One hand held his book, the other a candle, exactly as he had learned as a midshipman in 1844.

But on this occasion, fatigue overcame him with a rush. The burning candle slipped from his fingers, toppled among the bedclothes [and] ignited the blanket. Dense smoke filled the room. Before anyone in the house could intervene, Sir Clements Markham, then in his eighty-sixth year, dozed into eternity.... Directly over his smoldering hammock hung a perfectly good electric light.”¹

There is no doubt that polar history is a ‘hot’ topic, though not perhaps as enflamed as in the case of Sir Clement as somewhat fancifully de-

scribed by John Maxtone-Graham. From arm-chair adventurers to management consultants, new polar enthusiasts are reliving the exploits of those bold souls who traversed icy land and seascapes on foot, by boat, on sledge, on ski, by plane, on snowmobile, and even – in Shackleton’s case – on the seats of their pants. Their routes have been traced on maps, their descendants rooted out and pumped for oral history, their diaries ransacked for data on their logistics and weather and clues to their mental states, their stories become the stuff of novels and poetry, and still the curiosity of polar devotees is unsatisfied. Their basic questions remain: Who were these people? What motivated them to face such hardships? What could have been in their heads?

In their search for answers, modern students have largely overlooked the fact that many polar adventurers, and especially the officers and scientists, spent almost as much time at their books as they did running dogs, man-hauling sledges, leaping among ice-floes, or weathering storms on icy decks. Fogged in, snowed in, wintered in, iced in, or just ‘done in’, they typically spent countless hours reading books, consulting books, discussing books, memorizing books, creating books – even on occasion smoking a page or two.

What follows is a small selection from their personal journals and diaries as well as from second-hand accounts of polar exploration. This is not a balanced history of polar reading, but rather a small sample of writing about polar reading, presented in rough chronological order, showing only the tip of the immense iceberg that constitutes polar reading.

The tale can begin with Martin Frobisher’s third voyage in 1578, combining his earlier search for the Northwest Passage with an abortive plan to establish a mining colony on Baffin Island. The list of supplies for the colony included three Bibles, three Books of Common Prayer, 24 Psalm books, and 24 catechisms, not a surprising list given Frobisher’s orders “to banishe swearing, dice, and cardplaying, and filthy communication, and to serve God twice a day, with the ordinarie service, usuall in Churches of England ...” Whether this



was enough to supply the spiritual needs of the fifteen ships of Frobisher's expedition is not known.²

Somewhat more is known about William Barents' reading during his attempt to discover the Northeast Passage in 1596-97. According to L.P. Kirwan, when Barents' winter house at Ice Haven was discovered in 1871 near Novaya Zemlya, the contents were found to have been scattered by bears but surviving were some charts and books including a Dutch translation of the 1580 Cathay journals of Albert Pet and Charles Jackman which Barents had obtained from Richard Hakluyt, together with an old sea-chest. In the chest, "frozen together in the ice, were print and copper engravings depicting in elaborate Renaissance style classical scenes such as Pallas, Juno, and Venus in the presence of Paris, and biblical events such as the meeting of Esau with Jacob, all intended for the edification of the people of Cathay."³

We have found relatively little from the 17th and 18th centuries, apart from sporadic references. The nineteenth century, however, is rich with references, corresponding to a period in Western Europe that saw dramatic expansion of reading among all classes.

The voyages of John Ross and William Parry in 1818 and 1820-21, again in search of the Northwest Passage, were notable for their emphasis on crew morale: according to Pierre Berton, "trunks of theatrical costumes were packed aboard along with the mandatory printing press, the magic lantern, and a full library of books that would be used in the schoolroom Parry intended to establish. In that long Arctic night he was determined that his unlettered crew would learn to read their Bibles ... by year's end, every man had learned to read."⁴

Meanwhile, Sir John Franklin was searching for the passage over land, but not without reading matter. His *Narrative of a Journey to the Shores of the Polar Sea in the years 1819-20-21-22* [1824] includes an account by his expedition doctor, John Richardson, during the worst of their ordeals:

"Through the extreme kindness and forethought of a lady, the party ... had been furnished with a small collection of religious books, of which we still retained two or three of the most portable, and they proved of incalculable benefit to us. We read portions of them to each other as we lay in bed, in addition to the morning and

evening service, and found that they inspired us on each perusal with so strong a sense of the omnipresence of a beneficent God, that our situation, even in those wilds, appeared no longer destitute ..."⁵

John Ross continued Parry's tradition of literacy training in his 1829-33 expedition aboard the *Victory*, described by Fergus Fleming as a Royal Navy ship supplied with "a small library of Arctic reference books supplied by a grudgingly impressed Admiralty. Like Parry, Ross kept his men busy 'til evening when from 6 to 9 p.m., Ross oversaw a school covering reading, writing, arithmetic and navigation."⁶

Franklin's ill-fated search for the Northwest Passage aboard *Erebus* and *Terror* in 1845 was at least well-supplied with reading matter: "Despite the cramped quarters, the two vessels still had room for luxuries. The *Erebus* had a library of 1,700 volumes, while the *Terror* carried 1,200, including everything from narratives of earlier arctic expeditions and geographical journals to Charles Dickens' *Nicholas Nickleby* and bound copies of *Punch* magazine."⁷

Elisha Kent Kane's best-selling account of his search for Franklin (1853-55), *Arctic Explorations* (from which we take our title), speaks of the agony of giving up his "silent friends, my books" on abandoning ship after two years iced in, but reluctantly discards them along with "useless daguerreotypes." He later noted the needs of the baker for fuel in preparing food under difficult circumstances: "he kneaded the dough in a large pickled-cabbage cask, fired sundry volumes of the Penny Cyclopaedia of Useful Knowledge, and converted ... almost a whole barrel of flour into a strong likeness of the staff of life."⁸

Julius Payer, leader of the Austro-Hungarian *Tegetthoff* expedition to the Bering Sea and Novaya Zemlya in 1872-74, praises the value of books while awaiting spring and the chance to explore new lands: "We could enjoy the indescribable pleasures of good books, all the more that we were far from the busy haunts of men, and that the presence of danger clears and sharpens the understanding." Among the cold tomes, which "smoked" when opened in the warm cabin air, were Milton's *Paradise Lost*, Shakespeare, books on science, and "a whole tribe of romances, which were read with never-ending delight."⁹

Regrettably, we must pass over many significant expeditions for which reading experiences are recorded, such as Nordenskiöld's 1872 Swedish expedition, the Nares expedition of 1875, the Greely expedition starting in 1881, and the earlier Robert Peary explorations, to move hurriedly on to a trio of polar explorers and bookmen, Nansen, Scott, and Amundsen.

Nansen's famous ship, the *Fram*, as described in *Farthest North* (1898), was well equipped for reading: "the saloon was transformed into a silent reading-room. Good use was made of the valuable library presented to the expedition.... If the kind donors could have seen us away up there, sitting around the table at night with heads buried in books or collections of illustrations, and could have understood how invaluable these companions were to us, they would have felt rewarded by the knowledge that they had conferred a real boon...."¹⁰

Nansen was less well supplied with reading matter on his sledging journey after leaving the ship. His rescuer, Frederick G. Jackson, aboard the *Windward*, could also complain about the "want of more books and a better selection of them. With Arctic volumes especially we are very badly provided." The ship was at least able to provide Nansen with some reading matter after his long ordeal¹¹ (Figure 1).

Perhaps the best documented ships' library and expedition reading is for the books aboard *Discovery* during Scott's British National Antarctic Expedition of 1901-04. A complete, printed catalog of the ship's library, topically arranged, indicated locations of individual titles as distributed among the officer's quarters as well as the mess deck. Much can be made of the class distinctions implicit in the catalog, for example in the location of almost all of the polar historical literature in Captain Scott's cabin, the scientific literature in those of various officers, and almost all fiction and recreational reading in the enlisted men's mess deck.

Scott himself reports on the utility of the reference works to settle dinner time arguments: "After 'the King' has been drunk there is generally a rush for reference books, and there is a good deal of twisting to suit the reference. Our reference books are fairly numerous..., [including] the *Century Dictionary*, the *Atlas*, *Whitaker's Almanack*,

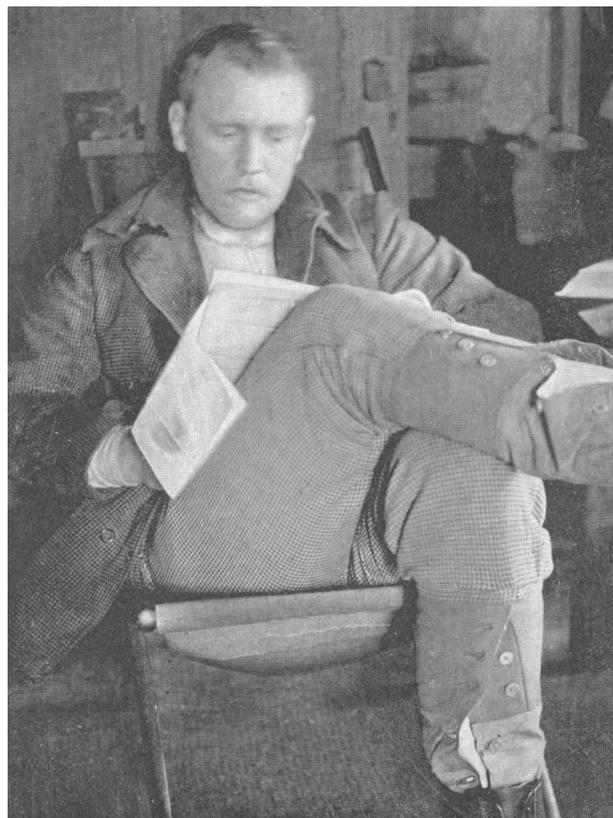


Figure 1. Fridtjof Nansen in 1897, having drifted for two years after leaving the *Fram*, reading aboard the *Windward* after his rescue. Frederick G. Jackson, *A Thousand Days in the Arctic*. New York and London: Harper and Brothers, 1899. p. 511.

Hazell's Annual, the *Statesman's Year Book*, and some others, provide an ample field for supporting one's own opinion, refuting one's opponent, or at least for confusing the issue." All of these titles were in Scott's cabin, and later moved to the Hut at Cape Royds. Here is Scott's account of extended reading during a November storm while sledging: "The men spent the rest of the day confined to their tent, where Wilson read aloud from *The Origin of Species*, the book chosen as reading material for the southern journey." The men took turns reading aloud until "their freezing fingers refused to turn the page."¹²

In his 1903-07 search for the Northwest Passage on the *Gjoa*, Roald Amundsen described the visit of an Eskimo to their ship: "Their favourite diversion when they visited us on the vessel was to look at the illustrated books. At first they generally set the pictures upside down, but with our assistance they

soon got used to the proper way of looking at them. Now, as luck would have it, we had hardly anything else but pictures of the Boer War ... not very pleasant even to us, and the Eskimo impression of 'civilization' derived from these pictures could hardly have been happy and alluring."

During his earlier explorations of the Arctic, according to Roland Huntford, Amundsen met two members of the Danish Greenland Literary Expedition, Knud Rasmussen and Mylius Erichsen. "The two Danes never forgot that meeting with Amundsen. They had lost their books and faced a winter without anything to read. Amundsen gave them a spare set of Goethe's works that he had on board. The pleasure of that unexpected gift in the polar darkness was a delighted memory for the rest of their lives."

Huntford recounts a more disturbing experience involving books in the Antarctic during Amundsen's South Pole conquest: "By a ludicrous mistake the Nautical Almanac for 1912 had been forgotten, the 1911 edition only being landed, and a single copy to boot. One night it was set on fire by an oil lamp. The flames spontaneously extinguished themselves as they reached the page before the vital tables. Amundsen took this as an omen ... he was now obliged by the Almanac to reach the pole before the end of the year."¹³

Matthew Hensen's account of Robert Peary's North Pole expedition of 1908-9 includes this description of the ship's literary provision: "On board ship there was quite an extensive library, especially of Arctic and Antarctic topics, but as it was in the Commander's cabin it was not heavily patronized. In my own cabin I had Dickens' 'Bleak House,' Kipling's 'Barrack Room Ballads,' and the poems of Thomas Hood; also a copy of the Holy Bible, which had been given to me by a dear old lady in Brooklyn, N.Y."¹⁴

Those on board Peary's *Roosevelt* expedition in 1908-09 had recourse to a portable lending library, tidily packaged in a wooden bookcase and bearing the inscription American Seamen's Friend Society, Loan Library Department. One of many such libraries distributed by the Society, it was aboard when Peary made his trip to the North Pole, and could at the time claim to be the world's northernmost library, and is now at Mystic Seaport.

Again we must reluctantly pass over Apsley Cherry-Garrard's classic account of the second

Scott expedition, *The Worst Journey in the World* (1922), which is especially remarkable for his invocation of books and reading on a voyage where there were many readers.

Robert Bartlett, ice master for Stefansson's *Karluk*, 1913-16, and many other voyages, was among the best read of polar diarists: "The *Karluk* had a good library and we saved a number of books which enabled some of us to catch up a little on our reading. We read such books as 'Wuthering Heights,' 'Villette,' and 'Jane Eyre,' besides more recent novels. My own constant companion, which I have never tired of reading, was the 'Rubaiyat' of Omar Khayyam ... This book I have carried with me everywhere since then, until now, if it had not been repaired in various places by surgeon's plaster, I believe it would fall to pieces."

Bartlett' in his reading did encounter other problems: "Before I began to recover from this swelling of the legs, I developed an acute attack of tonsillitis. It was the first trouble of the kind that I had experienced in all my Arctic work. I recall that on the North Pole expedition ... Macmillan and Doctor Goodsell opened a case of books and both came down with violent head colds. The books were brand new books, too; apparently they had been packed by a man with a cold"¹⁵

Just as books could threaten, so could they soothe: Bartlett's protagonist, William McKinlay of the *Karluk*, reports yet another use of expedition books: "Then I had my first smoke in many months - a cigarette made from the bark and leaves of one of Hadley's freemasonry books, of which he had several."¹⁶

We can hardly ignore Shackleton's legendary Imperial Transantarctic Expedition of 1914-17, given the reading matter stocked aboard *Endurance*. Even more telling than the books aboard ship was the reading matter that Shackleton kept with him when the ship went down. According to Huntford, "In his scanty personal belongings was a page from the Book of Job with the verses ... 'Out of whose womb came the ice? And the hoary frost of heaven, who hath gendered it? The waters are hid as with a stone, and the face of the deep is frozen.' This he had torn from the Bible presented by Queen Alexandra to *Endurance*. He had also kept the page with the 23rd Psalm ... and the fly-leaf inscribed by Queen Alexandra..."¹⁷

Returning to the North: Ada Blackjack, the only

survivor of Stefansson's Wrangell Island expedition, gives new meaning to the expression "to throw the book at someone." Reporting on her isolation with her weakened and dying fellow survivor, Errol Lorne Knight, Blackjack reports in her diary: "Apr. 28. Still blowing hard all day today I stay in my sleeping bag and yesterday because I'm not feeling well I do nothing but reading Bible.

"Apr. 29th.... And knight said he was pretty sick and I didn't say nothing because I have nothing to say and he got mad and he through a book at me that second time he through book at me just because I have nothing to say to him. And I didn't say nothing to him and before I went in my sleeping bag I fell his water cup and went to bed."¹⁸

In another setting, involving the contact of native peoples with the Bible, McKinlay recorded a translation of Psalm 23 which had gone from English into Inuktituk and back again into English: "The Lord is my great keeper; he does not want me. He shoots me down on the beach, & pushes me into the water."¹⁹

Of Richard Byrd's various expeditions, exceptionally good library provision was made for the second Antarctic expedition in 1933-35 at Little America. Although the base curfew was 10 p.m., "most of the men had had small bunk lights – little lamps run from flashlight batteries or kerosene lamps made from fruit jars, or even lanterns – which made it possible to read for half an hour or so after the main lights went out. But when the fire died the air chilled quickly. The hands would get cold, the breath would begin to freeze, and one by one the bunk lights would wink out."²⁰

Again we have to pass over The British Trans-Greenland Expedition 1934, rich as it is in book lore, especially in Martin Lindsay's book, *Sledge*. Many other Arctic and Antarctic expeditions provide further evidence of the often pivotal role of reading, in which the shift from the sacred to the secular, from divinity to Dickens, from prayer book to porn is all too evident.

The history of polar pictorial pornography does merit brief attention. Many of the early explorers clearly had pietistic and puritanical views where the discussion if not the existence of pornography would have been unthinkable. By the end of World War II the subject had emerged from the closet and the puritanical emphasis of commanders had pretty well disappeared. The British

North Greenland Expedition of 1952-54 exhibited on the walls of its hut a photograph of Constable's famous Haywain, or hay wagon, surrounded other pictures of naked women, with this commentary from Mike Banks: "We also thought that it was the plain duty of four lonely men to have a pin-up, so we cast about for one and Taffy found an advertisement in a Danish paper depicting a very finely endowed night club artiste, one Anna Laurie, unencumbered by too many clothes. She was framed [and] we grew very fond of her.... By some mischance she died a sad death by cremation, and for some time we were inconsolable."²¹

Another minor example comes from Operation Deepfreeze in 1957-58: "I dropped in on Willie Sumrall and took his picture. He was reading *Lee's Lieutenants*. He has the biggest collection of pin-ups in camp.... He quit reading *Gone with the Wind* after only a hundred pages because 'there wasn't enough sex and the South was losing.'"²²

Captain Finne Ronne on his 1957-58 expedition to Ellsworth Station on the Weddell Sea experienced extremely bad morale on his command, assuaged by reading and some degree of pictorial pornography. We cannot document the latter claim, but one of the authors of this paper did personally see it on the walls and radio equipment at Ellsworth Station.

Both Ronne and his antagonist John Behrendt did at least agree that there was good book provision for the wintering party. Ronne wrote later that "It was a blessing that we had plenty of reading matter in camp. We had not only one library – but two. The one for the use of all the men in camp was located in the hobby-room in the recreation hall ... Usually, when they had read them they were brought back to the library again or passed on to someone else." Ronne did get agitated about books not signed out from the scientific library and at times sounds like a stereotypic circulation librarian.²³

Our final example of polar books and libraries is an account received in July 2001 from an astrophysicist at the Amundsen-Scott base at the South Pole. The scientist, Chris Martin, reports that the collection now at the base is more than half recreational reading, roughly 3000 volumes, plus a small group of reference works, and with scientific works related to base research, perhaps 6,000 volumes in all. The remaining books are related to





Figure 2. "Comfort before Elegance," *Fun*, June 12, 1875, p. 244.

Antarctica and include first editions and copies autographed by early explorers. Access to e-journals is dependent on the individual scientist's home campus access. There is no assigned librarian; he describes the collection development policy as "accumulation by gift and abandonment." The base collections also include over 7,000 movies, mostly on Beta, "so people are increasingly spending their time watching movies instead of reading books."

Barry Lopez has eloquently assessed the importance of books for the polar traveller: "To travel in the Arctic is to wait.... A traveler may be stranded for days in the vicinity of a small airport, tethered there by the promise of a plane's momentary arrival or by the simple tyranny of plans. In these circumstances I frequently read journals of exploration, especially those dealing with regions I was in. I read in part to understand human presence in a landscape so emphatically devoid of human life ... The land, whatever its attributes, is made to fill a certain role, often that of an adversary, the bete noire of one's dreams..."²⁴

For some, even more painful than the rigours of the land itself is the fear of having no reading whatsoever. Our concluding quotation comes from the journal of George Tyson, following his astounding trip on an ice-floe after the abandonment of *Polaris*: "Jan 29 [1873]. Oh it is depressing in the extreme to sit crouched up all day, with nothing to do but try and keep from freezing! ... No books either, no Bible, no Prayer-book, no magazines or newspapers – not even a Harper's Weekly – was saved by any one ... *It is now one hundred and seven days since I have seen printed words!* What a treat a bundle of old newspapers would be! All the world over, I suppose some people are wasting and destroying what would make others feel rich indeed."²⁵

It was only two years later that a satirical cartoon on the craze for polar literature appeared in the British magazine, *Fun*, (June 12, 1875, p. 244), amply demonstrating Tyson's point about careless readers (Figure 2):

Young Lady: "What is Lazy Lawrence reading?"

Arctic Explorations! Not much in your line, surely!"

Lazy Lawrence: "Oh isn't it? What can be pleasanter in this weather than to lie out here with a cigar and a "Cobbler," and fancy yourself one of an icebound and devoted band."²⁶

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Alone, a classic of polar literature: Questions and answers

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Abstract. In 1938, G.P. Putnam's Sons published *Alone*, which has become a classic in polar libraries as well as in the general literature of adventure and survival. Essentially, the book is an autobiographical account of Admiral Richard E. Byrd while wintering alone in a hut in the interior of Antarctica in 1934. The gripping drama of the book is Byrd's suspicion that his stove is leaking carbon monoxide fumes. Thus, the stove that provides life-sustaining warmth is also poisoning him. In 1997, a televised docu-drama presented a far different picture of Byrd and the experience that led to *Alone*. Byrd appeared as a vain, deceitful, and publicity-driven figure, who because of his miscalculations, placed his expedition in jeopardy, especially those who risked their lives to rescue him. Byrd's papers and related collections at The Ohio State University provide answers or insights to several questions. First, how much of this sensational book is based on documentation? Second, was his rescue as serendipitous as the book claims? And finally, how much of the book was written by Byrd himself?

In 1938, G. Putnam's Sons published *Alone*, by Admiral Richard E. Byrd. Essentially, the book was an account of Byrd's survival during the second Byrd Antarctic Expedition from March to August 1934 when he wintered alone in the interior of Antarctica to make weather observations and observe meteor showers. In the process, the admiral nearly died from carbon monoxide poisoning. Reviewers at the time raved about the new book. One wrote "A great and living book, a book of importance in the lives of men ... This story in its events is a breathless and almost shattering drama, one of the most intense and moving dramas of our own or any time." Another commented: "There never was a book like it because there never was an adventure quite like it. If it took courage to survive the ordeal, it likewise took courage to tell about it. Admiral Byrd has written something more than a mere historical account of a personal

phase of polar exploration. His book is an epic of man against himself." The Times of London declared "... this is a book which may go on the shelf with Scott's."¹ Since its publication, *Alone* has stood as a classic in polar libraries as well as in the general literature of adventure and survival.

Richard Byrd was a national hero and an international figure for research and exploration in Antarctica until his death in 1957, but the years thereafter have been ones of controversy about him and his accomplishments. Byrd's claim to be the first to fly over the North Pole is more in dispute now than it was in 1926. A year later he became the third, after Charles Lindbergh, to fly from the United States to Europe but two books have questioned his ability as a navigator and as leader of the expedition.² Byrd's achievements in his first expedition (1928-30) when he flew across the South Pole have never been questioned. But the last study of this expedition, the first to use Byrd's papers at The Ohio State University, portrayed him as an insecure leader who demanded absolute loyalty, took credit for the accomplishments of others, and was as much worried about his public image as he was about scientific advancement.³ Thus, it was only a matter of time before a less than interpretation of Byrd and his experience as presented in *Alone*, should appear.

The purpose of this presentation is to assess the historical records and answer the following questions: Why did Byrd decide to stay alone? Was Byrd actually ill? Was the rescue effort as serendipitous as stated in the book? Did Byrd actually write the book? As is often the case in history, documents are sometimes not sufficient to reach definitive conclusions but the Papers of Admiral Byrd and related collections at The Ohio State University do provide some answers.

Byrd's story vs. the docu-drama. Fundamentally, *Alone* is a tale of heroism. According to the book, one of the objectives of Admiral Byrd's second expedition to Antarctica (1933 to 1935) was to establish a weather station in the interior of Antarctica and for the first time to systematically create a meteorological record during the winter. When logistical difficulties prevented the transportation of enough supplies for three people, Byrd chose to go himself rather than put any member of his expedition at risk. Before leaving, Byrd instructed

his staff not to attempt a rescue during the Antarctic winter. Within two months, the Admiral became ill from carbon monoxide poisoning, which he attributed to a faulty stove. Part of the drama of *Alone* is that the very source of life, heat from the stove, was also killing him slowly by gradual poisoning. In this dilemma, Byrd did not call for a rescue effort because he feared that a journey through the Antarctic night and over hidden crevasses was too dangerous. His rescue happened serendipitously when his men sensed problems in Byrd's failure to keep scheduled communications by radio and proposed expedition to observe meteor showers. That expedition was the opportunity to rescue Byrd.

In 1997 a British company produced "Richard Byrd : Alone in Antarctica," a docu-drama that appeared on public television in the United States.⁴ It recreated Byrd's shack, or Mountain House as it was called, and used a balding actor who was more than a little clumsy to portray Byrd, who had a full head of hair and had been an athlete in college. In one scene the docu-drama has Byrd contemplating suicide by eyeing a bottle of sleeping pills – which is taken from *Alone* – and confessing that his life had been a failure. In the depths of this mental depression, the actor says that he regretted having lied about the North Pole, something which is definitely not in *Alone*. Of this time, Byrd wrote in his own account:

Great waves of fear, a fear I had never known before, swept through me and settled deep within. But it wasn't the fear of suffering or even of death itself. It was a terrible anxiety over the consequences to those at home if I failed to return. I had done a damnable thing in going to Advance Base, I told myself. Also during those hours of bitterness, I saw my whole life pass in review. I realized how wrong my sense of values had been and how I had failed to see that the simple, homely, unpretentious things of life are the most important."⁵

This is hardly a confession of fraud. In the drama, Byrd was obsessed with the financial problems of the expedition and determined to return to his colleagues earlier than planned. Desperate to escape from his own folly, Byrd arranged the rescue and encouraged his rescuers to push on and put their own lives at risk for his. Thus, the hero of *Alone* became the anti-hero of "Richard Byrd: Alone in Antarctica.," a man driven by his

ego and his public image as a hero, to put his own life and the lives of other at risk to achieve publicity. As one of the consultants for the docu-drama concluded in a previous work " Byrd's Advance Base episode was an ambitious attempt to inscribe himself in history as a figure of heroic proportions, a brazen, self-seeking stunt whose primary aim was to generate drama and perpetuate the fame and celebrity he had become ..."⁶

If Byrd's ego caused the adventure at Advance Base, then the first question to ask is what the admiral expected to accomplish there. In *Alone*, Byrd emphasizes that Antarctica could be a major factor in shaping global weather patterns. For Antarctica, the meteorological records in 1933, the first year of the expedition, were practically non-existent, the work of a dozen or so expeditions. Moreover, the existing weather records related to coastal conditions; no one had ever recorded an Antarctic winter from the interior. Establishing a weather station at the foot of the Queen Maude mounts was to be a significant accomplishment to understanding weather.⁷ Advance Base was to be a pilot station; in the future, Byrd predicted that there would be a string of weather stations throughout Antarctica that would not only capture meteorological data but would provide warnings to the rest of the world about impending storms and changes in climate.

Byrd's papers point to another objective for Advance Base. It was to be one of a menu of dramatic offerings of the expedition that would attract and sustain the attention of the public. As a privately funded expedition, Byrd had a significant concern for relations with the news media and drew financial support from newspapers, film, and for the first time radio. A contract with Columbia Broadcasting System (CBS) provided Byrd the sum of \$100,000 for radio broadcasts from his base at Little America to Argentina, where it was relayed to New York City. CBS sold commercials to General Foods, the maker of Grape Nuts Cereals, as the financial sponsor of the arrangement. Thus, listeners in distant parts of the United States could hear news from Antarctica, news that was carefully scripted by Charles Murphy, a professional writer and a publicist under contract to Byrd and narrated by popular CBS broadcaster Harry Von Zell.

Byrd's need for dramatic accomplishments of the expedition was apparent in the planning of



the expedition. In 1932 when Commander Lincoln Ellsworth announced that he and former Byrd pilot Bernt Balchen were planning the first trans-continental flight across Antarctica Byrd tried to change Ellsworth's mind. One letter complained that if Ellsworth did the last spectacular thing in Antarctica by flying from coast to coast, it would not be possible for Byrd to undertake his private expedition without fear of bankruptcy. After all, the most dramatic achievement of Byrd's first expedition had been the flight across the South Pole; he needed another spectacular event to finance the second expedition.⁸

From the beginning, Byrd expected that the weather station would figure prominently in the newsworthy stories from Antarctica. Particularly noteworthy as evidence is Byrd's correspondence with Emanuel Cohen of Paramount. In 1928 Paramount had supplied a camera crew for Byrd's expedition, which resulted in the film "With Byrd at the South Pole." In June of 1933, however, Byrd's negotiations with Paramount were in a difficult state. In the Great Depression, Paramount was fearful of investing capital for at least two years in Byrd's expedition, especially if it would be little more than a re-make of the first one. Byrd assured Cohen that the second expedition would face more ice, do more flying, and create more news than the first expedition. The admiral asked Cohen to keep this letter strictly confidential and said "The point that I want to make clear with you is that I will go to infinite pains to get the proper kind of a movie. It is one of the ways that I can keep from being a bankrupt. ... You will find plenty of drama this time...from the fact that two men will spend the winter night at the foot of the mountains only 300 miles from the Pole, where the temperature will be, as I have said, as low as 90 degrees [below zero]." This weather station had become the dramatic equivalent of the trans-continental flight undertaken by Ellsworth and Paramount committed itself to doing a movie.⁹

Byrd's letter to Cohen is also evidence of how fluid Byrd's plans were. As stated in *Alone* and in the expeditionary history *Discovery* published in 1935, the plan was for an advanced weather base to house three men – preferably two meteorologists and a radio man – for one winter.¹⁰ In *Alone*, published in 1938, Byrd stated that "...I resolved from the beginning not to have Advance Base a

two-man project."¹¹ He feared that two men staying so many months in confined quarters could result in disharmony, as one became bored and dangerously annoyed with the other. A third person, Byrd believed, would provide more interest for the others and could have a balancing and soothing impact.

At this point, one can only speculate why Byrd told Paramount that two men were to stay in Advance Base when in *Alone* he maintained that two was never in consideration. At this time while the expedition was still in the United States, Byrd was gathering supplies for three people to occupy the base. It is possible that Byrd had in mind when writing Cohen that only one person would occupy the hut. One can imagine that if Byrd had told Cohen that the head of the expedition – and the star of the movie – would be away from the base and placing himself in peril, Paramount would be even more fearful of investing in the movie.

In 1990, Norman Vaughn's book, *With Byrd at the Bottom of the World* appeared. Although the book is mostly about Vaughn's participation as a member of Byrd's first expedition, a concluding chapter states that Byrd invited Vaughn to join the second expedition and to winter with Byrd at Advance Base. Vaughn claimed that in the spring of 1933 Byrd told him that he was revising the plans and would stay alone at Advanced Base. Vaughn concluded that Byrd's had decided to have all the publicity for himself by being alone.¹²

Vaughn's account, however, seems unreliable for several reasons. First, he presented the Advance Base as a place for four men, not three, a statement that is not supported by any other evidence. Second, Vaughn claimed that he was involved in gathering supplies for Advance Base. Actually, Paul Siple had that responsibility. In Siple's account, there is no reference to Vaughn.¹³ Finally, it seems doubtful that Byrd would reveal his secret plan to Vaughn. If Byrd confessed to Vaughn his plan for a solitary stay, his reasons for doing so are unclear but the consequences were: Vaughn withdrew from the expedition. In all likelihood, if Byrd had planned from the beginning to be alone in the Antarctic winter, he kept it to himself. Even Byrd's wife, with whom Byrd confided much, appeared to be unprepared for Byrd's solitary vigil. Before leaving for the interior, the Admiral sent her a coded radiogram and assured her

“... if you knew how I had planned the whole thing, I don’t believe you would be worried. ... I swear to you that I will be more careful than I have ever been, as careful as it is humanly possible. It is my faith in your poise and great strength that makes it possible for me to do this thing.”¹⁴

None of this evidence is conclusive that Byrd had planned from the beginning that the weather station would have only one occupant. It is possible that the Admiral kept both options – a solitary experience or a group of three – open until the last moment. Even Vaughn admits that the gathering of supplies for more than one continued. Finally, in Antarctica severe weather conditions that delayed landing and unloading, an accident that disabled one of the airplanes, and problems with the tractors and dogs crossing a heavily crevassed area forced Byrd to make two important changes. The site of the weather station became 120 miles from the coast rather than further inland as planned. Second, Byrd decided that given the severity of weather and land conditions, the station should be staffed by one person rather than attempt to move supplies for three.

While the decision to staff the base with one person may have been the logical result of the physical circumstances of the expedition, the decision for Byrd himself to be the sole occupant stirred great controversy. The Admiral made the decision quickly, without consultation, and he did not call for a volunteer. In *Alone*, Byrd explained that he longed for the adventure and the privacy, no mean consideration in the cramped quarters of an Antarctic expedition, and that he had full confidence in his staff. Furthermore, Byrd did not want to put any of his men deliberately in a dangerous situation that he himself would not dare to face.¹⁵ That decision, however, brought much criticism, especially from Byrd’s financial supporters when they learned of it after Byrd had already reached Advance Base.

Critics could not understand why the leader of the expedition would be away for months and place himself in such a location that a rescue would be very difficult and perhaps impossible. As not only the leader but also the owner of this private expedition, investors had reason to fear that the expedition would fail financially if Byrd, the public hero, was not able to lecture, give personal appearances, provide stories, and do what

was necessary to pay debts after exploration. Byrd’s own papers contain many expressions of concern, especially from the *National Geographic Society*, the *New York Times*, and *General Foods*.¹⁶

Personal motivation is the most difficult to document and most subject to interpretation. Byrd’s papers at The Ohio State University do not contain a diary for this period. So, one can only speculate if the admiral was seeking to draw publicity to himself personally rather than to the expedition, or was this really a desire to seek privacy, a personal adventure, and prevent others from falling into harm’s way. Certainly, the motivation could have been all of the above. However, it is also important to remember that in Byrd’s personal history there had been previous acts of self-sacrifice for others. During the first expedition to Antarctica, Byrd dove into the sea to rescue a member of his crew who had fallen overboard.¹⁷ In this historical context, Byrd’s expressed concern about not putting members of his crew into physical jeopardy should be considered as a valid factor, if not the only one, in his fateful decision.

Was Byrd really ill at Advance Base? The absence of a diary for Byrd is unfortunate and even puzzling. In *Alone* are many quotes from Byrd’s own diary, and that diary may still exist because Byrd’s papers arrived from the family at OSU in 1985. We do know that previously, at least part of the collection had been in the possession of another party and did not reach OSU until 1990. One can only speculate about whether the diary or other materials remain in the hands of others.

One researcher has questioned whether Byrd was really seriously ill. In this context, the rescue of Byrd grew from a desire to have a great story for the media and to satisfy Byrd’s own desire to escape the monotony of his solitary confinement and return to Little America and be more in touch with the expeditionary plans and its finances.¹⁸ The producers of the docu-drama included several scenes in which Byrd was greatly distressed by the state of the stock market and the bills of the expedition. In their interpretation, the carbon-monoxide story gave the expedition a dramatic boost, made Byrd a suffering hero, and provided an excuse to return early.

Historical evidence exists to prove that Byrd was, in fact, seriously ill and that the effects of



that illness lingered for years thereafter. One of the missions of Advance Base was to observe meteor showers. In Byrd's papers, there is a journal of his observations. On June 4, Byrd recorded an entry that accounted for five days. To explain the missed days of observations, Byrd wrote in the margin "My physical condition has been quite desperate."¹⁹ This record coincides in dates with the chapter in *Alone*, which bears the title "Despair" in which Byrd admitted that he did little in order to conserve his energy. "All that I could reasonably hope for was to prolong my existence for a few days by hoarding my remaining resources; by doing the necessary things very slowly and with great deliberation. So long as he did that and maintained the right frame of mind, even a very ill man should be able to last a time."²⁰

Another document also proves that Byrd's condition was desperate. In *Alone*, the Admiral reported that he wrote messages to his family to be found in the likelihood of his death and declared that he had a better appreciation of the doomed Robert Falcon's Scott when he wrote "For God's sake, look after our people."²¹ Although the original letters are not in the collection, there is a typescript copy of the letters. The one to Byrd's children focuses almost entirely upon their mother: "It is my honest opinion that there has never in this world existed a fine, more intelligent or more beautiful character than your darling Mommie. Now I have known her a very long time and most intimately and so I know well what I am telling you...So because of these things, my last wish of you is to be gentle, sweet, sympathetic, understanding and loving with her....Give her, my children, the great love she deserves and forgive me for my expedition."²²

Of course, one can question the authenticity of this letter of despair and resignation because the original has never been found. Another letter written at a different time but similar circumstance parallels the Advance Base letter remarkably. In 1926, as Byrd prepared to leave for the North Pole, he wrote a letter that was not to be opened unless he died during the expedition and then to be read to his son, Richard Byrd Jr. Like the letters at Advance Base, the style and focus of this letter is almost entirely filled with praise and states "My last words to you my boy are to beg you to consecrate your life to two things – first to

understand, cherish and protect your mother and secondly to emulate her in all matters. Model yourself as much as you can after her for she is the finest person in the world."²³ The similarities between the letters are so striking that they must have been written by Byrd and at a time of extreme uncertainty about life and death.

Finally, there is evidence that not only was Byrd very ill at Advance Base but that the effects of that illness lingered for years. In 1938 Byrd wrote to Thomas Poulter, the man who led the rescue team, that his health still suffered "... my cardiograph shows that even though three and half years have elapsed since you reached me at Advance Base, I am only two thirds of the way back to normal."²⁴

Was the rescue accidental? In *Alone*, the rescue is portrayed as serendipitous. On June 14 Dr. Poulter requested to undertake a journey into the interior to observe meteor showers.²⁵ On June 21st Byrd encouraged the trip to Advance Base only if in Poulter's view it could be undertaken without substantial risk. The Admiral, if the book is correct, did not explicitly tell anyone that he was in need of rescue because he did not wish to put a rescue party at risk by crossing crevasses through the constant darkness of Antarctica and in the extreme cold of winter. However, Byrd also made it clear to Poulter that the trip could enable the Admiral to return from Advance Base early because of the state of finances of the expedition and the desire to return to Little America to begin the field operations earlier than planned. There was to be no hint of personal danger at Advance Base. As Byrd phrased it in *Alone*, "When I talked to Little America..., I would give Poulter a carefully-phrased directive, urging him to hasten preparations for the early journey, and yet phrased so carefully that he would have no reason to read any personal urgency into it. It had to be handled that way, or not at all."²⁶ In Byrd's own mind, his encouragement to Poulter was to create the opportunity for a rescue.

Essentially, the answer to this question requires answers to two other questions. Who knew what and when did they know it? For both, there are answers in the extensive documentation of the papers of Admiral Richard Byrd. Evidence exists to show that others knew about Byrd's difficulty with carbon monoxide poisoning well before the

rescue attempt in August. The *New York Times* on June 24, 1934 carried the story "Byrd Made Dizzy By engine Fumes – Admiral, Alone at Antarctic Camp, Escapes Poisoning from Carbon Monoxide."²⁷ On June 25, Byrd received a message from John McNeil "relieved to know you recovered quickly from Carbon Monoxide fumes..."²⁸ On June 28, Charlie Murphy reported to Mrs. Byrd that her husband had been through a "Punishing ordeal" and that tractors would be sent to advance base late in August to bring Dick back. "And on July 1, 1934, Murphy relayed to Byrd's wife: "Following today from advance Base quote have learned how to handle heater and engine am very careful no risk now from fumes. All's Well."²⁹ Clearly, others knew about Byrd's difficulty with carbon monoxide and its sources, and Byrd did not keep this a complete secret.

The extent to which Byrd's colleagues at Little America knew the scale of his suffering is less clear from the evidence. There are at least two critical items in the Papers of Admiral Richard E. Byrd. First, is the log of Charles Murphy, who was responsible for writing radio communications, the stories from Little America and who talked to Byrd at Advance Base from Little America. Despite having released the earlier story to the *New York Times*, on July 1, Murphy recorded "It is increasingly my conviction that he [Byrd] was really anxious to have this journey attempted; and I can't escape the belief that something is decidedly wrong out there." Later, in the same document Murphy confides "I cannot escape a strong uneasiness – a compelling suspicion – that something is wrong with Dick. There is no logic for it; he has never hinted it; still, it is there, arising again and again in my mind. Of course it is partly intuition, and intuition is partly supported by the subtle changes in the character of his brief contacts with us; and these changes are not so much indicated as implied."³⁰ From the lapses in communication with Byrd, Murphy surmised that something was amiss.

Confusion is apparent at Little America in the discussion of Thomas Poulter's expedition to observe meteor shows and return Byrd to his base. So intense was the debate that the group maintained minutes. Some opposed the venture, arguing that it was too dangerous and should be postponed until later in the season. Some questioned

Poulter's authority to command an expedition, especially if the intent was to relieve Byrd, because the Admiral himself had warned them before he left not to attempt a rescue. Persistently, Poulter argued in favor of the expedition and minimized the difficulties. Pete Demas, who had been with Byrd at the North Pole and during the first expedition to Antarctica also pressed for the expedition "Now, due to the fact that Admiral Byrd is fed up with his stay out there, which has proved more than he thought it would be, he is making a mild suggestion that he would like to get back to Little America, and he hopes we have intelligence enough to act and bring him back, and at the same time serve scientific work to be done which is of the utmost value to our scientific expedition."³¹

Another member, Quinn Blackburn, challenged Murphy and Poulter to define the trip as either one motivated by science or by Byrd's desire to return to Little America. Murphy replied coyly that the trip was for science but that Admiral Byrd "is anxious to get back." Blackburn asked bluntly "Then why not say the reason is to bring back Admiral Byrd". Murphy replied "Because I did not want to put Admiral Byrd in the position of having to ask men to come for him. He is leader of the expedition and is entitled to the same protection as other men. I don't pretend to know the man but I can see certain facts in the situation. As I told you last night, the report that he is in distress is without basis; nevertheless he wants to come back if he did not stress it now. It would be all very well for a leader to get out there and say "I want you to come out and get me." He has left it to us." To which Demas added "Just what Murphy brought out is to bring out the point I thought everyone here would feel it was not necessary to bring out. We all have intelligence. Why we are on the staff is because we have some background. Practically every man here who was on the last expedition is on it and they all know that Admiral Byrd would not ask any man to risk his life; and yet when he thought your life was in danger, he came out for you." Clearly, the men knew that the expedition was to return with Byrd and that Byrd wanted the trip to take place as soon as possible.³²

Heroic efforts to reach Byrd followed. From mid July to August 2, the first effort resulted in failure, when the team lost sight of the flags that marked the trail. Another effort took place from August 4



through 6 but failed because of mechanical difficulty, On August 9 the diary of Alton Lindsey, a member of the expedition, noted "The Admiral Calls for Help. Message radioed by the Admiral pleading, 'Come at once!' He gives the impression of being in dire straits, getting weaker, can't crank (the generator) for more than a word or two at a time, in the contacts."³³ Finally, Poulter, the loyal Demas, and Bud Waite, radio operator, struggled 74 hours at -55 F, to reach Byrd on August 11. Lindsey's diary for August 11 reported that Byrd had been reached: "The Admiral has been too weak to take much care of himself since July and has let his hair & beard grow. He staggered out of the hatch and awaited them. Until he recuperates, Poulter is going to stay there, meanwhile observing meteors ... Byrd reports anxiety over CO poisoning caused him to keep the shack too cold."³⁴ Apparently, Byrd had saved himself from the carbon monoxide poisoning, which the radiograms indicated he was managing, by ventilating the hut so well that it reduced the temperatures to dangerously low points. Curiously, however, the first message from rescuer Poulter to Little America states "The fumes got REB about June 1. He didn't send for help because he didn't think it was the thing to do."³⁵ Years later, when writing *Alone*, Byrd finally admitted to Charlie Murphy that he had, in fact, been rescued: "I had succeeded in making myself think that I was not (in a sense) rescued. Now that I go over the facts carefully and analyze them, I have concluded that I fooled myself, but I was, nevertheless, honest about it in that I did not realize that I was doing it. I subconsciously made the facts fit what I wanted to believe. In this book, I am putting down the facts whatever they show."³⁶

Did Byrd write Alone? The absence of the diary from which Byrd in *Alone* quotes frequently and the responsibilities and abilities of Charlie Murphie as the publicist of the expedition raise doubts about how much of *Alone* originated with Byrd and how much was the imagination of Murphy. In their financial arrangements, Murphy received compensation for *Alone*, even as he had for previous works that appeared as Byrd's own, including *Skyward*, *Struggle*, and *Little America*.

Numerous letters between Murphy and Byrd prove that while Murphy wrote *Alone*, he began

with Byrd's original diary and consulted the Admiral frequently. For example, in August of 1938 Byrd tells Murphy "I, too, think, and have thought from the beginning, that is a matter of taste as to whether or not we have this dairy written to Mrs. Byrd and the children. You see the diary is crammed full of statements directed to Marie (and less frequently the youngsters). I have deleted nine-tenths of it...It is somewhat like the matter of publishing the letter I wrote when I was so ill. It would seem to be bad taste - undressing in public or something of the kind - to publish them. It would have been different if I had not survived." In addition, Byrd debates with Murphy how much of the work should include Byrd's philosophical observations, which Murphy claimed took away from the drama of the book: "I speak now of your statement that what I said about time and space, etc. slows up the book. Of course, it slows up the book. I realized it when I sent it on to you. However, I don't see why there could not be a few of my remarks about these matters included. Some few of the things I said might be of interest to a great many people."³⁷ Another letter, this time from Murphy to Byrd, makes it clear that there was an original manuscript and that Byrd was the author: "To make sure that I wasn't doing you an injustice, I again read your Mss. last night. Some of it, as I said, is very good. Nearly everything necessary is in the Mss., but it is in solution still. To make a book you must precipitate it out. The diary form is to blame for this. You jump from one thing to another. But this, you may say, is the way the diary was. The reader, though, is entitled to something better. And to hold and impress him you must give him something better. You must organize your ideas and impressions, giving him the facts and impressions in order, and building always toward a dramatic and coherent pattern."³⁸ Clearly Murphy and Byrd were a team in writing *Alone* but the original work did begin with Byrd, even though the original diary of Byrd's at Advance Base has never been found.

Conclusions. The evidence in Byrd's own papers and in related collections is sufficient to justify four conclusions. First, that his experience of suffering and survival at Advance Base in 1934 was genuine, rather than a story to develop drama and enhance the commercial value of the expedition.

Second, that the motivation to winter by himself at Advance Base remains open to scrutiny and interpretation. A solitary adventure may have been thought of at the very beginning of the planning in order to achieve maximum publicity for Byrd and the expedition. On the other hand, it could also have been only one of several possibilities, with circumstances dictating the final decision. Third, the rescue itself was not serendipitous but resulted from a plea for help, however thinly disguised by Byrd himself. Finally, the book *Alone* was a collaborative effort that did, in fact, begin with Byrd and his diary, which has yet to be found.

Notes

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3. See Rodgers, Eugene. 1990. *Beyond the Barrier: The Story of Byrd's First Expedition to Antarctica*. Annapolis: Naval Institute Press.
4. This docudrama was broadcast on PBS in the United States as part of a series entitled *The Adventurers*.
5. Byrd, Richard E. 1938. *Alone*. New York: G.P. Putnam's Sons. p. 178.
6. Matuoizzi, Robert. *Troubled Icon: Richard Byrd and Polar Exploration as Media Event*. Columbus: The Ohio State University (MA Thesis). p. 44.
7. Byrd. *Alone*. pp. 12-13.
8. Matuoizzi, p. 15; Byrd to Mr. Lincoln Ellsworth, May 11, 1932, Byrd Papers File #6345.
9. Richard E. Byrd to Emanuel Cohen, June 1, 1933, Byrd Papers, File #2673. The Ohio State University Archives.
10. Richard E. Byrd. 1935. *Discovery: The Story of The Second Byrd Antarctic Expedition*. New York: G.P. Putnam's Sons. p. 155
11. *Alone*, p. 16
12. Vaughn, Norman. 1990. *With Byrd at the Bottom of the World*. New York: Stackpole Books, pp. 172-177.
13. Siple, Paul. 1936. *From Scout to Explorer: Back with Byrd in the Antarctic*. New York: G.P. Putnam's Son's, p. 59.
14. Radiogram, Richard E. Byrd to Marie Ames Byrd, undated (1934), Byrd Papers, File 5452.
15. *Alone*, pp. 31-32
16. Matuoizzi, pp. 37-42.
17. Rodgers, Eugene. 1990. *Beyond the Barrier: The Story of Byrd's First Expedition to Antarctica*. Annapolis: Naval Institute Press, p. 78.
18. Matuoizzi, pp. 51-54
19. Notebook, May 30 to June 4, 1934, Byrd Papers, File 3685
20. *Alone*, pp. 173-174.
21. *Alone*, pp. 181-182.
22. "Admiral Byrd's Letter to His Children," Byrd Papers, File 5449.
23. Richard Byrd to Richard Byrd Jr., April 28, 1926, Byrd Papers, Accession 19961, Box 1, File 6.
24. Richard Byrd to Thomas Poulter, January 12, 1938, Byrd Papers, File 6698.
25. *Alone*, pp. 206-207, 218-219
26. *Alone*, p. 217
27. Matuoizzi, pp. 56-57.
28. Matuoizzi, p. 53; John McNeil to Chas Murphy, 25 June 1934, Byrd Papers, File 6865.
29. Matuoizzi, p. 53; Murphy to Mrs. R.E. Byrd, June 28, 1934, and Murphy to Mrs. R.E. Byrd, 1 July 1934, Byrd Papers, File 6875.
30. Transcript from diary of Charles Murphy, July 1, 1934, Byrd Papers, File 6499.
31. Minutes of a meeting of the staff, July 15, 1934, Byrd Papers, File 4597.
32. *Ibid*, p. 4.
33. Papers of Alton Lindsey, Acc. 199815, Folder 14, The Ohio State University Archives.
34. *Ibid*.
35. Papers of Amory Bud Waite, Accession 19851, box 1, The Ohio State University Archives.
36. Richard E. Byrd to Charles Murphy, August 7, 1938, File 6672, Byrd Papers.
37. Richard E. Byrd to Charles Murphy, August 10, 1938, File 6672, Byrd Papers.
38. Charles Murphy to Richard E. Byrd, July 1, 1938, File 6672, Byrd Papers.



Session 10: Polar publishing

Polar Publishing

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David Walton, editor in chief of *Antarctic Science*, and a scientist at the British Antarctic Survey in Cambridge, England, published a stimulating editorial in *Antarctic Science* (vol.13, p.225, 2001) entitled "Publishing and the Scientific Community" [as Appendix] which precipitated his invitation to discuss publishing during the Polar Libraries Colloquy. What follows is an amalgam of Walton's presentation and the ensuing discussion with the audience.

Directing his comments to scientific publishing, Walton observed how control is concentrated in a small number of multinational companies such as Elsevier and Springer, but that such a concentration is not necessarily good for the scientific community. Scientific publication requires authors, reviewers, as well as purchasers and subscribers regardless of who does the publishing. As the large publishers gain more control of the publications, they can increase the prices to the exclusion of many previous individuals and institutions. Thus those who produce the original material and those who use the final publication may have their choice of a publication route limited by commercial pressures exerted by monopoly companies.

Scientific publication is becoming more fragmented, in part due to increased specialization. With greater focus, the market for these publications is generally smaller, so subscription costs are higher. For commercial houses, the overhead and profits become a part of the consumer's price and a dominant position can lead to massive increases in journal prices to increase profitability for the publisher. Learned societies use different pricing systems and, since they have a confirmed society readership and rely upon unpaid volunteers for much of the editing work their journals are generally much cheaper. Thus there is increasing polarisation between the learned societies and commercial publishers. One way forward is that taken by *Antarctic Science*. It is now owned by a charitable

company, and run by an independent board for the benefit of the science community. This way the subscription costs can be kept down and the profits re-invested in science.

This publishing tradition of volunteer editors and reviewers is not fully embraced by all scientists. As in all areas of life there are a significant number of "free-loaders" who refuse to contribute to the public good but expect the system to service their manuscripts. Editors obviously have difficulty vetting articles when requests to review are unmet, and there is a growing problem of getting good referees who will undertake the task in a reasonable time. Whereas editing an academic journal used to be considered an honor for the individual and his/her institution, these days this is seen to be a chore that undermines the measured output of a Department in the assessment exercises and should thus be discouraged. To ensure this happens many academic institutions now seldom provide support or recognition for such efforts. Yet without the journals there is no output, so in this activity as well the requirements of the community at large are ignored in efforts to meet bureaucratically devised output standards. What have scientists done to attempt to redress this balance? If results are anything to go by far too little has been done so far.

The hierarchy of journals plays a significant role in what journals are purchased. The higher recognition journals with high citation indices, like *Science* and *Nature*, publish primarily papers for ideas, and often with little data. Generally most material needs to be published in a more complete form, with data, in the disciplinary journals, but again the value attached to the citation index rather than the best audience for the paper is likely to influence the choice for many hard pressed scientists whose career now depends on meeting output measures of dubious value.

Publishing is being changed by technology. Whereas technology has generally improved publishing, it is also altering the published materials. In a recent move by AGU it abolished the page numbers for articles, giving them only digital optical identifiers. Many users are completely unpre-

pared for this sudden change and have objected strenuously. Increasingly journals are turning to parallel electronic and paper delivery whilst new electronic only journals are starting up every year. Whilst there would appear initially to be large savings in electronic only the long term archival future of the material seems not to have been addressed.

These electronic services are growing unevenly. Whereas manuscript submission, editing, review and production are much more efficient, using for instance the new Web-based packages to monitor and control manuscript progress, the cash costs of dealing with large numbers of unsuccessful papers by this system can be high. In addition the amount of unvetted material on the Web is proliferating rapidly leading to difficulties in judging the quality of some of the scientific information available.

Many of these difficulties are not new and others have been developing slowly over recent years. The library community has not been able to make enough common cause with the scholars so far to influence the direction and costs but perhaps new initiatives in Europe and North America have the potential to take on the major publishers and limit at least some of the damage they are causing. Much of the blame for the present situation though must rest with the science community who have failed to rally themselves and their societies against these damaging trends. Indeed, the learned societies themselves could have ameliorated the problem by publishing more journals themselves instead of leaving it to market forces. Walton suggested there was still time to act but this would only slow rather than eliminate the changes.

Appendix: Publishing and the Scientific Community

Publishing is changing rapidly, as is the management of much of the scientific community worldwide. Unfortunately there are features of both that should give considerable cause for alarm if one cares to look forward a few years. Let's begin with the remarkable consolidation of ownership in scientific publishing culminating in the latest move - the acquisition of Harcourt by Reed Elsevier - which has been investigated by the Competition

Commission in the UK as being potentially against the public interest. Those who buy Reed Elsevier journals at present will know that their subscription rates are some of the highest in the world. It is not obvious that scientists will see any benefit from this takeover. Indeed, what will happen to the provision of information to working scientists as library budgets decline everywhere? Is increasingly expensive equipment for experimental use really more important than the literature? Governments will say that the Web will meet scientists needs to which my reply is that much of its content is uncontrolled rubbish and it certainly does not replace the quality controlled material available in the journals. So our first conclusion for the future could be that consolidation of ownership of journals is bad for science and unless, there is a significant change in library funding, many commercial journals are likely to price themselves out of the general market, leaving only those published by learned societies or charities at an affordable level. Bad news.

A second worrying trend is the increasing difficulty all of us are finding in making time to do our bit as reviewers. Nobody gets any credit for reviewing papers - or even these days for being an unpaid editor - yet both are critical to continuing the structure of peer review that determines acceptability of papers and ultimately pay, promotion, grants and prestige in the science community. How is it that our political masters seem to think we should do all this work in our spare time since by modern management definitions it is "unproductive", or "fails to generate income" or "is not a useful output indicator of innovation". Do any of these people understand how science works? More to the point do they care? More bad news.

Thirdly, just how many times do we need to be told that electronic publishing will shortly supplant the printed versions of journals and books? Technological advances will make it easier and more convenient to use and the development of "electronic paper", allowing you to read the journal in bed or on the plane, is not that far away. The establishment of electronic archives for complete runs of key journals is already well advanced for some subjects. And yet I worry that future researchers, relying entirely on material identified by keyword searches, will never see the ma-



terial that allows the interdisciplinary idea to develop, will be forever locked into a narrow speciality as browsing will no longer be as easy.

These are not the only trends that we should be concerned about but, since publications are the output indicator most highly valued by the political system and the basis on which science itself develops, they are probably the principal determinants of our future opportunities. As a communi

ty we seem so far to have made little impact in convincing others that scientific information should be cheaply and widely available, that reviewing and editing are as essential to the scientific process as writing papers, and that electronic publishing is not a universal panacea. Continuing to sit on our hands will leave our fate in their hands – those with different agendas to scientists.

David W.H. Walton

Session 11: International cooperation

Bi-national electronic initiatives: the Stefansson experience

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Abstract. Two electronic projects relying to a considerable extent on digital presentation have been jointly created by two institutions separated by a large part of the Atlantic Ocean. "The Friendly Arctic" is a travelling exhibit taking advantage of multi-media to visually present unique hand-tinted lantern slides used by Arctic explorer Vilhjálmur Stefansson in his lectures. These images, provided by the Stefansson Collection at Dartmouth College Library, underline and affirm Stefansson's positive and constructive view of the North and its indigenous people, a view which is relevant to contemporary discourse and policy in the Arctic. "Encyclopedia Arctica" is an electronic publication of the encyclopedia created by Stefansson nearly 50 years ago and never published. The electronic publication, scheduled for later this year, will include selected essays from the original manuscript as well as articles written by Stef and others about the project. This presentation discusses the mutual advantages and value of such joint projects as these as well as some of the technical problems encountered.

Introduction. For the last four years, the Stefansson Arctic Institute, a research institute initiated by the Ministry of the Environment of Iceland has formulated and maintained a series of close links with Dartmouth College in the United States, because of the College's Institute of Arctic Studies and the Stefansson Collection on Polar Exploration, a part of the Dartmouth College Library. As a result of the mutual interests of these two organizations, several joint initiatives have been attempted. What follows is a brief description of each institution, a discussion of two of our initiatives, and concluding remarks on some of the issues that arose during the development of these initiatives.

As this paper represents joint, bi-national projects, it is only fitting that its preparation be a joint effort. The portions of the paper that treat the work of the Stefansson Institute in Akureyri and the exhibition entitled *The Friendly Arctic* were written by Niels Einarsson; the portions relating to Dartmouth College and the *Encyclopedia Arctica* were written by Phil Cronenwett.

The Stefansson Institute. The Stefansson Arctic Institute (SAI) was established in 1998, operating under the auspices of the Icelandic Ministry for the Environment. The role of the Institute is to:

- promote sustainable development in the circumpolar north and strengthen Icelandic participation in this endeavor,
- facilitate and coordinate Arctic research in Iceland,
- be a forum of cooperation with regards to multidisciplinary research and international events and projects,
- collect and disseminate research material and information on circumpolar issues,
- provide facilities for scholars pursuing research relevant to SAI's agenda, and
- advise the government on northern issues.

A number of projects and activities underway at the Institute deserve mentioning. The Human Dimensions of Arctic Environments <www.the-arctic.is> is a web-based information project concerned with Arctic cultures and environments, with a broad comparative focus on critical issues, problems and opportunities which face the peoples of the circumpolar North today. Launched by SAI in November 2000 with funding from the European Commission, the project involves cooperation with the Arctic Centre in Rovaniemi, Scott Polar Research Institute in Cambridge, the Institute for Arctic Studies and the Stefansson Collection at Dartmouth College, the University of Iceland Institute of Anthropology, and the University of Akureyri.

Designed to meet the needs of northern peoples as they face the challenges of a rapidly globalizing



world, the University of the Arctic has begun to make important contributions to higher education in the emerging circumpolar region. The Stefansson Arctic Institute and the University of Akureyri share a seat in the Council of the University of the Arctic, and participate in developing the University's Bachelor of Circumpolar Studies Program.

The Northern Research Forum (NRF) <www.nrf.is> provides a platform for effective, policy-relevant discussion and the sharing of research on northern issues. Meetings are held biennially with the participation of a wide variety of scientists, policy makers and representatives of other stakeholders. The first NRF was held in Akureyri in November 2000. The second NRF will take place in Veliky Novgorod, NW Russia in September 2002. The secretariat for the NRF is shared by the Stefansson Arctic Institute and the University of Akureyri.

SAI holds the secretariat for the Circumpolar Agricultural Association, a non-governmental organization concerned with northern agricultural science, practice and policy. The 4th Circumpolar Agricultural Conference was held in Akureyri in August 2001, organized by SAI and the Icelandic Agricultural Research Institute <www.svs.is/caa>.

SAI is the Icelandic coordination office for the North Atlantic Biocultural Organization <www.geo.ed.ac.uk/nabo/home.html>. NABO is a non-governmental regional research co-operative with over 450 members in 14 countries. NABO includes 28 major northern research centers in North America, and northern Europe.

SAI now also hosts the secretariat for the State of Sustainable Human Development in the Arctic Report, an international initiative under the auspices of the Arctic Council. Also called the Arctic Human Development Report, the principal product of this project will be a scientifically-based overview and assessment written for the non-specialist, highlighting issues of particular concern for Arctic livelihoods, human well-being and community viability. This will be the first comprehensive assessment of human conditions in the entire circumpolar region, with the aim of providing an instrument in assessing progress toward sustainable human development, a tool to educate the public, and a handbook for policy makers engaged in international cooperation in the Arctic. As a baseline, the report will not only identify

problems encountered in the North today but also lift out success stories and processes to be studied and adapted as fuel for building human and social capacity and enhancing community viability across the region. Circumpolar international initiatives and networks in which SAI participates include the International Arctic Science Committee, the Nordic Arctic Research Programme, the Nordic Polar Group, and the University of the Arctic.

The Stefansson Arctic Institute is located in Akureyri, Iceland's Capital of the North, which is a growing center of Arctic activities and events. Two of the Arctic Council's secretariats are located in Akureyri – CAFF (Conservation of Arctic Flora and Fauna) and PAME (Protection of the Arctic Marine Environments) – and the town of 15,000 people is gaining a reputation for hosting Arctic-related workshops, conferences, and other events. Such activities are expected to grow during Iceland's chair of the Arctic Council, 2002-2004.

The staff at the Stefansson Arctic Institute includes scientists who are actively engaged in international research projects dealing with marine mammal use and conservation, sustainable land use and environmental change, and traditional ecological knowledge systems. SAI has enjoyed, and further welcomes, visits by scholars to work and present on their research.

The Stefansson Collection. The Stefansson Collection began as the private research library of Vilhjálmur Stefansson. When Stef returned from the Canadian Arctic Expedition in 1918, he continued to write extensively about his experiences in the northern polar regions and his reputation as an authority on all things polar continued to grow. Even though Stef had access to several major libraries in New York City, where he lived for three decades, he began to acquire polar books, journals, offprints, photographs, and manuscripts (Cronenwett 1998).

The collection grew rapidly as Stef scoured bookstores throughout the United States and corresponded regularly with book dealers, other polar scholars, and friends seeking to locate materials, both rare and not-so-rare, for his growing library. The size of the collection became legendary, to the point that books were stored in cabinets under sinks in the several apartments Stef kept in Greenwich Village in New York.

During the decades of the rapid growth of the collection, Stef began to visit and lecture at Dartmouth College. In 1951, he and Evelyn decided to move permanently to Hanover and the collection was moved to Baker Library, the main library on campus that year. Evelyn was named Librarian of the Collection and remained so until 1963 when she took a leave of absence from the College.

In the first few years following Evelyn's departure, the collecting scope for materials was revised and many very important parts of the collection were dispersed. As a result, the value and importance of the collection was weakened. In the past two decades, as a result of a renewed interest in the collection, it has been completely recataloged, the manuscript collections reprocessed with new finding aids, and the photographic collections and vertical files are currently being reprocessed and stabilized with new access tools being created. These projects have been generously funded by the US Department of Education, the Gladys Kriebel Delmas Foundation, and the Evelyn Stefansson Nef Foundation.

The Friendly Arctic Project. 'The Friendly Arctic – The Vilhjálmur Stefansson Legacy and Vision Traveling Exhibit', developed as a joint project with the Dartmouth College Library, has been a most important activity of the Stefansson Arctic Institute. The exhibit features a selection of Vilhjálmur Stefansson's photographs, manuscripts and publications, excerpts from his diaries, and other texts and items.

Stefansson's photographs and notebooks affirm his positive image and constructive attitude towards the Far North and its inhabitants. They bear witness to a resourceful and energetic people, worthy of our respect, whose culture and technology successfully adapted to the natural environment. A basic principle of anthropology adhered to by Vilhjálmur, is that only by placing oneself in the situation of other people, is it possible to understand them. Such is also the spirit of *The Friendly Arctic* exhibit. While the visitor's route takes us across vast Arctic regions of North America, following Stefansson's footsteps, it is marked by the milestones of his diary entries, giving us insight into his experiences and thoughts.

Stefansson's stay in the north left a lasting impression on him, both as a person and a scholar.

The extensive experience he gained laid the foundation of a philosophy of life, which later gave rise to both admiration and disputes among his contemporaries. Vilhjálmur was a world famous man and a prolific writer. He wrote over 20 books as well as nearly 400 articles and essays on most subjects in the sphere of Arctic studies. Because of his global perspective, varied connections and versatile scholarly abilities, Vilhjálmur was to many people the very epitome of Arctic research; indeed he was sometimes honored with the title of "Mr. Arctic." His friends, however, called him Stef. He lived most of his life in Greenwich Village in New York, where he met his wife Evelyn. She worked with him in their research library, which was in its time among the world's most extensive libraries in the field of Arctic studies. In 1951 they moved, with their library, to Dartmouth College in Hanover, New Hampshire.

Stefansson lived for a time with an Inuit woman by the name of Fannie Pannigabluk who was his seamstress, travel companion, and ethnographic informant. Together they had a son named Alex Stefansson, born in 1910. According to local accounts, they were married the Inuit way. Due to different aspirations the relationship, however, did not last. Alex Stefansson's six children live in the Northwest Territories of Canada, in Inuvik and Sacks Harbor.

During the period of Vilhjálmur's stay in the northern regions of Canada and Alaska he recorded in his diaries detailed descriptions of native communities, travel, weather patterns, fauna and local features. This material provided him with an inexhaustible supply of sources for his books, articles and lectures. But within the pages of these diaries there are also to be found other little known descriptions of the author's travels across the landscape of his inmost thoughts, which may occasionally be seen in the midst of all the factual information. It is here that we meet a complex individual who carries with him his Icelandic cultural heritage and a radical political philosophy – all while struggling with loneliness and despair, affection as well as friendship and joy.

Vilhjálmur undertook his first expeditions when he was a student of anthropology at Harvard University. These were journeys to Iceland in 1904 and 1905 for the purpose of obtaining human bones for research in anthropological anatomy.



Vilhjálmur Stefansson was best known, however, for his extensive scientific expeditions into the unexplored regions of Northern Canada.

Stefansson's expeditions constitute impressive achievements, in the fields of both exploration and research, and include numerous elements of the societies and natural environment of the north. Vilhjálmur spent a total of ten winters and seven summers traveling through the northern regions. With his companions, he traveled on foot and by dog sledge, covering a distance of approximately 32,000 kilometers, often in extreme conditions. Vilhjálmur's first journey to northern Canada was in 1906-1907, when he spent the winter among the Inuit of the Mackenzie Delta. During this period he became familiar with the Inuit language and was able to gain first-hand knowledge of their culture and way of life. He wrote the book *Hunters of the Great North* as well as a number of articles about his stay with the Inuit.

Stefansson undertook another expedition to the Arctic during the years 1908 to 1912, accompanied by Canadian zoologist Rudolf M. Anderson. On this expedition Vilhjálmur was able to collect new and important anthropological evidence when he, for example, was the first anthropologist to study the culture of the Copper Inuit on Victoria Island.

In 1913, Stefansson set off on the Canadian Arctic Expedition, which lasted for five years, the longest continuous Arctic expedition to be undertaken up to that time. His main objective on this occasion was the geographical exploration of the Canadian North-West, which is now the territory of Nunavut. Among other achievements derived from this expedition was Vilhjálmur's discovery of areas in the Canadian archipelago, unknown to Europeans, namely the islands of Borden, Brock, Meighen and Lougheed. As a token of gratitude for this accomplishment, the Canadian government in 1952, named one of these islands after him. Stefansson Island lies to the north of Victoria Island. Early during the expedition the ship, *Karluk*, was trapped by ice in the Beaufort Sea and Vilhjálmur went with some men on a hunting trip to get fresh meat. During the trip a sudden storm drove the *Karluk* away from shore and in spite of much effort, Vilhjálmur was unable to get back to the ship. The *Karluk* was subsequently lost along with eleven crew members. Later, some blamed

him for having left the ship and for the tragic events which followed.

But no man is an island, and during his northern explorations Vilhjálmur had much contact and communication with the local people. Unlike contemporary heroes of the extreme north, Vilhjálmur did not travel around or across the Arctic regions; he travelled into their cultures and environments. He was often asked if he had reached the North Pole, to which he replied that he was a scientist, not a tourist.

One of Vilhjálmur Stefansson's best-known books was *The Friendly Arctic*; a title which Vilhjálmur expected would present a challenge to many of his contemporaries who did not share his approach to northern regions and their inhabitants. The cover of the book presents a man dragging a freshly killed seal, a photograph of Vilhjálmur himself. This was his favorite photograph, although it does not please present day animal protectionists. It does, however, remind us of a fundamental aspect of human adaptability in northern regions, i.e., people's right to utilize nature's resources.

The legacy of the explorer and anthropologist Vilhjálmur Stefansson is closely connected with human-environmental relations, the sustainable use of natural resources and the survival of northern communities. Perhaps his legacy is of primary importance because he has, more than anyone else, changed the image of the north from a barren eternally frozen wasteland into a region of diverse character, which deserves the attention of the international community. We live in changing times and the current focus of awareness has certainly been shifted north. This has been a rapid development, transferring the Arctic regions to a central position with regard to environmental issues, international co-operation and resource governance and use.

Stefansson was often referred to as the "Prophet of the North." An important aspect of his philosophy was that by learning from the indigenous peoples who have adapted so ingeniously to Arctic environments we would come to realize the potential of the northern regions. For this to happen, we have to open our minds, be free of prejudice and willing to learn from the indigenous inhabitants.

Vilhjálmur Stefansson's philosophy was contro-



versial and did not meet with much understanding from many of his contemporaries, who showed little appreciation of his role as an advocate for the Inuit way of life. In fact, many of the Arctic explorers took little interest in the people who lived in the far north and their cultures. Stefansson stood out with his progressive attitudes, his efforts to resist cultural and national chauvinism, and his critical view of the European cultural intrusion into the lives of the indigenous people of the north. In his lectures on the Arctic he often used Inuit society as mirror to help his American audience to reflect on their own society. Why were they not happy, in spite of all their material wealth? He claimed to know people who owned almost nothing in terms of material belongings and yet were the happiest humans he knew. Thus, Vilhjálmur Stefansson was engaged in cultural criticism long before this became fashionable.

The Icelandic Nobel Prize author Halldór Laxness was well acquainted with the works of Vilhjálmur Stefansson and indeed used his descriptions of Inuit life frequently in his writings. In an essay he wrote in 1927, he said of Vilhjálmur that "... he has perhaps one of the widest perspectives of all those who write books nowadays and the most vivid panoramic view of the multiple facets of human life...".

The Friendly Arctic exhibit started its journey at the Akureyri Art Museum in November 2000, then went to the Reykjavik Art Museum, Hafnarhusid, moved on to the New Iceland Heritage Museum, Gimli, Manitoba, then off to the neighbouring Icelandic Library, University of Manitoba, Winnipeg. It was on display at Nunatta Sunakkutaangit Museum, Iqaluit, Nunavut, in early 2002, and then voyaged to McNamara Alumni Center, University of Minnesota, for the Icelandic National League of North America Convention. It will next be opened at the Montshire Museum of Science, Norwich, Vermont, USA, 1 November-8 December 2002 in conjunction with Stefansson Memorial Lecture at Dartmouth College, delivered by Dr. Ólafur Ragnar Grímsson, President of Iceland. It will be on display in Arktikum of the Arctic Center in Rovaniemi, Finland, June to September 2003, and at the North Atlantic Cultural Center (Nordatlantisk Brygge) late 2003, or early 2004. After this, there are also proposals to have

the exhibit visit the Scandinavia House in New York.

The Encyclopedia Arctica Project. The *Encyclopedia Arctica* was a massive, comprehensive reference tool planned and created by Stef and a team of experts between 1946 and 1951. Because of the Cold War and McCarthyism in the United States, the principal funding agency for the project, the U. S. Office of Naval Research, abruptly halted funding in 1950 and, without appropriate financial support, the work was never published. Instead, it was put together in typescript and a microfilm made of the work. Use of the 21,000+ frames of microfilm was the only method of access for a half century (Cronenwett 2000).

The second joint project undertaken by the Stefansson Institute and the Stefansson Collection at Dartmouth is an attempt to publish, in electronic form, a significant portion of the *Encyclopedia Arctica* so that this remarkable resource will be available to a wider public than it is today. As the Stefansson Institute had taken the lead in conceiving, funding, planning, and producing the *Friendly Arctic* exhibition, the Stefansson Collection at Dartmouth agreed to do the same for the *Encyclopedia Arctica* publication. Planning for this project began with intensive meetings in both Akureyri and Hanover in June and November 2000 and March and April 2001. At a critical point in the planning, the Evelyn Stefansson Nef Foundation provided Dartmouth with an unrestricted grant that we determined, after consultation with Evelyn Nef, was appropriate to use as funding for this project.

Because the essays and articles in the encyclopedia were drafted more than a half-century ago, we have been hesitant to publish the entire body of material without review and consultation. As a result, we determined that a body of scholars representing the various Arctic disciplines should be gathered to assist us in our deliberations. The honorary sponsors of the project are former President of Iceland Vigdis Finnbogadóttir and Evelyn Stefansson Nef. The advisory committee consists of eleven scholars from six polar nations representing the physical and biological sciences, social sciences, and the humanities. The principal investigators, the authors of this paper, will consult with the advisory body on a regular basis.



At the outset of the project, we experimented with several methods of transferring the typescript text to electronic file. First, we scanned a large series pages to tiff and pdf format from the bound manuscript. Interesting problems were encountered when the typescript was a carbon or even a second or third carbon. In order to make the text readable, the resolution had to be such that the per-page file size was enormous. Then, too, some of the notes written by editors, including Stef himself, were not easy to read when they were in the margins. Second, we scanned files directly from the microfilm and discovered that, even though this was a generation removed from the original, we obtained better and cleaner results in both tiff and pdf formats.

Third, we ran the files through an optical character recognition filter and determined that we were getting approximately an 85% capture rate, much too poor to use to reproduce the entire encyclopedia without the use of significant resources to edit and clean up. We did determine, however, that the ocr product will provide us with remarkably complete indexing when each pdf page is superimposed on the comparable ocr page. Fourth, we gave careful consideration to re-keying all 21,000+ pages to provide the cleanest and most accessible body of information from this remarkable document. After giving this possibility careful consideration, we determined that this was not a viable alternative since much of the value of the encyclopedia was in the notes and comments in Stef's handwriting and the various layers of editorial attention given to each entry. While it is possible to recreate all of this using coding, layers, and standard diplomatic edition tags and symbols, we determined that the intellectual value gained in this process would not be worth the effort. Then, too, the file size for each page would be significant; even a brief essay that was marked up and in a series of layers would utilize dozens of megabytes.

We finally decided, based on these test files and test use by selected researchers, that scanning from microfilm to tiff format and then conversion to pdf files produced the most useful result. This, then, is how we will proceed in the first phase of the project. A second consideration was deciding on which parts of the encyclopedia to focus in on for the test. The encyclopedia ranges in scope

from geology, permafrost, and engineering in the first two volumes, to zoology in volumes three and four, plant sciences in volumes five and six, meteorology and oceanography in volume seven, anthropology and archaeology in volume eight, transportation in volume nine, the Soviet north in volume ten, territorial sovereignty and history in volume eleven, Alaska in volume twelve, Canada in volume thirteen, Greenland in volume fourteen, and biography in volume fifteen. A massive addendum to volume fifteen, and a miscellany in volume sixteen as well as an addendum volume to it, complete the encyclopedia.

Because of the importance of the biographical sections of the encyclopedia, we decided to focus on volume fifteen and the addenda in the first phase of the project. The first layer of website, which will be accessible this autumn from both the Stefansson Institute and the Dartmouth websites, will consist of introductory and explanatory matter, including Stef's first announcement of the project in the journal *Arctic*. The second layer will provide tables of contents and indexing for the various volumes. Finally, the third layer will contain the encyclopedia entries themselves. Each biographical essay will be a separate file so that it will be very easy to navigate through the many volumes.

The second phase of the project, scheduled for 2003, will be to run the files through an ocr scan to provide indexing. As noted above, this process provides us with at least 85% accuracy which will create an index far more comprehensive and refined than manual indexing or an indexing program would create. By underlaying the pdf file with ocr scanning, an index can be quickly and efficiently created.

Whether or not we will want to, or be able to, scan and provide web-based access to the entire corpus of the encyclopedia is yet to be determined. Some materials have aged exceptionally well; other materials may contain information that is quite simply no longer accurate. One concern that must be addressed is the issue of potentially inaccurate – because of the age of the materials – or misleading information being mounted on the web and not recognized as an historical document by users surfing. As all of us are aware, there is a stunning amount of misinformation to be found on the World Wide Web. To prevent inadvertent

misuse of dated material in the *Encyclopedia Arctica*, we plan on devising a brief statement that will be stamped on each page indicating that this is an historical document and does not necessarily represent the most recent, most accurate information now available.

Conclusion. The measure of success of any project such as the two described in this paper lies in the quality of the work and the number of individuals who have the opportunity to see and participate in the use of the initiative either interactively or virtually. In the case of *The Friendly Arctic* modifications were required in several of the venues to accommodate differences in voltage; technical specifications for lighting, sound, and videotape; and the need to redraft or translate some texts. These were relatively easy to correct and modify. That the exhibition was and remains a success is without question. The increased number of venues clearly indicates an exceptionally wide range of international interest in the exhibition.

The second project had rather different issues. These included decisions on the best technique to scan, index, and present the data so that the final product could be used without concern for platform or program. Then, too, the use of an advisory body to assess potentially dated materials will prove helpful as the project becomes more robust.

Our success in both these projects has also been predicated on a large measure of trust and confidence in the other institution. Without this crucial human element, and the fact that both institutions have the advantage of finding themselves on the same side of the digital divide, well-versed in electronic communication, this transatlantic cooperation, and indeed contribution to the internationalization of the Arctic, would have been less easy to achieve.

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From Baffin Island to Cambridge to Baffin Island. Making available a special collection held in the SPRI to the Inuit community of Pond Inlet from where it originated

Shirley Sawtell
Scott Polar Research Institute Library

Abstract. In 1929, The Rev. Canon Jack Turner and The Rev. Harold Duncan established the Anglican mission at Pond Inlet, Baffin Island, Northern Canada. During 1990's Rev. Harold Duncan and the family of the late Canon Jack Turner presented the Scott Polar Research Institute with various collections of books, museum artefacts, lantern slides and cine films. The Scott Polar subsequently transferred the cine films onto video, the master which is held in the Picture Library at Scott Polar. A copy was sent to the Community of Pond Inlet where much of the original filming was done. Two copies were given to the Turner family, one of which is going to be deposited in an archive in Canada for reference.

This paper describes how the collection was acquired, and how a relationship was established between the Library at Pond Inlet and Scott Polar. References to parts of the collection are held on the Scott Polar Library database SPRLIB, and on the Picture Library database. Developments are taking place for a 'Virtual Museum', whereby museum artefacts can be viewed through the web. This kind of online access can be a means in bringing Polar communities and the Polar libraries closer, and we look forward to more collaboration of this kind in the future.

In 1920s, The Rev. Canon Jack Turner and The Rev. Harold Duncan established the Anglican mission at Pond Inlet, Baffin Island, Northern Canada. During 1980s and 1990s Harold Duncan and the family of the late Canon Jack Turner, presented the Scott Polar Research Institute (SPRI) with various collections of books, museum artefacts, lantern slides and cine films.

This paper describes how the collection was acquired, and how a collaborative relationship was established between the Library at Pond Inlet and SPRI Library. I will describe how parts of the collection have been made available to the community at Pond Inlet.

In 1929 Harold Duncan and Jack Turner, missionaries from the Bible Churchmen's Missionary Society sailed in the Hudson's Bay Company ship, the *Nascopie* to Pond Inlet on the northern shores of Baffin Island, where they established the Anglican Mission. With the help of the local Inuit, they built the mission house, which was also used as a church. This had to be completed in a few weeks, before the winter set in. While Harold Duncan looked after the mission at Pond, Jack Turner travelled by dog sledge to many camps in the area including the communities of Arctic Bay and Moffit Inlet, some hundred miles away. Unfortunately, due to ill health, Harold returned to England in 1934, while Jack continued to run the mission. Jack returned to England on Sabbatical in 1934 and 1939, during which he travelled around England giving cine film presentations to raise money for the mission.

In 1988, Harold Duncan donated his Arctic collection to the SPRI. The collection includes museum artefacts, books, and lantern slides. The artefacts are displayed in the Museum at SPRI. Among them is a walking stick made from a narwhal tusk with a walrus ivory handle, and a walrus tusk carved with syllabic letters. These letters were developed by missionaries for phonetic rendering of the Inuktitut language. The letters are transliterated as ME TE MU TU LE the Inuktitut word for Pond Inlet, the place where Metemutule lived. Other items include a cribbage board made from Walrus ivory, a dog whip made from walrus hide with an ivory handle, and a selection of bead work made by some of the Inuit women of Pond Inlet. At present, we are developing the idea of a virtual museum, on which items from this collection may be displayed on the Scott Polar Web page. This project will make our collections known worldwide, and this particular collection will be of interest to the community of Pond Inlet from where it originated.

The Rev. Duncan collection also includes several boxes of lantern slides which are stored in our Picture Library, and Harold's Arctic diaries, now kept in the SPRI Archives. Among the books in this collection, is the book of *Isaiah*, which Harold transcribed into Syllabics. This was published by the British and Foreign Bible Society in 1939. Another interesting publication is the *Pilgrims*

Progress in Syllabics, and a little booklet called *The Way of Salvation*.

During the Polar Library Colloquy in Cambridge in 1994, I had a phone call from Dan Weinstein, an American friend of the Institute, who was flying his private plane up to Pond Inlet. I was invited to join him, and it was during this field trip that I established links between the Library at Pond Inlet and SPRI. I spent some time with the Librarian Philippa Ootoowak who introduced me to some of the Elders, who spoke to me through an interpreter of their fond memories of the early years of the mission. Philippa showed me her local history collection, which included some photographs taken by Jack Turner, and Henry Toke Munn who was a trader in the North Baffin region during the 1930s. We have since had a visit from Lynn Cousins, the granddaughter of one of the elders Lydia Kyak, who was a young child when the mission began. Lynn came to SPRI to work on our Henry Toke Munn photograph collection. Later, with the help of Sue Rowley, daughter of the explorer Graham Rowley, we made a video of this collection. A copy of the video was given to the Library at Pond Inlet, which compliments the Munn collection held in their Library. Philippa Ootoowak has since visited SPRI several times, and her niece Julia worked here as a volunteer, and then as Librarian's Secretary.

On my return from Pond Inlet, I found an interesting film in the Scott Polar collection, 'Arctic Pioneers of Baffin Land'. 'Religious Films Ltd used some of Jack Turner's cine film taken in 1930's and later produced this film. The film includes scenes of Missionary life in the community with sub titles portraying the Christian message such as *'The glorious dawn streams over Baffinland – a symbol of hope for the future of these Children of God.'*

I traced the film company CVTV, previously 'Religious Films Ltd', who gave their permission for a copy to be made and sent to the community of Pond Inlet. This was treasured by many of the people, some who are on the film. It was nice for the younger generation to see their grandparents as children, and to see what Pond Inlet was like in 1920s and 1930s. This was the beginning of the collaborative link between the Library at Pond Inlet and SPRI.

A few years later, the Turner family presented the Institute with many reels of cine film taken by

Jack Turner on his travels in Baffin Island, his lantern slide projector and several more boxes of lantern slides. At present, references and abstracts to the Jack Turner and Harold Duncan collections of published works can be found on SPRILIB, the Scott Polar Library catalogue. References to the lantern slides can be found on the SPRI Picture Library database *Polar Pictures* which can be found on www.spri.cam.ac.uk/lib/pictures.htm.

I returned to Pond Inlet in 1997 on a field trip funded by SPRI, visiting a number of community libraries on the way. These included Arviat and Rankin Inlet on Hudson Bay, and Iqaluit. In Rankin Inlet I was presented with a prayer and hymn book by The Rev. Paul Williams.

I spent a week in Pond Inlet working alongside Philippa Ootoowak in her new iceberg shaped library. In return for hospitality during my stay in Pond Inlet, money was made available to transfer the Jack Turner cine films onto video. One set was given to the library at Pond Inlet, and two sets to the Turner family, one of which is to be deposited in one of the main university libraries in Southern Canada.

It was interesting meeting some of the elders who were children when the Mission was founded, including Rebecca and her family. Rebecca was an adopted daughter to Jack Turner and his wife Joan. Sadly Jack died very suddenly in 1947, when Rebecca and a friend were outside breaking up ice and carrying it indoors. They saw a seal in shallow water near the shore and called Jack who was in the house. He hurriedly grasped his rifle, and slipped it under his arm, and as he helped Rebecca carry the ice up the steps, the rifle went off and shot him. After an emergency evacuation to Winnipeg, he sadly died.

I spoke through an interpreter with two elders, Lydia Kyak and Cornelius Nutarak who spoke very fondly of the missionaries. Cornelius brought out a diary which he had kept in the late 1920s and 1930s and spoke of the happy times he had spent with the missionaries. It has meant a great deal to the whole community at Pond Inlet to have copies of the Turner films, which provided them with a pictorial link to their roots and history. This in turn has provided Scott Polar with the opportunity to become involved on a practical level with an Arctic community. We hope that more links such as this can be established in the future.

In 1992 the Polar History Group of the Scott Polar Research Institute established the Oral History Project. Its purpose was to provide an audio-visual record of those people who have either worked in the polar regions, or have contributed to polar science or exploration. Maria Pia Casarini-Wadhams and myself made a video interview of Harold Duncan's memories of his time in Pond Inlet from 1929-34. A recording of this nature has provided a valuable and permanent record of Harold's work which complements his collection of artefacts, slides and diaries he gave to the Institute in 1989. The video includes shots of some of the photographs and artefacts with a commentary by Harold.

A few years ago, The Rev. Howard Bracewell, Anglican Minister at Pond Inlet in 1960s-1970s, gave a Saturday night lecture at Scott Polar, which was recorded as part of the Oral history project. We would like to interview Laurie Dexter, who was minister at Pond Inlet during the late 1970s-1980s. Laurie took part in the expedition *Polar Bridge*, in 1988, a joint Canadian-Soviet expedition which crossed the Arctic Ocean via the North Pole. Laurie was subsequently awarded the Order of Canada. He now leads expeditions in the polar regions, and lectures on tourist ships.

The Duncan and Turner collections are among materials currently being consulted by Dr Michael Bravo and Dr Nancy Wachowich.

Dr. Michael Bravo is one of the co-ordinators of the M.Phil programme at Scott Polar, and is also doing some research into Protestant missions and the expansion of the Inuit Arctic. He writes, 'The work of missionaries is a critical resource in writing a history of the expansion of the Arctic Regions. These collections provide a vital resource for understanding the early reception of Christianity in the Baffin Region of Arctic Canada. The role of missionaries in Arctic Canada has never been adequately assessed within the wider context of imperial or nationalist expansion. Through collaborative research with northern institutions in Canada, these collections may contribute to re-thinking some basic assumptions about Arctic history. An assessment of the missionary experience in Pond Inlet provides a basis for a further comparison of Inuit experience of Christianity in northern Canada and Greenland. Over the last three centuries, mission traffic between the two re-



gions was an important historical force linking their histories. Collaboration with Danish scholars has been a fruitful and important aspect of examining the Canadian context.'

Dr. Nancy Wachowich lecturer in Social Anthropology at the University of Edinburgh, has been carrying out research into Inuit/Qallunaat encounters with different groups of people such as the missionaries, Hudson Bay Company and RCMP, who had an impact on the lives of Inuit communities from the late 1920s. Currently she is working with Igloodik Isuma Film Corporation researching archives for a film they are planning that will be set during the early 1900s during the early contact period. Nancy has spent some time at Pond Inlet.

This has been an interesting and rewarding project to have been involved in, and we look forward in the future to developing more links of this kind between polar libraries and polar communities.

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Session 12: Historic resources preserved for the future

The Indian Affairs Annual Reports (1864-1990): a unique Canadian history source on the web

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Abstract. A variety of federal departments have been responsible for the Indian Affairs portfolio in Canadian history. Each of these departments has published *Indian Affairs Annual Reports* as a record of its administration. These annual reports are extremely important in claims research, but are also a unique source of Canadian history. In 1997, the Indian and Northern Affairs Canada (INAC) Departmental Library created a six CD-ROM set of the digitized *Indian Affairs Annual Reports* from 1864 to 1990. In May 2002, the INAC Departmental Library and the National Library of Canada completed a joint project to create a Web version of the annual reports for the National Library's Digital Library of Canada at <http://www.nlc-bnc.ca/indianaffairs>

At least eight federal departments have been responsible for the administration of "Indian Affairs" in Canadian history. The latest department responsible for the portfolio is Indian and Northern Affairs Canada, created in 1966.

Annual reports for Indian Affairs have been published since the early 1860s. The last annual report was published in 1990. In 1991 the annual report was integrated into the department's budgetary report, the *Estimates Part III* (which now includes the *Report on Plans and Priorities* and the *Performance Report*) and the Government of Canada's *Public Accounts*.

The early *Indian Affairs Annual Reports* provide a unique look at Canadian history, both the good and the bad. Like any other country, Canada's history includes stories of injustice and prejudice.

The annual reports are one of the few sources of

information about many First Nation communities.

From the earliest years until after World War II, the annual reports consist mostly of letters from departmental agents and superintendents reporting on conditions in individual communities and regions. The reports also contain medical, school and survey reports, maps, census information, and figures for land holdings and sales.

The annual reports have always been an important source for claims research. First Nations may petition the Government of Canada with a claim that a treaty or other agreement with the federal government has not been fulfilled. This may involve claims of illegal disposition of community land, or a breach of obligation arising out of government administration of community funds. The claim may also involve a dispute regarding population totals for a given period of time. Population size would have been used to calculate a grant of reserve land to a First Nation. (Indian and Northern Affairs Canada 1993, p.19)

If a claim presented by a First Nation is accepted by the Government of Canada as having merit, a government negotiator is assigned to find a resolution. If the claim is not accepted, or the resolution arrived at in negotiation is unsatisfactory to the community, the First Nation may choose to seek redress through litigation. Both the Government of Canada and First Nations rely on the annual reports for historic information that can be used to resolve outstanding claims.

The Government of Canada is also currently engaged in addressing thousands of claims by victims of physical and sexual abuse, who were enrolled as students in residential schools that once existed for Aboriginal children. (Indian and Northern Affairs Canada and Canadian Polar Commission 2001, p. 12) Once again, the annual reports are an important source of information on these institutions.

While the *Indian Affairs Annual Reports* are heavily



The policy of reducing rations inaugurated on the ranching reserves of Southern Alberta has demonstrated that it is both practicable and beneficial, and leads to the conviction that the slowness of progress in the bringing of the Indians to a state of self-support is to be attributed largely to the system of free feeding, which, resorted to of necessity after the disappearance of the buffalo, was continued and extended in a degree that led the Indians to regard it as a right, relieving them of the necessity of exertion. It is, therefore, particularly pleasing to record the fact that on the largest reserve in western Canada, that of the Bloods, where the ration-house had become the most prominent feature, we have succeeded through the new policy in having

Figure 1. *Indian Affairs Annual Report*, 1905, p. 189

used for researching claims and court cases, they also contain vast amounts of information that could be used by First Nations to develop community histories or curriculum material for schools. Unfortunately, few communities and schools have access to the reports. Complete sets are normally found only in government and university libraries in larger cities, where claims researchers are usually located.

In 1995 the Indian and Northern Affairs Departmental Library made a decision to digitize the *Indian Affairs Annual Reports* from 1864 to 1990.

The initial concept was to produce a single CD-ROM, containing a database of the contents of the annual reports that would be searchable by keyword. A single CD-ROM could be easily reproduced and distributed to all Canadian First Nation communities and schools. A searchable version of the reports would assist claims research.

The *Schedule of Indian Bands, Reserves and Settlements* from 1902 to 1992 was also to be included in the project. The schedules contain information such as band name, reserve affiliation, location, land holdings, etc.

As the digitizing of the annual reports began, a major concern developed around whether or not any of the printed text could be corrupted during digitization. Spell check software could, in theory, be used to identify a digitized word that appeared misspelled. There seemed, however, to be no way to verify whether or not numbers were being accurately captured in the searchable database.

Nonetheless, claims researchers had to be certain that the numerical data they were retrieving from the CD-ROM for a negotiation or court case was as it appeared in the published original. Without this assurance, the CD-ROM would be useless to them.

A decision was made to add to the CD-ROM product the scanned images of the more than 40,000 printed pages of the annual reports and *Schedule of Indian Bands, Reserves and Settlements*. Researchers would use the search engine to search the digitized text to find relevant paragraphs. A message throughout the searchable database would warn researchers to verify any "important information" against the image of the original printed page. A link to the appropriate image would be supplied.

Including the scanned images of the printed pages provided a solution to the problem of data accuracy in the searchable database, but it also increased the product to a set of six CD-ROMs, containing a total of three Gigabytes of information. The costs of reproducing the product for distribution were now significantly increased.

Multiple CD-ROMs also affected how the product would be used on a personal computer. Annual reports were grouped by years on each CD-ROM, but frustrating error messages appeared when a user attempted to use a single CD-ROM at a time. Searches run on a single CD displayed results for the entire range of years from 1864 to 1990, with pages in order of "best match to a search," not in chronological order. This problem was compounded by the large number of hits produced by a search. The annual reports contain no fixed fields that would allow for really precise searching.

Since the CD-ROMs could not be used individually, users were required to download the contents of all six CDs into a single large database. Many of the First Nation communities and schools who were originally targeted as recipients of the *Indian Affairs Annual Reports* CD-ROMs would not have



Figure 2. *Indian Affairs Annual Report, 1892*, p. 316.

| 316 DEPARTMENT OF INDIAN AFFAIRS. | | | | | |
|--|----------------|---------------|-----------------|--------|--------------------------|
| TABULAR STATEMENT No. 3.—Census Return of Resident and Nomadic Indians; Denominations to which they belong, &c.—Continued. | | | | | |
| PROVINCE OF MANITOBA. | | | | | |
| Indians. | Census Return. | Protes- tant. | Roman Catholic. | Pagan. | Denomination of Schools. |
| CHIPPWEAS AND CREES OF TREATY NO. 1 AT | | | | | |
| Rousseau River, including Rapids..... | 252 | 2 | 81 | 169 | |
| Long Plain..... | 125 | 11 | | 114 | |
| Swan Lake, Indian Gardens..... | 130 | | | 130 | |
| St. Peter's..... | 1,184 | 954 | 132 | 48 | 4 Prot. ; 2 R.C. |
| Broken Head..... | 221 | 105 | 44 | 72 | 1 do |
| Fort Alexander..... | 628 | 255 | 242 | 31 | 2 do 1 do |
| Sandy Bay..... | 210 | 12 | 183 | 20 | 1 do |
| Total, Treaty No. 1..... | 2,695 | 1,339 | 682 | 584 | 7 Prot. ; 4 R.C. |

computers with sufficient speed and memory to use the product.

In 1997 the six CD-ROM set of the *Indian Affairs Annual Reports* was released, using a search engine called GreenBook. The Indian and Northern Affairs Departmental Library decided to limit distribution of the CD sets to organizations involved in claims research. On completion of the CD-ROM project, the Library began immediately to lobby for funding to create a Web version of the *Indian Affairs Annual Reports*.

In October 1999, Dr. Roch Carrier was named National Librarian of Canada. A renowned Canadian author, Dr. Carrier's focus at the National Library can be summed up by this statement on the National Library's Web site:

"With enthusiasm, I will ask the employees of the National Library, the university community, authors, publishers, librarians, professional associations, persons working in new media and government information agencies to contribute to finding the best ways to preserve our collective memory in order to make it accessible" (Carrier 2000).

Soon after Dr. Carrier's arrival, a number of National Library working groups were created, to look for ways in which the National Library could be made to be "a Library for all Canadians" (Gamache 2001, p. 3). The Working Group on Collection Policies took on the task of preparing a report and recommendations on Aboriginal resources and services at the National Library.

The Working Group approached many organizations and individuals, including the Indian and Northern Affairs Canada Departmental Library, for suggestions on how the National Library

could improve services to Aboriginal Canadians. The Working Group was especially interested in identifying materials that could be digitized and delivered to researchers through the Internet. (Gamache 2001, p. 18)

Almost immediately, a joint project was proposed between the National Library of Canada and the Indian and Northern Affairs Departmental Library, to create a Web version of the *Indian Affairs Annual Reports*, to be made available through the National Library's Digital Library of Canada.

The images and searchable text of the *Indian Affairs Annual Reports* and the *Schedule of Indian Bands, Reserves and Settlements* were stripped from the 1997 CD-ROM and combined with a search engine developed internally by the National Library for the Digital Library of Canada.

No money was available to address the original problem of the accuracy of numerical data in the searchable database, and so, once more, images of the more than 40,000 pages in the original print documents had to be loaded onto the Digital Library. A link would again be provided to the appropriate image from any HTML page retrieved by searching. However, unlike the original CD-ROMs, the loading of images has no impact on the Web site.

In May, 2002 the *Indian Affairs Annual Reports (1864-1990)* was launched on the Digital Library of Canada site at <http://www.nlc-bnc.ca/indianaffairs>.

Advertizing of the Indian Affairs Annual Reports Web site is just now getting under way, and yet, in the first month alone, there were 36,000 hits on the site.



Figure 3. Indian Affairs Annual Reports Web Site, Advanced Searching Screen.



While some First Nation communities and schools still do not have access to the Internet, many do, and more are getting connected every month.

This joint project of the Indian and Northern Affairs Departmental Library and the National Library of Canada is the best option to date for making the *Indian Affairs Annual Reports* an accessible resource for First Nations.

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Note. The term "First Nation" used in this paper is a term that came into common usage in the 1970s to replace the word "Indian" which many people found offensive. Although First Nation is widely used, no legal definition of it exists. Among its uses, the term "First Nation peoples" refers to Indian people in Canada, both Status and Non-Status. Many Indian people have also adopted the term "First Nation" to replace the word "band" in the name of their community. (Indian and Northern Affairs 2000, p. 1).

Virtual Shackleton at the Scott Polar Research Institute

William Mills
Scott Polar Research Institute

Abstract. Although *Endurance*, Sir Ernest Shackleton's expedition ship, was famously crushed by ice in October 1915, by no means everything went down with her. Not only did the entire crew survive but so also did many journals and artifacts, a good number of which have found their way through gift, loan and purchase to the Scott Polar Research Institute. With Shackleton's three expeditions the subject of intense popular and scholarly interest, the Institute clearly faces a considerable task in making these materials – many of them highly fragile – as accessible as practicable and with the help of the Gladys Kriebel Delmas Foundation a start has been made. This paper provides a brief account of the Virtual Shackleton project.

Background to the project. How does a small university department, principally concerned with research and teaching, cope when an individual with whom it is closely associated suddenly becomes a figure of international popular interest and the subject of numerous exhibitions, films and books? In most respects, this is a highly enviable situation offering great opportunities, but it can also pose certain problems. In this paper, I shall discuss the extraordinary growth of interest in the career of the British Antarctic explorer Sir Ernest Shackleton (1874-1922), its effects on the Scott Polar Research Institute, and the genesis of the Virtual Shackleton project.

The Scott Polar Research Institute is of course dedicated not to Shackleton but to his first leader and later rival, Robert Falcon Scott. Preserved in the Institute's Archives are letters which make manifest this rivalry, which was never more intense than when Shackleton, having tired of waiting for Scott to lead another expedition south, determined to organize his own expedition and in doing so was forced by circumstance to cut across the latter's plans. Relations between the two men were in any case tense following Scott's decision to send an unwilling Shackleton home early on during his first expedition. The rivalry between

Scott and Shackleton corresponds to relations between certain other explorers, who found themselves pitted in the public mind as competitors and were then obliged to compete before the same sponsors for means to achieve comparable same goals. Despite this unfortunate legacy, when the Institute was established as a memorial to Scott and his four companions in the Polar Party, Shackleton was one of the first to state that he wished all papers relating to his expeditions to be deposited in time at the Institute. 'In time' in this case was eventually to mean more than 70 years.

Although Shackleton himself was thoroughly supportive of the Institute's mission as an international depository for polar information, in the light of his disagreements with Scott not everyone felt that an institute named for Scott was necessarily the most appropriate place for materials surviving from his expeditions. This feeling deepened over decades when, following the First World War, a cult grew up around Scott and his companions in which their deaths were interpreted as emblematic of courage in the face of extreme adversity. Generations of children in the British Empire were brought up on this inspiring story whilst Shackleton was largely forgotten. In 1979, Roland Huntford published *Scott and Amundsen*, a book largely researched in the Institute but one doing it no favours. For the legend of Scott the great polar hero, Huntford substituted an alternative myth in which Scott was viewed as in all respects incompetent and bearing primary responsibility for the death of his men. Here is not the place to discuss this work, nor the subsequent debate, but Huntford's book was widely read and extremely influential. The debunking of Scott was not without implications for the Institute, which found itself commemorating a man who, whether justly or not, was now viewed by many as the epitome of bungling English amateurism. Other polar institutions have suffered similarly in the light of reevaluations of their founding figures. Two examples here are the Peary Arctic Museum, Bowdoin College, and the Byrd Polar Research Center, Ohio State University, following controversies whether either reached the North Pole as claimed.

What the Scott Polar Research Institute has been experiencing during the last decade has been a far rarer phenomenon, whereby a previously compar-



actively disregarded figure has achieved a prominence beyond that experienced during his lifetime. There is no Shackleton Institute or Shackleton Research Centre, but in 1998 a Shackleton Memorial Library was opened at the Institute born of a desire to give due recognition to both the leading British figures during the 'Heroic Era' of Antarctic exploration (1895-1922). The new library is in fact dedicated to both Sir Ernest and his son Edward, Lord Shackleton, a polar explorer in his own right but primarily known as a statesman with polar interests. There is no question but that use of the name Shackleton helped ensure the raising of sufficient funds to complete a major extension to existing facilities. Whilst appreciation of the achievements of Sir Ernest Shackleton has been growing for several decades, the key event was the opening of a major exhibition about his second expedition in the American Museum of Natural History, New York, timed to coincide with publication of an article in the *National Geographic* and a book *Endurance: Shackleton's legendary Antarctic expedition*, both by Caroline Alexander, who was also the moving spirit behind the exhibition. Characteristic of modern interest in Shackleton is its focus on his second expedition, which failed in all its objectives, rather than on his very successful first expedition, during which he came within 180 km of the South Pole whilst members of his expedition also reached the South Magnetic Pole and completed the first ascent of the volcano Mt Erebus. What has caught public interest is not Shackleton's inability even to land on Antarctica to attempt the first continental crossing, but the extraordinary story of how he brought all of his party back to safety in the face of every possible difficulty. It is indeed one of the greatest of true stories, polar or otherwise, and the qualities of leadership exhibited are today used to inspire future business leaders, just as in the past Scott's journey from the Pole inspired the children of previous generations to exert themselves to the utmost for their country. One suspects that both Scott and Shackleton would have been equally surprised by the use later generations made of their expeditions.

Whilst many of the most important materials concerning Scott were presented relatively soon after the Institute's foundation in 1920, the Shackleton collections have been acquired in a more

piecemeal fashion. Table 1 gives an indication of when some of the more important collections were received.

It will be noticed that what was a dribble has recently become a flood. In this, the opening of the Shackleton Memorial Library has certainly been a factor making the Institute appear a more natural home for Shackleton as well as Scott materials. With a few exceptions, most of the items and collections listed above were presented, with just a few purchased or acquired on long-term loan. By far the most important recent acquisition is the Shackleton Family archive. Formerly the personal possession of Sir Ernest himself, this very large collection of papers, journals, photographs, books, and artifacts came to the Institute by a very roundabout route. On Sir Ernest's death, they passed to his widow, Emily Mary Shackleton. Following her death in 1936, the bulk of the collection was taken charge of by Shackleton's daughter, Cecily. Subsequently consulted by James and Margery Fisher for their definitive biography of the explorer (1957), access was unavailable to any later scholar and later biographers have had to rely on transcripts and notes made by the Fishers (now also deposited at the Institute). It was even rumoured that the original records might have been destroyed. This, however, proved not to have been the case and in 1999 it came into the custody of the executors of Mrs Rena Dodds, a distant cousin, who had inherited it on Cecily's death in 1957. Thanks in particular to Sir Ernest's grand-daughter, The Hon. Alexandra Shackleton, in December 2001 the Institute was able to announce that, with the exception of the books and some other dispensable items, the Shackleton Family Archive had been presented to the Institute. Whilst the entire collection is of the greatest interest, the most exceptional items are Sir Ernest's diaries from all four Antarctic expeditions. The scraps of paper recording notes made on the ice after the sinking of *Endurance* are also particularly evocative, and no less fascinating is Sir Ernest's private evaluation of the various expedition members. Artifacts include the 'post-box' in which contributions to *South Polar Times* were deposited on Scott's first expedition and a fine bust. In any year other than 2001, precedence would have been given to the five lots purchased or ac-

| | | |
|----------------|---|-------------|
| Pre-1932 | R.W. James diaries | 1914-16 WSP |
| 1938 | Sir Raymond Priestley diaries and notebooks | 1907-09 |
| 1942 | George Marston paintings and sketches | 1907-09 |
| | | 1914-16 WSP |
| 1943 | Frank Worsley's journals 1914-16 | 1914-16 WSP |
| 1946 | H.R. Mill Bequest – correspondence | 1907-09 |
| | | 1914-16 WSP |
| | | 1914-17 RSP |
| 1961 | A. Keith Jack – Meteorological records | 1914-17 RSP |
| 1966 | 8 volumes of press cuttings | 1907-09 |
| | | 1914-16 WSP |
| | | 1914-17 RSP |
| 1966 | F.A. Worsley's journals, 1914 and 1916 | 1914-16 WSP |
| 1966 | Frank Hurley's personal album | 1914-16 WSP |
| 1971 | F. Wild diaries | 1907-09 |
| | | 1914-16 WSP |
| 1971 | E. Wild diary | 1914-17 RSP |
| 1971 | T.H. Orde-Lees diaries | 1914-16 WSP |
| 1974 | Photographs taken by Sir Raymond Priestley | 1907-09 |
| 1981 | A. Spencer-Smith diary | 1914-17 RSP |
| 1997 | G. Marston oil paintings | 1914-16 WSP |
| 2001 | E.H. Shackleton diaries and correspondence | 1901-04 |
| | | 1907-09 |
| | | 1914-16 WSP |
| | | 1921-22 |
| 2001 | A.H. Macklin diaries | 1914-16 WSP |
| | | 1921-22 |
| 2001 | Quest archive | 1921-22 |
| | Quest photographic archive | 1921-22 |
| 2001 | R.S. Clark biological archive | 1914-16 WSP |
| 2002 | Wordie Endurance archive | 1914-16 WSP |
| Abbreviations: | | |
| RSP | Ross Sea Party | |
| WSP | Weddell Sea Party | |

Table 1. Chronology of major accessions to the Shackleton collections.

quired on long-term loan at the Christie's Polar Sale, September 2001. With the aid of grants of £186,207 from the National Heritage Memorial Fund and £28,484 from the Antarctic Heritage Trust, the Institute was able to purchase Macklin's holograph diary of the period from the sinking of *Endurance* to the rescue from Elephant Island, amongst the most detailed of all primary sources for Shackleton's second expedition, and the *Quest* MS. Archive, including Shackleton's death certificate and Macklin's account of his death. Three other lots purchased at the same sale by a private benefactor have been placed on long-term loan with the Institute. These are the Photographic archive of the *Quest*, the archive of Robert Selbie Clark, biologist on *Endurance*, and Macklin's re-constituted journal of the expedition up until the sinking of *Endurance* when his original diary was lost with the ship. The most recent acquisition is

the Wordie Archive. Sir James Mann Wordie was the official archivist of Shackleton's second expedition and as such one of the most significant collections of papers concerning this expedition was passed down within the Wordie Family, covering both Weddell and Ross sea parties. Outstanding items include the logbook of the relief ships *Emma* and *Yelcho* (autographed by Shackleton), maps of Point Wild, and the transcribed diaries of Andrew Jack and Reginald James.

Whilst scholars have been allowed access to some of the materials, inevitably it has been somewhat restricted and, with a few exceptions, nothing has previously been on view to the general public. Clearly, there is an onus on the Institute to make its Shackleton collections as accessible as practicable, not just to the many authors writing books and articles, but also to the general public. Indeed, this was a condition of the National Her-



itage Memorial Fund's grant. Before this can be done, however, the collections must be accessioned, subjected to appropriate conservation measures, and catalogued.

Virtual Shackleton. With so much to do to process the collections, design of the Virtual Shackleton website is still at an early stage. The remainder of this paper outlines some of the ideas currently under consideration.

Designing a Website is not so very different from mounting an exhibition, except that in this case we want to create a site which will provide a scholarly resource as well as an introduction to the Institute's wealth of Shackletonia. The most famous expedition – strictly the most famous part of an expedition – is the story of the Weddell Sea Party during the Imperial Trans-Antarctic Expedition of 1914-17. This lends itself to a straightforward linear treatment in which each episode occurs in succession with little need to give account of events occurring at the same time elsewhere. These episodes are outlined in the chapter titles of Sir Ernest's own account *South* (Shackleton, 1919): Into the Weddell Sea, New land, Winter months, Loss of the *Endurance*, Ocean Camp, The march between, Patience Camp etc.

Only once Elephant Island has been reached does the party divide, with Sir Ernest and five others undertaking the perilous but successful voyage to South Georgia in *James Caird*, leaving the other twenty-two to await rescue on the island. This linear structure suggested the idea of The *Endurance* Timeline, one possible way in which the website could tell the story of the Weddell Sea Party whilst at the same time displaying primary materials held in the Institute. The basic concept is simple: to represent each of Sir Ernest's chapter titles on a separate page and to illustrate what happened during this episode by relevant photographs, paintings, diary entries and correspondence. Whilst such an approach works best for the Weddell Sea Party, similar timelines could be constructed for the Ross Sea Party of the same expedition – The *Aurora* Timeline – as well as for the first and third expeditions – The *Nimrod* Timeline and The *Quest* Timeline respectively. In each case, the intention would be to use chapter titles from the standard accounts (Shackleton, 1909; Joyce, 1929; Wild, 1923).

The Endurance Timeline. For the Weddell Sea Party, the most important primary materials are Sir Ernest's diary and correspondence; the diaries of Reginald W. James, Dr Alexander H. Macklin, Captain Thomas H. Orde-Lees, and Frank Worsley; the biological archive of Robert S. Clark; Frank Hurley's 'Green Album', one of his four surviving 'Blue albums', and a large number of lantern slides and prints; several paintings and drawings by George Marston; and 13 watercolours by Walter E. How and his half-model of *Endurance*. In addition, in 1998, the Institute acquired the last surviving relic of *Endurance* herself, a spar used subsequently as a distress signal flag pole on Elephant Island. Whilst some of these cover only a short period, a few contain relevant material for the entire expedition. Thus, thanks to the unique 'Green Album' (P66/19), we have photographs by Hurley from departure to rescue. Frank Worsley's journals also cover the complete expedition; in his case, including the boat journey in *James Caird* and the crossing of South Georgia. On the other hand, after abandoning *Endurance*, Sir Ernest himself appears to have had time to keep a diary only at Patience Camp, where the expedition remained from 30 December 1915 through to 6 April 1916 (MS 1537/3/7). Apart from Worsley, the most detailed source for the period from *Endurance's* abandonment onwards is the diary of A.H. Macklin (MS1588), which is usefully complemented by various materials the same author wrote afterwards to describe earlier events. The diaries of Orde-Lees and James both begin on the ice. Any earlier diaries they may have kept were not brought back. The manuscript sources are stunningly complemented by Hurley's photographs and Marston's paintings. For obvious reasons, there are no Hurley photographs for the episode described by Shackleton as 'The escape from the ice'. He could not risk drenching his camera as the three small boats threaded their way through the pack by means of narrow leads and across the open ocean to Elephant Island. Fortunately, it is just this episode which is best illustrated by Marston's paintings, the Institute possessing four oils which Marston painted later on the basis of his recollections of the voyage.

Up until the abandonment of *Endurance* – chapters 1-4 in *South* – the chief surviving sources, at the Institute or indeed anywhere, are Hurley's

'Green Album' and Worsley's first diary (MS733/1). *South's* next three chapters describe the period between 1 November 1915 and 6 April 1916, when 'Patience Camp' was abandoned having drifted sufficiently far north to be near the edge of the pack. Much of the little primary material for the next chapter 'The escape from the ice' was written – or in the case of Marston, painted – afterwards, as those keeping diaries secured them as well as they could against being drenched. Worsley, however, made entries throughout, as indeed he was required to do for purposes of navigation. Chapter 9 – 'The boat journey' – describes *James Caird's* epic 1450 km voyage. The only primary source here is Worsley's second diary (MS 296), which still bears the marks of the soaking it then received, though the Institute also possesses the chronometer and watch he used to navigate by. For the 36-hour crossing of South Georgia, we have only Worsley's 'rough memory map', drawn shortly afterwards. Worsley's diary ends the day before they set out. The period of 105 days spent by the remaining members of the expedition on Elephant Island is altogether better represented with photographs by Hurley, paintings and drawings by Marston, and diary entries by James, Mackin and Orde-Lees. Whilst they had time enough to keep their diaries up-to-date, shortage of paper kept most entries brief.

Hurley's 'Green album' and other photographic collections. For many visiting the Institute, the most enthralling single object is Frank Hurley's personal photograph album. The 'Green Album' represents Hurley's selection of those photographs he considered his best, annotated with descriptions and comments. Apart from the 100 glass plates now in the Royal Geographical Society and 20 Paget colour plates in the Mitchell Library, New South Wales, these include the only photographs surviving prior to Patience Camp, 400 other plates having been smashed on the ice by Hurley and Shackleton to reduce weight. Many of the album's images are unique. Because of its fragile state, it has been disbound and each separate sheet placed in a Melinex envelope. This fragility also means that very few can be given the privilege of perusing it in full. To meet the constant demand of publishers, all the photographs have been digitized and

the next stage will be to photograph each sheet and post its digitized image on the Virtual Shackleton website. Viewers will then be able to browse through the entire album and, through clicking, enlarge both photographs and, possibly, annotations to full-screen size.

Whilst there are at least three other copies of Hurley's 'Blue Album', all differ in detail, and this volume merits similar treatment to the 'Green Album'. Such is the interest in Shackleton and in Hurley's work specifically, that we aim to post images of all prints and lantern slides in the collection, arranging them in chronological order insofar as can be done with accompanying notes and finding aids.

Whilst none of Shackleton's other expeditions has a photographic archive of such quality as his Weddell Sea Party, the Institute possesses many photographs of his first and second expeditions as well as an album from Scott's first expedition, which includes over 200 photographs taken by Shackleton himself. The Picture Library is currently digitizing these images and it is intended to include them in the Virtual Shackleton website.

Conclusion. A grant from the Gladys Kriebel Delmas Foundation has enabled the Institute to begin work on the essential preparatory work for Virtual Shackleton. The two projects described in this paper are just a start, but they represent natural beginning points. At present the Institute does not plan to reproduce its holdings on the web in their entirety. The worries are these: include everything and who will want to edit or publish scholarly editions of the correspondence and diaries? Who indeed will wish then to visit the Institute? On the other hand, given limited space and resources, we don't wish to stimulate popular demand to such an extent that it is so overwhelming that we are unable to meet it. Between the Scylla of an unvisited Institute and the Charybdis of one awash with humanity, the goal is to design a facility which will meet those interests which are best accommodated remotely – e.g. publishers' requests to reproduce photographs – whilst ensuring continuing scholarly and popular access to the Institute itself in manageable numbers. Unlike Shackleton, we aim to avoid shipwreck!



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Whispers from the Past, Part II: an update on the work of the Western Lake Superior Jesuit Diaries Project

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Abstract. This presentation will discuss the ongoing work of the *International Committee for the Study of the Jesuit Relations Concerning the Lake Superior Ojibwa*. The goal of the committee is to assemble, transcribe, translate and annotate the diaries and mission papers written by Jesuits who worked among the Ojibwa people at the western end of Lake Superior. A number of the diaries which were thought to no longer be in existence were discovered a few years ago in the archives

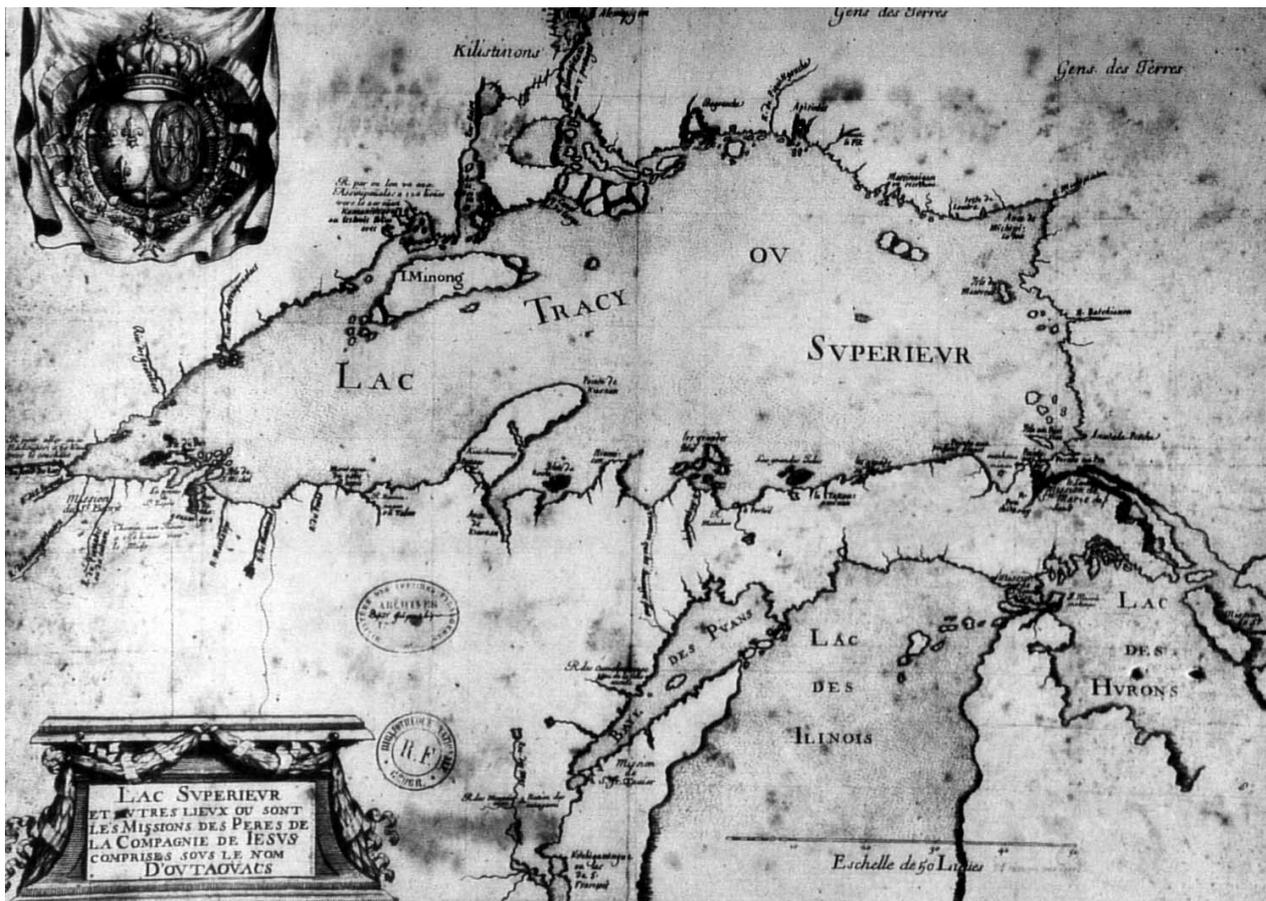


Figure 1. The first accurate map of Lake Superior, the so-called Jesuits Map, was drafted in 1670 and identified the locations of the Society's missionary activity. (Courtesy of the Thunder Bay Historical Society).

and contain a wealth of information about the native people of the region. The first phase of the project focuses on a portion of a diary written by Father Chone and Father Fremiot starting in July 1848 at Grand Portage.

Background. In 1998, a group of researchers interested in the history and development of the area at the western end of Lake Superior got together to form "The International Committee for the Study of the Lake Superior Jesuit Diaries and Mission Papers". Since that time, the committee has undergone a change of name and the membership has been expanded but the original goal of the committee remains the same, that is, to assemble, transcribe, translate and annotate the Jesuit diaries and related documents created by the Jesuit Fathers posted at Pigeon River and Fort William commencing in the year 1848. From the beginning it was agreed that the best way to present the diaries and related documents would be in a CD-ROM format.

These documents contain a vast amount of information relating to the Ojibway people of the area and describe in some detail early contact with Europeans as well as traditional ways of life. The diaries start in 1848 with the return of the Jesuit missionaries to the area. This is a particularly significant point in the history of Ojibway people in this part of northwestern Ontario since the Robinson Superior Treaty would be signed in 1850. Events and negotiations leading up to the signing of this treaty are included in the writings of the Jesuit missionaries. Until recently the diaries were thought to be lost but fortunately were discovered in an archives amongst other related material.

One of the first decisions made by the Committee was to create a pilot project, which would become a model for the format of the entire initiative. In addition, it is anticipated that the pilot project can be utilized by the Committee to secure the necessary funding to complete the rest of the project. The pilot project is near completion. The CD-ROM contains two years, 1848 and 1849, of the diary written by Father Jean-Pierre Chone (1808-1878) and Father Nicolas Fremiot (1818-1854) initially at Grand Portage and later at Fort William. It includes an electronic copy of the original journals, a transcription and a translation of

the original French as well as maps, pictures and an introduction.

Historical Context. With the arrival of Father Chone, S.J. by schooner at Pigeon River on the north west shore of Lake Superior over 150 years ago, an important, if little known chapter of Canadian history began, the re-establishment of a Catholic missionary presence on Lake Superior's north shore. As a member of the Society of Jesus, Father Chone followed, by then, the long established principles of the order as laid down by its founder Ignatius Loyola (1491-1556) when he founded the order in 1534. Shortly after it was recognized by papal decree, the Society attracted Catholic scholars from across Europe to join its ranks. Early members of the Society such as Christopher Clavius, S.J. (1538-1612), Matteo Ricci, S.J. (1552-1610), Christopher Scheiner, S.J. (1575-1650), Francois De Anquilon, S.J. (1546-1617), were only some of the Fathers who laid the foundation of the well-known Jesuit tradition of scholarship, dedication and service. The Society, more commonly known as the Jesuits, has maintained a reputation for outstanding scholarship, a commitment to teaching, and missionary activity, which accelerated the spread of Catholicism to India, China, Japan and the Americas.

The Jesuits began their missionary activity establishing their first outpost in Goa in 1542 quickly expanding their influence throughout Southeast Asia and by 1601, Matteo Ricci had established a mission within Peking.

In Canada, one of the first Jesuit missionaries to arrive in the Great Lakes Basin was Father Rene Menard, S.J. who wintered on the south shore of Lake Superior in 1660-61.

Shortly afterwards, Father Claude Allouez, S.J. established a mission and built what was probably the first chapel on the western shore of Lake Superior at Chequamegon Bay in what is now the United States. An energetic man, Father Allouez and two First Nations guides crossed Lake Superior, passed the future site of Fort William and paddled to Lake Nipigon. There, the party discovered a village of the Nipissings, Catholics who fled their traditional lands in the wake of Iroquois expansionism. Father Allouez spent two weeks with the Nipissings and celebrated what is believed to be the first mass on Lake Nipigon.



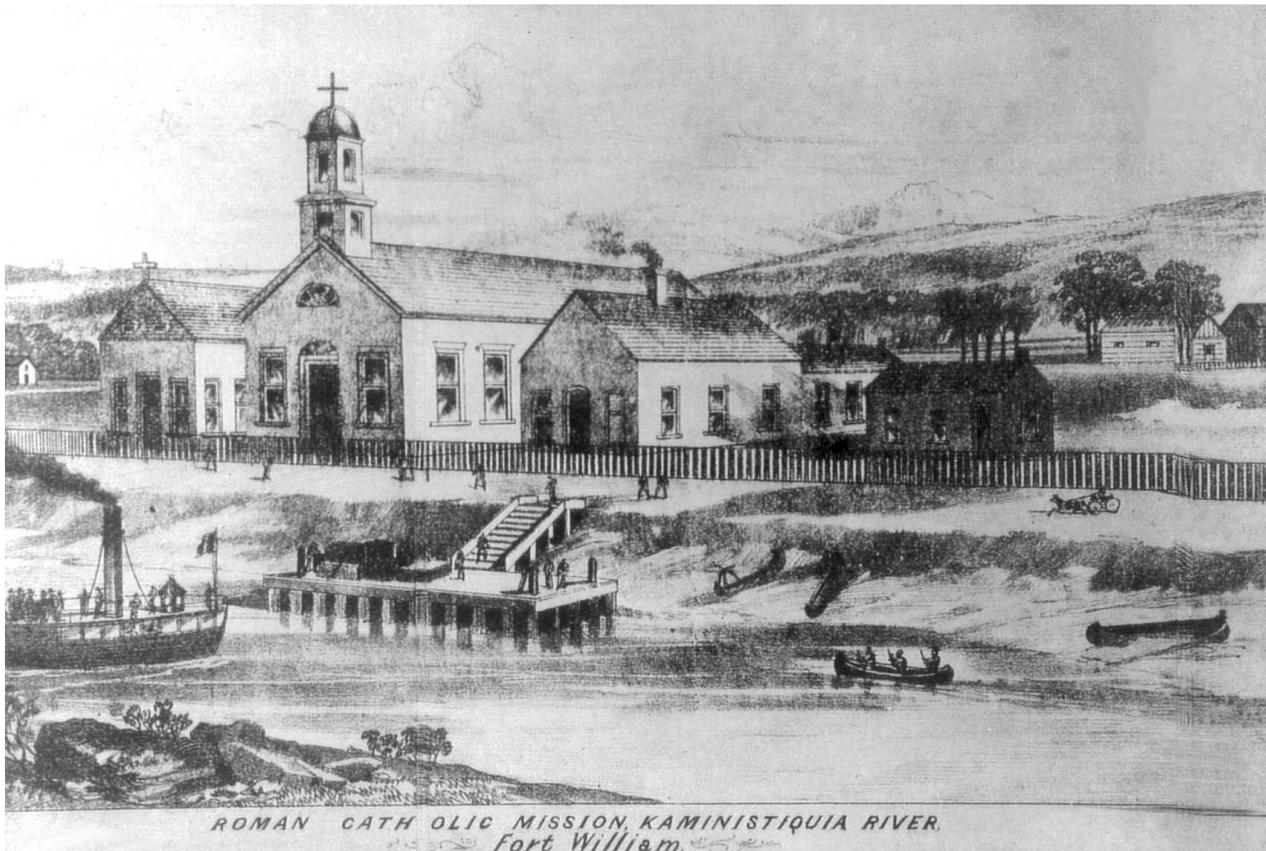


Figure 2. By the 1880s, the Jesuit Mission was an important institution in the rapidly growing community of Fort William. (Courtesy of the Thunder Bay Historical Society).

By the 1730s, Father Charles Messaiger, S.J. had established a chapel, the first chapel in Fort William in northwestern Ontario. He was followed by other Jesuit fathers who served the spiritual needs of those who lived and worked at the Fort William trading post. Fort William, however, was destroyed by fire in 1765 and operations were subsequently transferred to Pigeon River, which became the great gateway to the West until the American Revolution. The Jesuit fathers moved their mission as well.

Meanwhile, events were unfolding in Europe that would have a far-reaching impact on Jesuit missionary activity around the world. After years of anticlerical attacks, particularly intense in France and Portugal, the Pope dissolved the Society in 1773. In Canada, the Jesuits were spared the immediate impact of the papal decree since the Bishop of Quebec refused to publicly proclaim the news of the Jesuit suppression. Still, it was not un-

til the 1840's that the Jesuits could continue their work in the Great Lakes Basin.

Prior to the suppression, the Society of Jesus had carried out missionary work in the Sault Ste. Marie area and all along the south shore of Lake Superior. Once re-established in the Great Lakes Basin, the Jesuits expanded their operations to the western shores of Lake Superior. In Fort William, the Jesuits worked not only with the European employees of the fur trading companies but with the Aboriginal people who had moved closer to the forts for economic reasons.

In the Northwest, the Ojibway people trapped and prepared the furs for trade at Fort William. They also provided company officials with fresh meat, fish and other foodstuffs. Many of these outposts were completely dependent on the Aboriginal people to supply enough food for the winter months. It is not surprising that some Aboriginal people who lived near the fort also provided

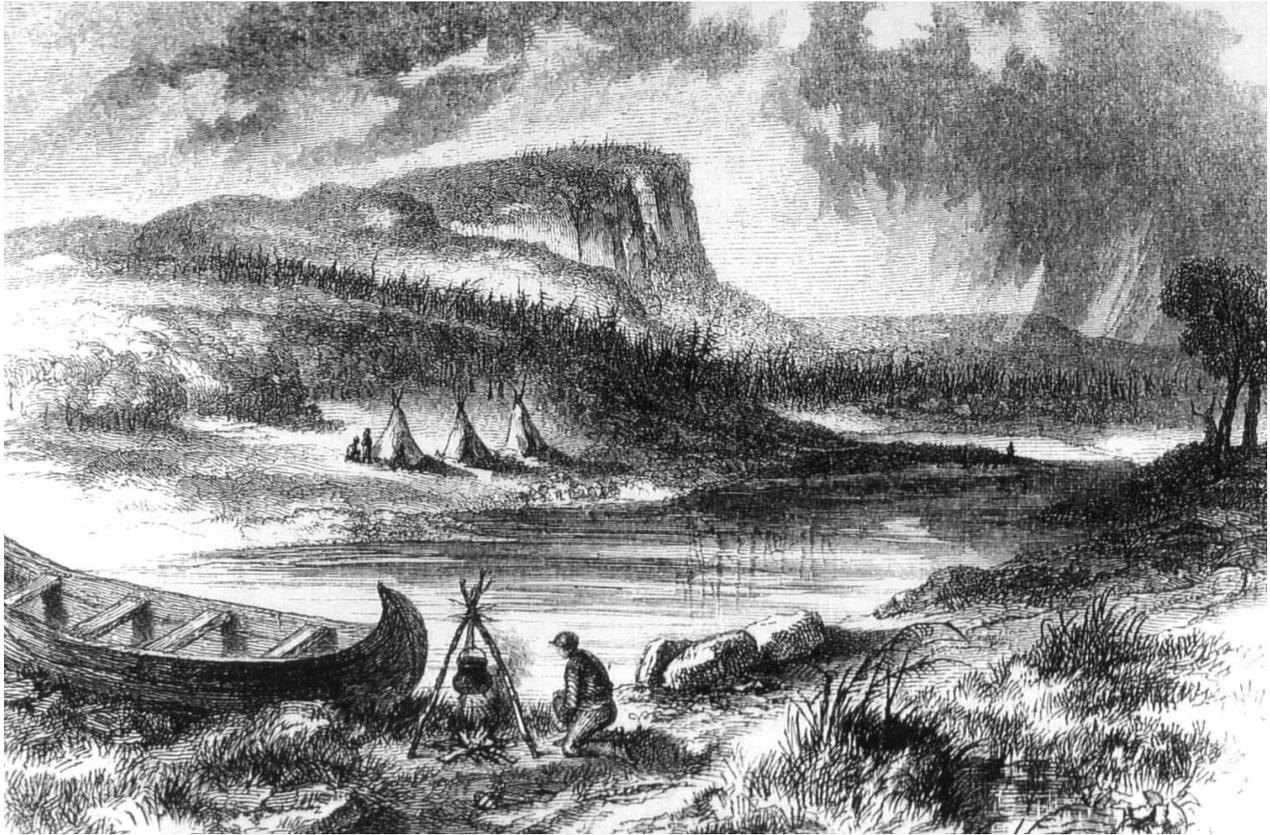


Figure 3. Anemki or Thunder Mountain in the Ojibwe language, known today as Mount McKay, is an area that remains a place of spiritual significance for the local Ojibwa. (Courtesy of the Thunder Bay Historical Society).

day labour when required. Fort William was transformed almost overnight by the establishment of a permanent international border between the United States and British territory in North America in 1783.

Suddenly finding themselves on the wrong side of the border, Canadian fur traders needed to relocate their operations north. In 1798, Roderick McKenzie re-discovered the Kaministiquia route, the traditional trade route of the Ojibway people to the west. Construction of a new trading post began almost immediately and when it was completed three years later, it was renamed in honour of William McGillvray of the North West Company. Fort William quickly became a hive of activity. Until 1814, there were only a small number of cabins built by the Aboriginal people, mostly located on the opposite site of the Kaministiquia River. The First Nations population grew around the fort as economic activity increased. Between 1829 and 1831, there were about 190 First Nations people

living in the area around Fort William. With the return of the fur trading post to Fort William, it was only a matter of time before the Jesuits would reluctantly transfer their mission back to the Lakehead.

At least one area Chief had lobbied the Jesuit to accelerate the transfer of the mission headquarters from Pigeon River to Fort William much earlier. Chief Peau de Chat of Fort William tried to persuade the Jesuits that such a move was in the best interests of both the fathers and the Ojibway. Although Father Chone had met with the Chief the previous year, he could not be persuaded to move his headquarters. There were simply no facilities for the Jesuits at Fort William. To entice the Jesuit fathers, Chief Peau de Chat offered to build a house and a chapel for the missionaries if they agreed to move their headquarters north of the border. Father Chone had good reason to remain in the United States. By remaining on the American side of the border, Father Chone hoped to

avoid the problems that he had with the British authorities during an earlier encounter at Wikwemikong. At first, the Jesuits hoped that the Ojibway at Fort William would simply relocate to the mission at Pigeon River. Father Chone had intended to travel to Fort William to persuade Chief Peau de Chat to bring his people to Pigeon River. Initially, the chief agreed to the move but later changed his mind. Many of the First Nations people of Grand Portage, Pigeon River and Fort William were closely related belonging essentially to the same band. Many moved freely across the border between these three communities and utilized much of these lands as a hunting ground.

What is most significant about the Jesuit missionaries was their devotion to record keeping especially in the maintenance of their journals and mission diaries. These journals challenge much of the conventional wisdom concerning relations between the missionaries and the First Nations in the nineteenth century. The journals also reveal that relations between the Hudson's Bay Company and the Jesuit missionaries were cordial. The factor at the HBC post turned a blind eye to the construction by the Jesuits of several buildings including several houses and chapel on company land even though it violated company policy. The journals also reveal some of the early terms that the Ojibway of Fort William would demand in exchange for a treaty with the Province of Canada. As expected, the journals provide keen observations into Ojibway customs and practices such as the annual work cycle. The journals also discuss the relative success of the missionary education among the Ojibway youth.

Conclusion. The Committee is currently completing the final edition of the pilot project. Initial reaction to the project has been positive. It is hoped that the project will provide a new generation of scholars with easier access to these original documents without the usual damage associated with working with paper in such a fragile state. The lessons learned by the Committee could also be utilized by other librarians, archivists and scholars to protect and disseminate other documents to a wider audience of academics without the associated risks to the original manuscripts.

Have Tape, Will Travel: The Polar Oral History Program at The Ohio State University

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Abstract. In November of 1999, the National Science Foundation awarded the Byrd Polar Research Center a grant in the amount of \$50,000 to support the proposal, "Talking Science and Exploration: Preserving the American Heritage of Polar History Through Oral History Interviews." The main objective of the grant was to interview fifty scientists, military personnel, and veterans of polar expeditions who were active in the Arctic and Antarctic during the 1930s, 1940s and 1950s. The audiotapes and supporting documentation would be preserved and maintained at The Ohio State University Archives and made available for research.

To date, 86 interviews have been conducted, resulting in 164 cassette tapes of information, and exceeding the requirements of the grant. In addition, careful spending of the grant money has allowed transcription of 59 interviews. A complete list of the interviews conducted to date, including abstracts for those interviews, appears on our web page at: <http://www.lib.ohio-state.edu/arvweb/polar/oralhist/interviewed.htm>. In addition, all interviews have been cataloged in the traditional sense. Records appear in the OSU Libraries online catalog, with links to the abstracts listed at the Polar Archives web page.

This paper will discuss the entire Polar Oral History project, from its inception to date. Topics will include details concerning the interview process, as well as record keeping and access concerns, including access via the Internet. Finally, future issues concerning the project will be discussed.

Introduction. The United States has been active in Arctic and Antarctic exploration for the last eight decades. The explorers and scientists who led the way to scientific advances in the polar regions during the 1920s, 1930s, 1940s, and those who were the first scientists of the International Geophysical Year (IGY), possess a wealth of informa-



tion about the development and history of polar investigation. While many books and articles have been written about these early expeditions, first hand details were often not recorded. In fact, many leaders of early private expeditions restricted the writing by participants so that the expedition leaders could sell their accounts first. Many of these explorers and scientists are still living, but the opportunity to record this information would soon be lost, since many potential interviewees were/are in failing health. The proposal to launch an oral history program to capture this information was therefore based on an immediate need.

The Polar Oral History Program is a logical extension of the Byrd Polar Research Center Archival Program (BPRCAP) at The Ohio State University (OSU). In fact, historically, oral history programs in the United States have been based in archival collections; libraries and archives commonly house and provide access to oral history collections (Ritchie 1995, 131). The Byrd Polar Research Center (BPRC) is one of the oldest polar science programs at any university in the United States. Many scientists have been associated with the Center during some part of their polar careers. In addition, there are several prominent historical collections housed in the Archives. These include the Papers of Admiral Richard E. Byrd, Sir George Hubert Wilkins, the American Polar Society, the Frederick A. Cook Society, and related other collections.¹ The interviews generated as a result of the Polar Oral History Program are an excellent complement to these existing collections.

Objectives of the Project. In November of 1999, the National Science Foundation awarded a grant of \$50,000 to support the proposal, "*Talking Science and Exploration: Preserving the American Heritage of Polar History Through Oral History Interviews.*" Captain Brian Shoemaker of the American Polar Society, and Dr. Raimund E. Goerler, chief archivist of the Byrd Polar Research Center wrote the successful proposal (please contact the author for a copy of the proposal).

The overriding short-term goal and major objective of this project was "to talk with, record, preserve, and make available audio tapes of interviews from fifty to one hundred people who were active in the early years of modern investigation

of the polar regions." A list of 100 potential interviewees was created by Captain Shoemaker and was an essential component of the grant proposal. Especially important would be to conduct interviews with scientists and explorers whose experiences were not recorded in any other format. Specifically, the team of interviewers would obtain taped information from and about persons active in polar research from the 1920s through the 1950s. The tapes and all accompanying documentation would reside in the OSU Archives and would be made accessible to other scientists and scholars engaged in polar research. These interviews would be the foundation for developing a continuing program for the future, and the basis for the long-term goal, which was to develop a continuing oral history archival program at OSU, through regular interviews of those who work in the field of polar research.

Preparing to Conduct Interview. Early in the grant, a Polar Oral History Advisory Board, composed of Dr. Roger Trask, Dr. Dean Allard, Dr. Robert Rutherford, and Dr. George Mazuzan, was formed to provide guidance for the project. The members of the board were selected based on their expertise in history and/or polar studies. The first meeting of the board was held on November 15, 1999, at the National Science Foundation in Washington D.C., and included Captain Shoemaker and representatives from OSU and the National Science Foundation. This first meeting served to outline the procedures for the project, including the details about the goals of the project, the methodology for achieving those goals, and the specifics concerning who would be interviewed. In addition, future tasks were also discussed, such as the storage of the tapes, the transcription process, and access concerns.

Following the initial meeting with the advisory board, the team developed standardized procedures for conducting the oral history interview. There are several excellent sources that outline the steps for conducting oral history interviews (Oral History Association 2000; Ritchie 1995; Sommer and Quinlan 1999). It is important to note that this paper is not intended to be an inclusive guide to conducting oral history, but rather a synopsis of the process at OSU, with an emphasis on certain key points and particular aspects of the project.



For a thorough discussion on “how to do it,” please refer to one of these more comprehensive sources.

In developing the procedures for interviewing, the project team recognized that the interviewer should bring some professional expertise to the project. Interviewers should be trained in the interview process. Dr. Goerler had received formal oral history training through two different workshops sponsored by the Society of American Archivists. The primary interviewer, Captain Shoemaker, had also been formally trained during a 3-week course on conducting oral history taught by Charles Morrissey. Morrissey is well known in the oral history profession, and has been working as a free-lance oral historian since 1975 (Ritchie 1995, 18). In addition, the Midwest Archives Conference regularly sponsors a workshop on conducting oral history. Fortunately, one of these workshops was scheduled in mid-October of 1999, in the beginning phases of the project. Lynn Everett of the BPRC attended the two-day workshop, with the intent that she would then train the remaining interviewers (including the author) in conducting the oral history interview. Dr. Goerler, Capt. Shoemaker, Lynn Lay of the Byrd Center, and the author all conducted interviews for this project. In addition, the project team benefited from the experience of two remote interviewers. Karen Brewster of the University of Alaska, Fairbanks (UAF), conducted seven interviews in Alaska as part of the project. Ms. Brewster is an experienced interviewer who has been involved with interviewing of Alaskans through the UAF Oral History Program. Dian Belanger is the author of the forthcoming book, *Polar Pioneers: Building Antarctica's Age of Science*. In Ms. Belanger's research for the book, she interviewed “[representatives] of the early Operation Deep Freeze, IGY and Antarctic Treaty.” Ms. Belanger worked with Captain Shoemaker to conduct several interviews jointly, and also served as a valuable resource for the project as an ex-officio member of the advisory board.

In addition to knowledge of the mechanics of conducting the interview, the interviewers were expected to have some knowledge of the interviewee's accomplishments and career in order to formulate appropriate interview questions. Once the initial contact with the potential interviewee had

been made, and they had agreed to be interviewed, the interviewer asked the interviewee for a comprehensive resume. The interviewer also researched print publications written by or about the interviewee. This helped the interviewer to form a list of potential interview topics and questions. The question lists were shared among the project team, as well as with the advisory board. This was an important step in the process, particularly in the early phases of the project. It ensured that a standardized set of core questions were asked while tailoring each interview to the interviewee's respective career. The interviewer also shared the questions with the interviewee in advance of the interview, and invited the interviewee to add questions. Many guides to conducting oral history caution against this, because it is thought that it may cause the interviewee to give a rehearsed answer, rather than a spontaneous response. However, the project team's experience indicated that sharing the questions in advance was actually quite helpful. It gave the interviewee a chance to think again about that time of their lives and allowed them to prepare for the interview. Several interviewees stated that they had not thought about this phase of their lives for many, many years. It was good for them to have some “lead time” to recall the events.

Conducting the Interview. Due to the fragile health condition of many interviewees, the interviewer travelled to the interviewee in nearly every case. Most interviews took place in the interviewee's home, although several interviewees still maintained offices elsewhere (for example on college campuses) and those interviews were conducted there. Much of the interview process is simply common sense. For example, a quiet place to conduct the interviews was selected so as not to be interrupted by phones, pets, spouses, etc. Before beginning each interview, the equipment was tested, making sure that the tape recorder and microphone were working properly. A standard opening statement for each interview was developed. This included the interviewer's name, the name of the interviewee, the date, and the location of the interview. During the interview, the interviewer made notes summarizing the content of the interview, and maintained a list of proper nouns and acronyms, in order to check the spelling and

meanings later. In some cases, the interviewer took a still photograph of the interviewee. Interviewees were also asked about any documentation or other materials that they might have in their possession concerning their experience. The goal was not necessarily to garner materials for OSU. Rather, the interviewee was encouraged to deposit these materials in an appropriate repository or data center (OSU or otherwise), since family members may not realize the value of such items. Ideally, the interviewee could make decisions about these materials themselves, while they were still able, in order that the materials are placed in a repository for future use by researchers.

Immediately after the interview, the interviewee was asked to sign the release form (sometimes called the donor form). This is a very important step in the process. According to federal copyright law, both the interviewer and interviewee have joint copyright interest in the interview. A third party, museum, or any other sponsor of the interviews (i.e. the Archives) cannot legally use the interviews or make them available to researchers without a signed release form (Sommer and Quinlan 1999, 2). The release form gives OSU the copyright for the interview and, therefore, permission to use the materials. This document is also used to indicate whether or not any portions of the interview should be closed and for how long. It is of interest to note that of the 86 interviews conducted to date, none of the interviewees have closed any portion of their interviews.

At some point soon after the interview, the interviewer was expected to write an abstract of the interview, utilizing the interview notes and the audiotape of the interview if necessary. The purpose of the abstract is two-fold. First, the abstract serves as a summary and general guide to the topics covered in the interview. Indeed, in lieu of a full transcript, the abstract is the *only* access to the subject matter of the interview. The second purpose of the abstract is to provide the necessary information for the cataloging department to create the catalog record for each interview (more about this process follows below). The abstract was shared with each interviewee, for clarification and spelling corrections. All documentation, including notes, release forms, tapes, and abstracts were then transferred to the OSU Archives.

Organization of the Oral History Collection in the Archives. Out of the 86 interviews that have been conducted for this project to date, I personally interviewed only 4 people. The real work for me began with the organization of this vast amount of tape and paper that had been created. There were many issues to consider. One of the stipulations of the grant required that the interviews were to be cataloged. This would ensure that they would appear in OSU's local library catalog as well as national library catalogs. After consultation with the cataloging department, it was determined that the abstract was sufficient for cataloging purposes. Once the abstract was posted on the web site, the cataloger was notified so that the catalog record could be created based on the abstract. Another factor to consider was the coordination of the transcription process. Judicious spending of the grant money meant that funds were available for transcription. Issues concerning the final format of the transcript were considered. Should the transcript be printed, or was an electronic copy enough? In the end, the project team decided to retain a print copy of the transcript, as well as an electronic version. Finally, what was the best way to advertise this new collection of material now available to researchers? It had already been determined that the cataloging record and a listing on the web site was the best way to do this. However, it had not been determined how much information should/could be posted on the site. Since the web services at the Archives are contracted out, this was also a financial concern. How much web work could we afford to do? Should there simply be a list of the completed interviews? It was determined that there was a need for some minimal level of descriptive information about the interviews. Therefore, it was decided that the abstract for each interview would also be posted on the site.

In addition to these virtual issues, there were physical issues to consider as well. These were matters such as organization of the notes, original tape audiocassettes, and other materials that may have been collected or generated during the interview process. It was quickly determined that a database would be the best method to keep track of the interviews, in all of their various phases. Captain Shoemaker had created his own hand written spreadsheet to keep track of the inter-



views that he had conducted. That information, combined with the information needed in the OSU Archives to organize the completed interviews, served as the basis for the database that was created in Microsoft Access. As each interview is conducted, the information is entered into the database and updated through each phase of the processing of the interview. Access allows any number of reports to be generated easily and enables the status of each interview to be checked at any given point in time.

Effects of Technology and the Internet. Computers and e-mail have enabled the project team to coordinate activities in a way that would not have been possible without them. For example, Captain Shoemaker conducts the interview, writes the interview abstract, and e-mails that to the OSU Archives. From the electronic abstract, the accession record for the interview is created, added to the database, cataloged, and the information posted on the web site. Fifty-nine of the 86 interviews have been transcribed. Once the initial transcription has been done, the transcriber e-mails the document to the interviewer. Copies are made and sent to the interviewee for their edit. The goal is that the interviewee should make corrections of fact, clarifications, and spelling. However, a number of interviewees have essentially re-written their interviews. They would argue that it is more important to be historically and factually accurate, even if it deviates from what was said during the interview. Some may say that this edited document then becomes something other than the oral history transcript. For this reason, the project team decided to retain all versions of the transcript.

There are numerous options for making this information available to users, due to computer technology and the World Wide Web. In fact, the question is not *whether* the information will be posted on the web site, but rather, *to what degree* the information will be posted. Currently, the completed interviews are listed on the web site with a brief (1-2 sentence) biographical statement². From there, one click of the mouse leads to the abstract for the interview. Complete interview transcripts are not currently posted, nor are actual sound clips from the interview. However, it is clear that patrons expect this information. No matter what kinds of statements one writes to

clarify what is available via the web, patrons will still say, "I found your great website, but I can't figure out how to listen to the interview online."

In browsing various oral history sites online, one will quickly find that there is a wide range of what is available. Offerings vary greatly, ranging from a listing of available interviews with brief summaries, to presenting the full transcript of the interview online. Other enhancements include an image of the interviewee, and selected sound clips from the interviews. Particularly useful are those sites that offer a subject index to the interviews. At OSU the plan is to make the interview transcript available on the website. Currently, if one requests an interview transcript, it will be e-mailed at no cost. This is a relatively easy task, since all transcripts, if they exist, are in digital format. If the patron desires a paper copy, the normal photocopy rate of .25 per page is charged. Audiocassette copies of the interviews are also available at the rate of \$15.00 per cassette.

Whatever is decided concerning the level to which materials are posted on the web site, it is clear that the Internet is the primary way that patrons are finding out about these interviews. Since the list and abstracts were posted on the website about one year ago, 18 requests for interviews have been received. The majority of requests have been for transcripts, although audiotape copies have been requested on several occasions. Typically, requests come from family members, or from researchers concerned with a particular topic, such as the Antarctic Treaty. Posting the transcript to the web site will greatly enhance access to the subject matter of the interviews. This will allow patrons to search across the interviews for a particular topic, and retrieve those interviews that interest them. A counter will be added to the web page in order to track the number of requests. It is important to note that the transcripts will not be made available in any format without the signed donor agreement.

Critical Review of the Project. In the beginning phases of the project, the team was very concerned with accomplishing the minimum required number of interviews (50) as dictated by the requirements of the grant. Therefore, the interview process was approached from a geographical standpoint. The original potential interviewee list



that had been submitted with the grant was grouped according to geographic location. The initial interview trips were planned according to how many interviews could be conducted on a given trip. This number varied greatly, ranging from one interview to as many as 12. For example, I travelled to Arizona and conducted three interviews. Dr. Goerler travelled to Texas and conducted 4 interviews on that particular trip. In general, the project team found it difficult to conduct more than one interview on any given day. In addition, Dr. Goerler, Ms. Lay and I found it difficult to be away from our other responsibilities, at work and at home, for any longer than one week. On the other hand, Captain Shoemaker, the principal interviewer for the project, conducted as many as 10 to 12 interviews on one trip. This was a very cost efficient method for conducting interviews. It should be noted that Captain Shoemaker is retired, which gives him the flexibility to travel for several weeks at a time to conduct interviews.

After only a few months into the project, it was realized that it would not be a problem to meet the minimum numerical requirements of the grant. The number of interviewers quickly dwindled, so that Captain Shoemaker was the only interviewer. This happened due to one factor – time. As mentioned previously, Captain Shoemaker has retired and, simply put, he has the time to travel and conduct the interviews. The other members of the team are still active in the workforce, making extensive travel very difficult. Without the efforts of Captain Shoemaker, we could never have achieved the goals set forth in the grant.

Now that the goals have been met, the project team is assessing the potential interviewee list with a more critical eye. It seems logical to take advantage of geography when possible. On the other hand, it is essential that important interviews are not missed due to geographic inconvenience. The health of the interviewees should be a key consideration at this point. It is certainly more costly, in a monetary sense, to take a trip and conduct only one interview. Then again, a day trip can be a very efficient use of time for the interviewer. The real issue is that if an individual has made an important contribution to polar history, science, or research, they should be interviewed, whether or not they live near other potential interviewees.

Overview of accomplishments. To date, 86 interviews have been conducted. Approximately one half of those interviewed are scientists and the other half are military. At its conclusion, we estimate that 100 interviews will have been conducted for this project. In addition, 59 interviews have been transcribed. The interviews represent a widely diverse group, ranging from a dog driver on Byrd's First Expedition to Antarctica, to a filmmaker during IGY, to a career diplomat involved with the Antarctic Treaty negotiations. Information concerning day-to-day activities has been recorded, as well as the stellar moments of polar history and exploration. Some interviews have also resulted in additions to the polar collections at OSU. Photographs, diaries, and other materials have been received.

The plans for a future grant to continue this work are well under way. Last month, the project team met to plan for the next grant proposal, still in draft form. There will be some changes to the next proposal. Most significant is that enough money to compensate interviewers is being requested. In addition, funds to support the web work required to continue to enhance the existing web page, including posting entire transcripts to the site, are also being requested. Finally, the interviewee list will be assessed to consider whether some single interview trips may be necessary.

In conclusion, the goals and requirements of the project as set forth in the grant have been met. The project team is satisfied with the results, and is hopeful about securing funding to continue this work. More importantly, patrons are finding the interviews on the website and requesting them. This seems to be the best endorsement, since the over reaching goal is to provide researchers with additional resources in polar history.

References

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- Ritchie, Donald A. 1995. *Conducting Oral History*. New York: Twayne Publishers.
- Sommer, Barbara W. and Mary Kay Quinlan 1999. *Midwest Archives Conference Oral History Workshop*. Lincoln, NE: Oral History Association.



Notes

1. For a complete listing of the holdings of the BPRCAP, please visit our web site at: <http://www.lib.ohio-state.edu/arvweb/polar>.
2. Please visit our site at <http://www.lib.ohio-state.edu/arvweb/polar/oralhist/oralmain.htm> to see a list of completed oral history interviews.

Across Arctic America: The Hudson's Bay Company and Knud Rasmussen's Fifth Thule Expedition, 1921-1924

Anne Morton
Hudson's Bay Company Archives

Abstract. The Danish/Greenlandic explorer Knud Rasmussen (1879-1933) was a major figure in the 20th-century history of the Canadian Arctic. Yet he is not well known in Canada. The interest of Canadians in the history of the Canadian Arctic appears to focus on men who can be identified as Canadian, such as J.E. Bernier and Henry Larsen, or, failing that, as British. This may be motivated by simple chauvinism. Or perhaps anxieties about Canada's sovereignty in the Arctic and over the North-West Passage make Canadians reluctant to contemplate Scandinavian and American expeditions in Canadian territory.

The paper will examine the financial, material and political assistance provided to the Fifth Thule Expedition by the Hudson's Bay Company. In appreciation for this assistance King Christian X bestowed the Knight's Cross of the Order of the Dannebrog upon the Governor of the Hudson's Bay Company.

It may be redundant to introduce Knud Rasmussen in Copenhagen but this is an international gathering so perhaps a few words are in order. Knud Rasmussen (1879-1933) was born in Greenland, the son of a Greenlandic mother and a Danish pastor. His life was devoted to travel in the Arctic regions and to the study of the peoples of the Arctic. The Thule expeditions, which began in 1910, were financed by a fur trading station at Thule in northern Greenland. The most ambitious is the subject of today's paper. Its full English title was *The Fifth Thule Expedition: The Danish Expedition To Arctic North America, 1921-1924, Under*

The Leadership Of Knud Rasmussen. In the course of this expedition Rasmussen travelled, mostly by dog team, from Greenland right across the top of North America and on to Siberia. There were also subsidiary expeditions. The ten-volume report of the Fifth Thule Expedition is the most substantial printed record of the expedition and remains a monumental contribution to Arctic studies. *Across Arctic America* (1927) is Rasmussen's own account of his travels and the people he met. This has recently been re-issued by the University of Alaska Press. It is a delightful book and an excellent introduction to the man who wrote "One can never finish exploring a people" (Rasmussen, 1927, p.xiii.).

Some background on Canada in the 1920s will probably also be useful. Those of you who are aware that the Canadian nation dates back to 1867 may assume that year marked Canada's independence from Great Britain. In fact, independence was to be a gradual process and the connection between Britain and Canada remained close for many years.

The Arctic archipelago was one legacy of Canada's colonial past. It was transferred to Canada by Britain in 1880 and accepted without much enthusiasm, on the grounds that if Canada did not take it, the USA would. In fact, Canada's Arctic sovereignty was to be challenged not just by Americans but also by Scandinavians. In the 1920s the Canadian Government was concerned with Norway's potential claims, based on the discoveries of Otto Sverdrup. It was also agitated by certain remarks made prior to the Fifth Thule Expedition by Knud Rasmussen and the Danish Government which implied that they also questioned Canada's claim to the Arctic islands.

Such was the political context in which the story of the relationship between Knud Rasmussen and the Hudson's Bay Company (HBC) began in the spring of 1921. In April of that year somebody in the HBC's Winnipeg office noted a short news item, with the headline, "Denmark Sends Man To Complete Survey Of Land At Baffin Bay" which appeared in the *Winnipeg Evening Tribune* of April 16th. Dated Copenhagen, it read:

"The announcement has just been made here that Knud Rasmussen, the explorer, will head an expedition which will leave Denmark this year for the North American arctic archipelago, to investi-



gate the life and conditions of the Eskimos and to complete the survey of Baffins Land and adjacent territory.

The Denmark Government will contribute 100,000 kroner to the support of the expedition, which will leave Copenhagen on board the motor ship *Søkongen* and will remain in the field about two years" (RG2/4/63, 25 Apr. 1921).

On April 27th Edward FitzGerald, Deputy Chairman of the HBC's Canadian Advisory Committee, wrote to George W. Allan at the House of Commons in Ottawa. Allan was not only a member of the Advisory Committee but also the Member of Parliament for Winnipeg South. A supporter of the Union government, Allan knew everybody worth knowing and was well placed to speak for the HBC. FitzGerald quoted the news story and then went on:

"I gathered in conversation with Mr. Stefansson last Autumn that there was a situation in respect of certain parts of the area in North Baffin island and adjacent islands, which had in it the possibility of misunderstanding between our Government and the Government of Denmark. I am not quite sure but I understood some claim had been advanced that Denmark had certain jurisdiction in the area roughly indicated above.

We have had under consideration for some time the establishment of posts at Ponds Inlet and Netchelik, situated on North Baffin Island. We have completed certain plans and have arranged to send one of our steamers to North Baffin Island this Summer and establish posts at these two points. We would naturally desire to explore into the possibilities of Ellesmere Island, a little to the north of Baffin Island.

I understand our Government would feel that the Canadian position could be even more emphatically demonstrated, if that were necessary, if our Government were aware that the Hudson's Bay Company is actually proceeding along these defined lines, and it occurs to me to ask you if you would speak to the Prime Minister or head of the Department concerned, and if they would care to have a memorandum submitted by our Company indicating this Company's activity in trading in the particular area referred to, we should be glad to submit such particulars." (RG2/4/63).

Allan passed this letter on to the Prime Minister, Arthur Meighen, who gave it to Sir James

Lougheed, the Minister of the Interior. On May 7th, having just received the letter, Lougheed wired FitzGerald requesting that he come to Ottawa "on the earliest possible train." (RG2/4/63). FitzGerald's presence was needed at a conference of the HBC's store managers, so it was the Fur Trade Commissioner, Angus Brabant, who boarded the train on May 10th.

The content of the discussion between the HBC and the Canadian Government can be surmised from two cables that the HBC in Winnipeg sent to the HBC in London on May 19th and 20th. I quote from them selectively:

"....question sovereignty northern areas which Canada claims and which [we] understand Denmark protes ..."

"Brabant represented us Ottawa returns Saturday meantime kindly consider question desirability affording Danes any assistance under circumstances as Canadian authorities naturally look for our co-operation maintaining territory British."

"...Brabant returned today states Government believe Rasmussen's expedition solely purpose advancing Danish claims STOP"

"To counter this Canadian Government sending police officials North on their steamer "Arctic" this summer to maintain Canadian rights STOP"

"Kindly withdraw support Rasmussen STOP"

"Government solicit our co-operation and intend appointing our post managers in magisterial capacity. (RG2/4/63)"

The request "Kindly withdraw support Rasmussen" referred to the co-operative relationship the HBC in London had been developing with the explorer, apparently with no thought that Canada might have a different point of view.

To step back in time a couple of months, on March 16th Rasmussen and Ib Nyeboe had called on Charles Sale, Deputy Governor of the HBC, bringing with them a letter from the Danish Minister. Nyeboe was the Chairman of the Committee which supported the Expedition. The two outlined their plans for the Fifth Thule Expedition and requested assistance with transportation and supplies, as well as a letter of credit. By transportation was intended not just passage for members of the Expedition but also the shipping of the artifacts and specimens Expedition members were going to collect. The Committee was to pay for what it re-



ceived but it should be noted that right from the beginning the HBC was made aware that there might be financial difficulties. According to Sale:

"[Rasmussen] thinks it possible that the number of the party might be diminished because of the difficulty of raising money. The Danish Government have undertaken to provide 50% of the expenses, provided private subscribers contribute the other half, but the present state of trade in Denmark he fears will render private subscriptions quite insufficient." (A.92/7/1, fo. 5).

The HBC had problems of its own. The fur trade was still recovering from the war and it was by no means certain that the transport and supplies Rasmussen needed would be available. It was suggested that the Expedition be postponed for a couple of years. Rasmussen was not willing to do so. He accepted that the HBC would do the best it could, which might be less than what he had asked for.

In the course of the meeting Rasmussen "promised to give proofs and assurances that he has no other object in view except that of scientific exploration." (A.92/7/1, fo. 5) This was a concern of the HBC, as Sale emphasized:

"I told him of the difficulties we had had with other people who professed to be Scientists and he has promised to address a letter to us within a few days giving references and guarantees which he feels sure will prove his good faith." (A.92/7/1, fo. 6).

Sale was probably not worried about Arctic sovereignty but about competition. He did not want to put the HBC's fur trade into the position of assisting someone who traded for furs under the guise of being a scientist.

The news that the Canadian Government did not wish the Expedition to go ahead could hardly have been welcome. After hearing from Canada the HBC in London telegraphed Rasmussen on May 21st:

"Have received cables from Canada which very seriously affect your expedition we can only explain details in person and therefore suggest you visit London immediately STOP Please answer soonest possible." (A.102/1962).

On May 26th London wrote to Canada:

"We cannot do anything more in the matter until Mr. Rasmussen has visited London, but while we shall arrange to co-operate with the Canadian

Authorities as desired, we think they are unduly alarmed." (A.102/1962).

Unduly alarmed or not the Canadians had to be placated, otherwise the HBC would be in an embarrassing position. Through the good offices of W. L. Griffith, Secretary at the Canadian High Commission, in early June a meeting was arranged at the Foreign Office so that Rasmussen could meet with Griffith and Sir Henry Lambert, the Associate Under-Secretary of State in the Colonial Office. Rasmussen wrote to Sale on the day of the meeting:

"...I placed my plan of the expedition before them, and explained to them the purpose of the expedition. They declared themselves quite satisfied as to the information given and promised to cable the Canadian Government...as soon as the statement promised by the Danish Foreign Office arrives here. Sir Henry and Mr Griffith thereafter asked me to inform you that the most useful thing you could do for me, was to wire your office in Canada already now, informing them that I today at this meeting had furnished satisfactory information, and that the official cables regarding my expedition being allright [*sic*] and of a purely scientific character without any interest in political matters, will be submitted on Monday." (A.92/7/1, fo. 9).

An exchange of cables followed and on 11 June 1921 the HBC in Winnipeg cabled London:

"...following telegram just received from Minister Interior Ottawa begins Am advised that Home Government has assurance Danish Government that Rasmussen Expedition has no political or merchantable aim but is an entirely scientific character and that no acquisition of territory whatsoever is contemplated we are agreeable the Hudsons [*sic*] Bay Company furnishing necessary assistance to Rasmussens scientific Expedition so long as in landing on any territories he does not dispute Canada's sovereignty on behalf of Denmark or any other Government ends." (A.102/1962).

Griffith was duly thanked by Sale in the following words:

"...I should like to express to you my own sense of the very friendly manner in which you negotiated the matter with the various authorities concerned. It has relieved us of the possibility of a very embarrassing situation had Mr. Rasmussen persevered in his plans without the full consent

and approval of your government." (A.102/1962, 28 June 1921).

Sale telegraphed Rasmussen:

"Delighted learn just before I left London that your visit completely successful STOP Will you give to my friends the option of acquiring sole rights for exhibiting in United States Canada and Great Britain any cinematograph films taken during your exploration remunerating you with percentage of net profits please answer to London STOP In any case best wishes for the success of your great adventure" (A.102/1962, 13 June 1921).

Rasmussen set off on June 18th, as he had planned to do. Much of the subsequent correspondence in the HBC Archives is with Ib Nyeboe of the Committee and deals in detail with the routine of supplying the Expedition. There are some interesting details, however. For example, in June 1922 "4 sets of woollen underwear" and "8 pair of socks for Mr. Knud Rasmussen himself" were requested. There was a note, meant to be helpful: "Mr. Knud Rasmussen is not heavy and not of a high stature." (A.92/7/1, fo. 32-33).

Of course, as Rasmussen had to make contact with HBC posts every so often and as his purpose was to study the people of the Arctic, he in turn was often the object of observation and comment. In *Across Arctic America* (p.41) he himself remarked on how wonderfully the stalwart men of the Royal Canadian Mounted Police kept track of everything:

"It was strange to us to meet with police in these regions; and we were at once impressed by the energy with which Canada seeks to maintain law and order in the northern lands. The mounted police...has here to relinquish its splendid horses and travel by dog sledge, making regular visits of inspection over a wide range of territory.

In 1922 an RCMP officer met up with the Expedition at Chesterfield Inlet and reported on their activities and plans. His final paragraph reads:

"The only harm I can see in the expedition conducted by Dr. Rasmussen is that wherever he goes he gets the Esquimaux around him in order to learn their folklore, songs, etc., paying and keeping them during the period they are with him. This naturally prevents the men hunting and the fur collection naturally suffers." (A.102/1962, Oct. 1922)

The fur trader, Captain Henry Toke Munn, per-

haps best remembered today as the author of *Prairie Trails and Arctic By-ways* (1932), was another observer of Rasmussen's activities. On the basis of information received from the Inuit he came to the conclusion that someone acting on Rasmussen's behalf was in fact trading for furs with the people he encountered. This would have been in violation of the promises he had made to the HBC and to the British and Canadian Governments. The whole issue is a fine example of how misleading circumstantial evidence can be, because in the end the mysterious trader turned out to be Jean Berthe of Revillon Freres. (RG2/4/63, 28 Sept. 1923) But at the time Captain Munn created quite a stir. In August 1922 the Captain had arrived in northern Baffin Island in anticipation of trading with Igluliut natives who never arrived. He blamed his wasted money and effort on Rasmussen.

Around New Year's 1923 Captain Munn visited the HBC in London to discuss selling his business to them. In the course of the meeting he accused Rasmussen of engaging in the fur trade. (A.92/19/121, 4 Jan. 1923) This time it was London who felt compelled to write to Canada, asking what was known about the truth of the allegations. The allegations were contrary to what HBC men such as Ralph Parsons knew of Rasmussen's activities and so Canada asked for proof. (A.102/1962, 15 Feb. 1923)

A 7-page typed document with the title "Explorers Ethics/Past & Present" was the Captain's response (A.102/1962). Captain Munn was a Fellow of the Royal Geographical Society and it is obvious that he was familiar with Rasmussen's writing and activity. But his admiration did not reduce his indignation at the thought of Rasmussen using science as a cloak for trading. Fueling his indignation was the contrast between the way the Danish Government protected Greenland – "a gun boat patrols Davis Strait to warn vessels away" – and the welcome accorded Rasmussen by "the friendly Canadian [Government]". The Captain's diatribe concludes:

"It will be retorted the above is merely the grouse of a disappointed trader. It is. But it also the legitimate protest of a good Canadian who has lived and voted in the Dominion for 25 years.

That greatest of fur Trading Companies The Hudson [*sic*] Bay Company have also established



stations in the neighbourhood of our small enterprises. Good luck to them. We can meet them and trade vigorously against them without the thought of any injustice rankling us for they are, like us, a British Company; like us they pay their customs duties and their licence dues and ask no favours from the Canadian Government we cannot obtain also. The red ensign of the Company with H.B.C. on it is known all over Canada.

But it is no skull and cross bones flag labelled "science".

These allegations were passed on to O.S. Finnie of the Department of the Interior, who replied "We have kept track of Mr. Rasmussen as far as possible" (A.102/1962, 31 Mar. 1923) Reports and letters from Sergeants Douglas and Joy and Inspectors Frere and Wilcox all indicated that Rasmussen was behaving correctly and, moreover, had bought a trading and trafficking licence in August 1922. (A.102/1962, 1 May and 11 Oct. 1923)

Meanwhile, the Expedition was getting on with its work, assisted by the HBC and by Ib Nyeboe of the Committee. Nyeboe, back home in Copenhagen, seems to have had little of the fun and much of the worry. As he once poignantly remarked "...this Expedition like most expeditions is pretty hard up" (A.92/7/1, fo. 42) How to pay what was owed the HBC was a constant source of anxiety. It did not help that the Expedition had outgrown its original plan, and really become four expeditions instead of one. Nor did it help they had to pay the going rate at the posts where the cost of transport naturally made prices much higher than in southern Canada. Nyeboe drew up a chart of prices for eight basic items, showing the difference between Montreal and Arctic prices. The first item, Coffee, sold for 54¢ a pound in Montreal, whereas at the HBC's northern posts the cost ranged from \$1.25 to \$1.80. (A.92/7/1, fo. 51 & 53)

And it could not have been fun to take part in three-way correspondence between Copenhagen, London and Winnipeg, which contained stimulating exchanges such as this:

"This difference originates from the fact that we have supposed the "band steel" (\$124.80 less 20%) and the "24 pcs sled shoeing" (\$62.40 less 20%) on invoice 7184 were both comprised in the item "sled shoeing" on invoice 7494 (\$91.38)" (A.92/7/1, fo. 54).

Nyeboe repeatedly had to ask for time to pay up. A bill sent in November 1922 was paid, plus interest of 5%, in February 1923, as the Committee had to wait for money from the Danish Government (A.92/7/2, fo. 17; A.92/7/1, fo. 36) In June 1924 the HBC's indulgence was asked in settling an account for over £2000. (A.92/7/1, fo. 65) Most of this was paid in August, when Nyeboe wrote:

"...we take the opportunity to thank you very much for your great patience, but as stated several times before, the Expedition which was intended to cover only a small part of Canada, has explored a rather great part of this country, which we hope will be to the benefit of Science." (A.92/7/1, fo. 67).

By January 1925 the sum of £2,664 – and sixpence – was owed to the HBC (A.92/7/2, fo. 54). Nyeboe wrote to say that their trading station in North Greenland had always been able to pay for the Thule expeditions in the past and they expected it could pay for this one too. Would the HBC wait until the fox skins arrived in September? (A.92/7/1, fo. 71) Rasmussen was in London several times in the summer and fall of 1925, and more than once visited the HBC for talks about the Arctic with Charles Sale and other executives. In appreciation of this, the HBC's London Manager, P.D. Stirling, wrote Nyeboe on 16 November 1925:

"We have had the pleasure of several conversations with Dr. Rasmussen concerning his explorations in the Canadian Arctic and as a token of our appreciation of the valuable services which he is rendering to the cause of civilisation we have instructed our Accounts Department to reduce the amount of the enclosed account for supplies from £2,712.4.9 [the sum had risen as additional bills came in] to £2,200..." (A.92/7/2, fo. 70).

Naturally, Nyeboe was pleased by this; unfortunately, the price of fox skins was very low. Nyeboe wrote:

"For this reason, we have decided not to sell our skins before the auction in January, and we now beg you to be kind enough to allow us to wait to pay the said sum until then and by this add another courtesy to the many shown us before." (A.92/7/1 fo. 88).

Sale wrote "agree" in the margin.

Nyeboe wrote again on 18 March 1926 asking

for an extension until the fall. This too was granted. (A.92/7/1, fo. 91-92) Another extension was asked for on 20 April 1927. Nyeboe, in words that may strike a chord with many of us, explained:

“We had expected that the government in consideration of the unexpected great work which was done during the expedition would have allowed a second loan, but the government we have just now has on its program “saving by all means”.” (A.92/7/1, fo. 95).

This extension was also granted though for no longer than the end of October, by which time the account was settled. (A.92/7/2, fo.77, 80-81)

The correspondence between Rasmussen and the HBC continued until 1931, which was the year Sale left the Company. Mostly it concerned the exchange of books and information. I’d like to end by quoting from a letter dated 2 December 1926, when the bills were still not paid, which Rasmussen, in New York, wrote to Sale:

“I have just been informed by the Danish Foreign Office that you have received the Royal Danish Order of Knights of Dannebrog for services rendered to my last expedition.

This honour gives me very great pride and satisfaction, supporting as it does, my own personal thanks for your courtesies and help which I have always felt unable adequately to express.” (A.92/7/1, fo. 93).

The Order of the Dannebrog, the national flag of the Danes, is awarded for a variety of services to the Danish state, including “progress made in science and in the arts to the glory of the nation”. The story of the HBC and Knud Rasmussen has several themes, all of which remain relevant. One is financial worry and the issue of how such re-

search is supported. Another is Canada’s anxiety about its Arctic territory. But the award of a Danish national honour to an Englishman for aid to a Danish expedition in Canada and Alaska symbolizes the theme of international co-operation that is at the heart of the Polar Libraries Colloquy.

Sources

The HBC’s principal source of documentation of the relationship between it and the Fifth Thule Expedition consists of four files:

HBCA, RG2/4/63, April 1921 – May 1925, is a subject file with the title “Knud Rasmussen”. It was maintained in Winnipeg by the Canadian Advisory Committee

HBCA, A.102/1962, May 1921- April 1926, is a subject file with the title “Rasmussen Expedition”. It was maintained in the Head Office in London.

HBCA, A.92/7/1, March 1921-June 1931, is the file of correspondence received in London from the Fifth Thule Expedition.

HBCA, A.92/7/2 is the file of correspondence sent from London to the Expedition, June 1921-June 1931. Both these files have been microfilmed (Reel 1033) and can be borrowed through Inter-Library Loan.

There is naturally a certain overlap of material among these files but unique material can also be found in each one.

For Canada’s Arctic sovereignty and Scandinavian challenges to it, see:

Francis, Daniel 1986. “The Scandinavians” and “Canada Claims The Arctic” in *Discovery of the North: The Exploration of Canada’s Arctic*. Edmonton: Hurtig Publishers.

Zaslow, Morris 1988. *The Northward Expansion of Canada, 1914-1967*. Toronto: McClelland and Stewart (The Canadian Centenary Series; 17)



Poster session

Polar Climate Resources at the Keith B. Mather Library, Geophysical Institute and International Arctic Research Center

Brian M. Hartmann
Alaska Climate Research Center, Geophysical Institute, University of Alaska Fairbanks

Julia H. Triplehorn
Keith B. Mather Library, Geophysical Institute, International Arctic Research Center

The Keith B. Mather Library located in the new International Arctic Research Center, Fairbanks, Alaska is the home for a wide array of long-term weather and climate sources for the polar regions. With an increasing interest in climate change at high latitudes, these data sets are an important research resource. A catalog of the sources has been compiled for dissemination to other polar institutions and agencies. This catalog will be available on the Alaska Climate Research Center website (<http://cli-mate.gi.alaska.edu/>) and in paper form as a Geophysical Institute Report. This catalog will include data sets in paper format as well as data sets available from electronic and web resources that our international users have found useful. Continuing efforts in the acquisition of more data are explored, as well as possible considerations and concerns for the archiving of existing paper data in universal digital formats.

Information Sources from Japanese Polar Research Organizations

Chisato Jimura
Keith B. Mather Library, Geophysical Institute, International Arctic Research Center University of Alaska Fairbanks

Introduction. Japanese polar research began in Antarctica in 1956 as part of the International Geophysical Year (1957-1958). The first Japanese Antarctic station, Syowa Station, was built on Ongul Island in 1957.

The National Institute of Polar Research in Japan conducts comprehensive scientific studies of the polar regions as well as organizing the Japanese Antarctic Research Expedition.

The other main polar research institutes belong to Hokkaido University, the Institute of Low Temperature Science and the Slavic Research Center.

The Frontier Research System for Global Change is one of the new type of international cooperative research groups founded by the Japanese government, located in Alaska and staffed by researchers from many nations.

National Institute of Polar Research
<http://www.nipr.ac.jp/index.html>

The National Institute of Polar Research was established in September 1973 in Tokyo as a national inter-university research institute.

The NIPR participates with SCAR (Science Committee on Antarctic Research) and IASC (International Arctic Science Committee).

Their primary fields of study are: 1) upper atmosphere physics; 2) meteorology, glaciology and oceanography; 3) earth sciences, including geology, geomorphology, solid earth geophysics and meteoritics; 4) marine and terrestrial biology; 5) polar region engineering.

The NIPR is composed of four centers: 1) Arctic Environment Center; 2) Information Science Center; 3) Center for Antarctic Monitoring; 4) Antarctic Meteorite Research Center.

The World Data Center for Aurora in the NIPR has a huge collection of auroral and geomagnetic data starting from the IGY period. The center also publishes data books and data catalogs.

Recent projects. Environmental protection of unique ecosystems of Antarctica is becoming more and more important. In accordance with the protocol on environmental protection in the Antarctic Treaty, the Japanese Antarctic Research Expeditions have begun a new program of monitoring global and regional environmental changes. It began at Syowa Station and the surrounding coastal and inland vicinity in 1997. The monitoring programs include major parameters of atmos-

pheric, glaciological, solid geophysical and biological changes, such as atmospheric carbon dioxide concentration, sea level, penguin populations etc. Pollutants in sea water, ice or snow and in animals, such as heavy metals and organic chlorinated compounds derived from global and regional sources, are occasionally measured.

The library. The NIPR library is open to the public. The library holds 20,000 books (13,500 English titles) and 3,200 periodical titles. *Penguin* is a library newsletter published annually. The *Catalog of Scientific Periodicals of NIPR* is also an in-house publication published every 5 years. The library has a website only in Japanese. However, the NIPR provides English as well as Japanese on their website. The library databases are accessible only from within the institute.

Publications. Arctic Record, Memoirs of National Institute of Polar Research, Advances in Polar Upper Atmosphere Research, Polar Bioscience, Polar Meteorology and Glaciology, Antarctic Meteorite Research.

Institute of Low Temperature Science, Hokkaido University

<http://www.lowtem.hokudai.ac.jp>

The objective of the Institute of Low Temperature Science is to conduct fundamental scientific research into natural phenomena in climatic low temperatures. The institute focuses on marine atmospheric sciences, cryospheric science, basic cryoscience, boreal environmental science and sea ice research. The Sea Ice Research Laboratory (SIRL), which is the only laboratory of the institute, conducts studies mainly on sea ice and coastal oceanography. The SIRL has successively operated a sea-ice monitoring radar network on the Okhotsk coast of Hokkaido since 1969. Three landbased radars monitor real-time ice field scenery along a 250 km coastline going as far as about 50 km out into the Okhotsk Sea

Projects. Following projects are on-going: permafrost disturbance and greenhouse gases; improving predictive capability of boreal forest response to forest fires; cooperative study of pattern formation in growing ice crystals; Japan-Netherlands joint symposium on crystal growth.

The library. The library serves only scientists, researchers and students affiliated with the Institute. Holdings include 30,000 books and 110 periodical titles. The library doesn't yet have an online catalog or a website. The library has a custom cataloging system.

Slavic Research Center, Hokkaido

University<http://src-home.slav.hokudai.ac.jp/index.html>

The Slavic Center (SRC) is Japan's only research institute for the study of Slavic countries. It is the national center to coordinate Slavic studies between Japan and other countries and has many visiting scholars. The Center holds symposia on various themes. The latest topics are: Quest for Models of Coexistence (1998), Russian region; Economic Growth and Environment (1999); Russian Culture on the Threshold of a New Century (2000). The Research Division has five sections: Humanities, International Relations, Economics, Political Social Systems and Geography/Ethnology.

The library. The library holds 95,900 books in foreign languages including U.S. and British Ph.D dissertations, and 6,400 volumes in Japanese. Approximately 590 periodical titles are available. The library has the largest and most comprehensive Slavic collection in Japan. Rare manuscripts, maps and other archives related to Russo-Japanese relations and the Russian Far East also enrich their special collection. The Library provides information on their website in both Japanese and English. Both sites are well maintained.

Publications. Slavic Studies, Acta Slavica Laponica, SRC Occasional Paper Series, Directory of Japanese Slavic and East European Scholars, SRC Newsletter (Japanese newsletter is published quarterly and English newsletter is published annually.)

Frontier Research System for Global Change

<http://www.frontier.iarc.uaf.edu:8080/>

The Frontier Research System for Global Change was established in 1997 by the National Space Development Agency of Japan (NASDA) and the Japan Marine Science and Technology Center (JAMSTEC). Frontier aims at studying mecha-



nisms of various changes in the global environment. Six research programs are ongoing: climate variations, hydrological cycles; global warming; atmospheric composition; ecosystem change; integrated modeling. There are two centers outside Japan. They are International Pacific Research Center (IPRS) at the University of Hawaii and International Arctic Research Center (IARC) at the University of Alaska Fairbanks. IARC is founded by U.S. and Japanese Government to cooperate research for the global change.

Projects in the arctic region. The Frontier at IARC is composed of two groups: the Coupled Ocean-Ice-Atmosphere System Group and the Multi-Disciplinary Group. Studying arctic climate change helps us to understand global change. Oceanography in the Bering Sea and Arctic Ocean and Geochemist of Terrestrial Ecosystem in the Arctic are characteristic of studies done at IARC. On the IARC Frontier's website, you will find data, research information, publications and news.

Museums relating with Polar Research. In recent years cities have opened unique museums with themes relating to the local ecology and cultures. One example is the Okhotsk Sea Ice Museum of Hokkaido, <http://www.ohotoku26.or.jp/organization/center/index/htm>

Another example is the Nakaya Ukichiro Museum of Snow and Ice, <http://www.ryuhyokan.com/index.html>. Dr. Ukichiro Nakaya (1900-1962) was the first scientist who produced snow crystals artificially. He was a pioneering scientist of snow and ice research. He wrote beautiful essays about snow and produced scientific films.

These two science museums teach the public about sea ice, oceanography, culture and nature in the Okhotsk area.

Shiretoko Museum, <http://www.ohotoku26.or.jp/shari/museum/home.html> is located on the Shiretoko Peninsula in the eastern part of Hokkaido. The peninsula was formed by volcanic activity

and includes deep woods with well-known biological diversity. The museum shows us Shiretoko's biological, historical and ecological information.

Electronic Information Sources from Japanese Research Institutes. We retrieve much information electronically these days. In Japan, information distribution in the Internet world is still under development because information disclosure is a new idea in the culture. Therefore Japanese research institutes have just recently opened their doors to the public. The websites that they provide need to be improved to include more information, be better organized and more user-friendly. I am concerned that the English versions of the websites for these institutes always have less information than the Japanese versions. I interviewed one of the librarians at the NIPR (National Institute of Polar Research) Library about their electronic resources. She explained that electronic information distribution is not common at the NIPR yet, but they plan to expand their electronic resources in the future

Italian policy for Antarctic data management: The Siria Project

*Silvia Sarti, Donatella Alesi, Mario Castorina
ENEA Antarctic Project – Biblionova*

The poster will illustrate the structure and the aims of the Italian Antarctic Metadata Project. Born in the framework of SCAR resolutions and the Antarctic Treaty System, the Project derives from the joint meeting of PNRA, National Council of Research and Italian Universities involved in the Antarctic research. The Antarctic Library will collect the list of publications edited by the 11 PNRA research projects.

The poster shows the bibliographic standard CEN 287 and the preliminary web interface adopted by the "ad hoc" Working Group.



19th Polar Libraries Colloquy Business meeting 20 June 2002

1. Financial report

| | |
|------------------------------------|--------------------------|
| Business Premium Account, 50097217 | £2,650.03 |
| | (Wenger Fund) |
| Community Account, 20092207 | £32.03 |
| Business Reserve Account, 90075132 | £6,041.94 |
| | Total £8,724.00 |
| | (2000 figure: £9,146.59) |

Major transactions

Business Premium Account

18PLC Auction raised \$1361 CDN agreed to write this off against \$1400 CDN for 4 Wenger Awards made to delegates attending 18PLC.

Business Reserve Account, Community Account

Credit £699.73 (6.07.2000)
\$900.00 credit from University of Colorado transferring funds originally deposited for compilation of the *Polar and cold regions libraries directory*

Debit

| | | |
|----------------------------|-----------|------------|
| PLC Bulletin No. 47 | £157.76 | (17.08.00) |
| PLC Bulletin No. 48-49 | £668.17 | (16.05.02) |
| PLC Bulletin No. 50-51 | £200.39 | (16.05.02) |
| Support for 19PLC (\$2000) | £1,395.73 | (02.05.02) |

2. Membership status and issues

New members:

Individual: James H. Anderson; Loretta Andress; Ralph Carlson; Guy Guthridge; H.G. Jones; Sue Kaplan; C-M. Naske; India Spartz

Institutional: Ajtte Biblioteket, Jokkmokk; Alaska State Library; Aurora College; Australian Antarctic Division; Consortium Library, Anchorage; CRREL; Dartmouth College; Eskimo Museum; Finnmark Fylkesbiblioteket; Finnish Institute of Marine Research; Fisheries and Oceans Canada; Ilisimatusarfik, Nuuk; Ilisagvik Colege, Barrow; Indiana State Library; Institut fur Eskimologi; IFRTP; International Arctic Science Committee; Lulea University; Museo Storico A.M., Vigna di Valle; National Library, Rana; NIWA Research,

Wellington; Norwegian Polar Institute; Nunatta Atuagaateqarfia; Nunavut Arctic College; Rasmusson Library; Rovaniemen Kaupunki; Stefansson Arctic Institute; Swedish Institute of Space Physics; Swedish Polar Secretariat; University of Alberta; University of Calgary; University of Colorado, INSTAAR; University of East Anglia; University of Lapland; University Studies in Svalbard; University Library of Tromsø; Z.J. Loussac Library.

| Totals | (pre-conference) | (post-conference) |
|----------------|------------------|-------------------|
| Individual: | 25 | 55 |
| Institutional: | 24 | 26 |
| Honorary: | 4 | 4 |

3. Newsletter report

The following report was submitted by the editors, Nancy Lesh and Cathie Innes-Taylor.

We began as the new editors of the *Polar Libraries Colloquy Bulletin* following the 18TH Colloquy in Winnipeg, and have produced two double issues.

Nos. 48-49, Fall 2000-Spring 2001 was sent to 369 people using a mailing list which had been developed over a number of years and needed updating since many of the people and institutions on the list were not current members of the PLC. We decided to mail this issue to everyone on the list and include a membership renewal form, the first time the PLC has solicited membership renewals by mail. The results were successful and we now have 101 paid memberships. The change from a large complimentary mailing list to one with only current members was a decision made by PLC members. The issue cost \$948.80 to produce and mail, but costs went down significantly for the next issue since only current dues paying members are now on the mailing list.

Nos. 50-51, Fall 2001-Spring 2002 was sent to the 101 current members and cost \$284.55 to produce and mail.



We would like to thank all the contributors to these issues! We could not have put out the *Bulletin* without you all. These folks include: Anne Morton, Julia Finn, Robert B. Stephenson, Garth Graham, Nora T. Corley Murchison, Sylvie Devers, Jean-Loup Rousselot, David W.H. Walton, Laura Kissel, William Mills, Stu Hibben, Kirsten Caning, Paul McCarthy, India Spartz, Ross Goodwin, Martha Andrews, Andie Smithies, Phil N. Cronenwett, Rick McGregor, Diane Brenner, Harry King, Arto Vitikka, Liisa Kurppa, and Susan Grigg.

Special thanks go to William Mills for keeping us correct on finances and the current membership, and to Loretta Andress, the *Bulletin's* production editor, without whom Cathie and Nancy would not be producing the *Bulletin*!

We intend to publish four "regular sized" issues over the next two years. We also want to increase our number of contributors and enlarge the coverage more fully throughout "PLC Land." We will be calling on our membership for help and appreciate your contributions in advance!

Please let us hear from you with comments, ideas for articles, reviews, etc.

Thank you for letting us have the fun of producing the *Bulletin* and for the opportunity to work with all of you!

4. Wenger Proclamation

This following resolution proposed by Ron Inouye, and supported by an accompanying letter from Paul McCarthy, Director of Libraries and Information Technology, University of Alaska Fairbanks, was passed by acclamation:

Whereas, the written accounts of first contacts with Eskimos and Inuit are often difficult to identify, are frequently out of print, or are located in collections scattered around the globe; and,

- whereas, many of those first accounts are in sources not easily accessible to contemporary Eskimos and Inuit, students, scholars and researchers; and,
- whereas, the dream of Hubert Wenger to provide that information via electronic technology has been achieved following 12 years of development; and,
- whereas, Hubert passed away in 1995 but his

vision has been continued by his wife Beatrice; and,

- whereas the physical and intellectual worlds of Eskimo/Inuit first contact literature are now available globally in the Hubert Wenger Eskimo Database on the world wide web;

Now therefore be it resolved that the 19th Polar Libraries Colloquy assembled in biennial meeting in Copenhagen, Denmark, this June 2002, extend its appreciation and congratulations to Beatrice Wenger and the members of the project staff for accomplishing Hubert's dream of opening a door to the first contact literature for the residents and scholars of the Arctic.

5. 20th PLC venue

David Walton now took over as chair. Invitations were presented by Julia Finn on behalf of the Department of Indian and Northern Affairs, Ottawa, and Martha Andrews on behalf of CSIRO Marine Research and the Australian Antarctic Division, Hobart, the latter being for a meeting held jointly with IAMSLIC. Delegates were invited between these two attractive venues, together with a third proposed on behalf of the Steering Committee: that the main venue be Ottawa but a PLC 'day' be held in Hobart. This option had been previously discussed with organizers of the Hobart meeting. Of 47 votes cast: 27 were for the third option (Ottawa and Hobart), 12 for Hobart, and 8 for Ottawa. Ottawa was therefore chosen as the main venue and the Steering Committee was to approach IAMSLIC concerning a suitable PLC contribution to Hobart.

6. Any Other Business

The following resolution proposed by Dennis Stephens was adopted by unanimous acclamation:

Whereas, the Polar Libraries Colloquy is a formal international organization which yet prizes its informality and is dedicated to the goal of identifying, gathering, preserving, and providing access to Arctic and Antarctic information resources, and encouraging and guiding their use;

- and whereas, individual members of the Colloquy have made valued formal and informal contributions to this goal;
- and whereas, the Colloquy recognizes that life is short, geologically speaking, that comradeship is an ultimate measure of our stay on this planet, that this individual has been friend and wise counsellor to the Colloquy for over two decades, and that contributions to our goals should be duly acknowledged by the Colloquy;
- and whereas, this individual has been instrumental in gaining formal recognition of the importance of polar information access to the United States government through conceiving, developing, and obtaining funding for the U.S. Polar Information Working Group (aka US-PIGS), and thereby indirectly but effectively obtaining financial support for the Colloquy;
- and whereas, this individual is one of the few who have participated in the Colloquy since its origin as The Northern Libraries Colloquy in 1971, and therefore has become the *ipso facto* historian of the group, her authority confirmed by this remark overheard at the present Colloquy: “If Martha says it happened then, it happened then.”
- and whereas, this individual through direct participation in the original printed version of the *Arctic Bibliography*, and through formal and informal efforts over a twenty-year plus period was instrumental in obtaining the funding to digitise the *Arctic Bibliography*;
- and whereas, this individuals’ formal contributions to the Colloquy have included a series of well-researched papers, co-hosting a meeting in Boulder in 1988, as well as many thoughtful contributions to session discussions, and whose informal activities at meetings are best left undetailed here but are recognized as being lots of fun;
- and whereas, Martha Andrews has indicated that this the 19th Colloquy will be her last before formal retirement, though we hope to see her continued participation for three more decades at least;

Now therefore be it resolved that the Colloquy at its 19th meeting in Copenhagen recognizes and acknowledges the contributions of Martha Andrews by confirming upon her the title of Polar Libraries Colloquy Elder.

The following resolution concerning information and data loss issues was moved by Lyle Perrigo and adopted unanimously.

Be it resolved: The Polar Libraries Colloquy and its members should create broader general awareness of and responses to information and data loss issued by outreach and collaborative programmes. These efforts should be with and involve scientific, technical, and historical organizations; local, regional, and national governmental agencies and bodies; colleges and universities; the media; and the general public.

The following resolution moved by Phil Cronewett was adopted unanimously.

Whereas, the 19th Polar Libraries Colloquy has been a stunning success, intellectually, socially, and gastronomically; and

- whereas, the Danish Polar Center has set a remarkably high standard in the planning and execution of an international conference; and
- whereas, even the weather appears to respond to the demands of the Center’s staff;

Be it hereby resolved that the assembled membership of the Colloquy offer its warmest thanks to Director Hanne Petersen, to Kirsten Caning, to Kirsten Eriksen, to Henning Thing, to Grete Dalum-Tilds, and, in particular, to Vibeke Sloth Jakobsen.

7. Election of Steering Committee

The following members were elected: Ron Inouye, Berit Jakobsen, Vibeke Sloth Jakobsen, Liisa Kurppa, Silvia Sarti.

Officers: David Walton, Chair; Betty Galbraith, Secretary-Treasurer

Ex-officio: Julia Finn (Convenor, 20th PLC); Cathie Innes-Taylor and Nancy Lesh (Editors, PLC Bulletin)

William Mills
Secretary/Treasurer

22.07.02



Programme

Monday, 17 June

9.00-10.00 Registration and poster set up

10.00-10.30 **Vibeke Sloth Jakobsen**, Chair 19th PLC Organizing Committee: *Welcome and conference announcements.*

Hanne K. Petersen, Director, Danish Polar Center: *Welcome speech*

Session 1: Cooperation in the online age

Chair: Betty Galbraith, Owen Science and Engineering Library

10.30-11.00 **Susan Grigg**, Alaska and Polar Regions Department, Elmer E. Rasmuson Library, University of Alaska Fairbanks: *Digital archives for Alaska*

11.00-11.30 **Break**

11.30-12.00 **Daria O. Carle**, Consortium Library, University of Alaska Anchorage: *ARLIS: a model for successful partnerships in the online age*

12.00-12.30 **Lynn Lay**, Goldthwait Polar Library, Byrd Polar Research Center, Ohio State University: *A collaborative effort to get online : a story of cooperation, frustration and success*

12.30-13.30 **Lunch**

Session 2: Information loss

Chair: Nancy Liston, Information Technology Laboratory and Cold Regions Research & Engineering Laboratory

13.30-14.00 **Victoria Tchourikova**, Institute of Mathematics, Novosoft Company, Siberian Branch of Russian Academy of Sciences: *The importance of making access to Russian libraries and archives easy (on the example of Siberian academic and Kamchatka remote ones)*

14.00-14.30 **Lyle D. Perrigo**, U.S. Arctic Research Commission: *Information & data loss and preservation issues : views of an engineer and a scientist*

14.30-15.00 **Panel discussion: Information loss**

Chair: Lyle D. Perrigo, U.S. Arctic Research Commission

Nancy C. Liston, Information Technology Laboratory, U.S. Army Cold Regions Research & Engineering Laboratory, **Julia H. Triplehorn**, Keith B. Mather Library, Geophysical Institute, International Arctic Research Center, **Ron Inouye**, University of Alaska Fairbanks, **Berit Jakobsen**, University Courses on Svalbard (UNIS)

15.00-15.30 **Break**

Session 3: Databases

Chair: Martha Andrews, INSTAAR, University of Colorado

15.30-16.00 **Kathleen Murray**, Health Sciences Information Service, Consortium Library, University of Alaska Anchorage: *Arctic Center for Health Information, Literature, and Data (Arctic CHILD)*

16.00-16.30 **Arto Vitikka**, Arctic Centre, University of Lapland: *Developing a map search interface for Arctic Research Institute database using GIS system integrated with SQL relation database*

16.45 – **Tour of the Danish Polar Center**, Strandgade 100 H.

Reception at the Danish Polar Center

Tuesday, 18 June

Session 4: The library users in the online age

Chair: Kirsten E. Caning, Danish Polar Center



- 9.00-9.30 **Satu Ihanamäki**, Rovaniemi Polytechnic Library & **Maija Koponen**, Rovaniemi Polytechnic Library: *The role of Polytechnic Library in learning in a sparsely inhabited province*
- 9.30-10.00 **Martha Andrews**, Institute of Arctic and Alpine Research, University of Colorado: *Electronically influenced changes in library users' behavior : a case study at INSTAAR*
- 10.00-10.30 **Helena Kokko**, Juvenile Department, Provincial Library of Lapland: *The library network and the active users in Lapland*
- 10.30-11.00 **Break**
- Session 5: Bibliographic resources**
- Chair: Julia Finn**, Indian & Northern Affairs Canada
- 11.00-11.30 **Nancy C. Liston**, Information Technology Laboratory, U.S. Army Cold Regions Research & Engineering Laboratory: *The bibliography on cold regions science & engineering – now and the future*
- 11.30-12.00 **Sharon N. Tahirkheli**, American Geological Institute: *The evolution of the cold regions bibliography project through migration and cooperation*
- 12.00-12.30 **Group picture**
- 12.30-13.30 **Lunch**
- Session 6: Picture collections**
- Chair: Dennis Stephens**, University of Alaska Fairbanks
- 13.30-14.00 **Silvia Sarti**, Antarctic Project – ENEA – National Agency for New Technologies, Energy and the Environment: *New trends of the Italian National Antarctic Research Programme Library : projecting a database of Italian Antarctic expeditions pictures*
- 14.00-14.30 **Teresa Mullins**, National Snow and Ice Data Center / World Data Center for Glaciology, Boulder: *Polar data sets at the National Snow and Ice Data Center : analog versus digital in issues of collection development, cataloging, archiving, and access*
- 14.30-15.00 **Grete Dalum-Tilds**, Danish Polar Center: *Historical Greenland online*
- 15.00-15.30 **Break**
- 16.00-17.00 Visit to the **National Museum of Denmark, Ethnographic Collection**, Ny Vestergade 10

Wednesday, 19 June

8.00-17.00 Field trip

The buses leave at 8.00 sharp from the old flying boat terminal, opposite Havnegade 55.

We proceed to Roskilde to visit the Viking Ship Museum, where a guided tour is arranged. Please board the buses in Roskilde at 11.00.

From Roskilde we continue to Esrum, where lunch will be served at the Nature Centre's organic café in the old millhouse.

After lunch we split up in two groups. One group visits Esrum Abbey, while the other takes a field trip with two of the centre's nature guides. After 1 1/2 hour we alternate.

Departure from Esrum at 16.00

Thursday, 20 June

Session 7: Arctic resources and collections

Chair: William Mills, Scott Polar Research Institute

- 9.00-9.30 **Fred Inge Presteng**, Norwegian Polar Institute & **Berit Jakobsen**, University Courses on Svalbard (UNIS): *Searching for Polar information in Norway*



- 9.30-10.00 **Julia H. Triplehorn**, Keith B. Mather Library, Geophysical Institute, International Arctic Research Center: *Library services at the Keith B. Mather Library for its international clientele*
- 10.00-10.30 **Sylvie Devers**, Fonds polaire Jean Malaurie: *French Polar research and resources*
- 10.30-11.00 **Break**
- 11.00-11.30 **Berit Jakobsen**, University Courses on Svalbard (UNIS): *Libraries at high latitudes*
- 11.30-12.30 **Business meeting**
Chair: Julia Finn, Indian & Northern Affairs Canada
- 12.30-13.30 **Lunch**
Session 8: Planning the future
Chair: Vibeke Sloth Jakobsen, Danish Polar Center
- 13.30-14.00 **Elisa Jeremiassen**, National and Public Library of Greenland: *A Greenlandic Inuk librarian's point of view on the future of Inuit libraries, language and literature*
- 14.00-14.30 **Dorthe Søndergaard Jørgensen**, Ilisimatusarfik – University of Greenland & **Erika Nielsen**, Groenlandica, National Library of Greenland: *Groenlandica / the National Library of Greenland and the library of the University of Greenland : past, present and future*
- 14.30-15.00 **James H. Anderson**, University of Alaska Fairbanks: *The University of Alaska Science Library : a digital-millennium solution to a traditional problem*
- 15.00-15.30 **Break**
Session 9: Polar literature
Chair: Anne Morton, **Hudson's Bay Company Archives**
- 15.30-16.00 **David H. Stam**, History Department, Syracuse University, New York & **Deirdre Stam**, New York Center for Books and Reading: *"Silent friends" : the role of reading in Polar exploration*
- 16.00-16.30 **Raimund E. Goerler**, Ohio State University Libraries: *"Alone", a classic of Polar literature : questions and answers*
- 17.00-18.00 Visit to the **Royal Library**, Søren Kierkegaards Plads 1

Friday, 21 June

- Session 10: Polar publishing**
Chair: Ronald K. Inouye, University of Alaska Fairbanks
- 9.00-9.30 **David Walton**, British Antarctic Survey: *Publishing and the scientific community*
- 9.30-10.00 **Open discussion: Polar publishing**
Session 11: International cooperation
Chair: Betty Galbraith, Owen Science and Engineering Library
- 10.00-10.30 **Philip N. Cronenwett**, Dartmouth College Library: *Bi-national electronic initiatives: the Stefansson experience*
- 10.30-11.00 **Break**
- 11.00-11.30 **Shirley Sawtell**, Scott Polar Research Institute, Cambridge: *From Baffin Island to Cambridge to Baffin Island : making available a special collection held in the SPRI to the Inuit community of Pond Inlet from where it originated*
- Session 12: Historic resources preserved for the future**
Chair: Dennis Stephens, University of Alaska Fairbanks
- 11.30-12.00 **Julia Finn**, Indian and Northern Affairs Canada: *The Indian Affairs annual reports (1864-1990) : a unique Canadian history source on the web*

- 12.00-12.30 **William Mills**, Scott Polar Research Institute, Cambridge: *Virtual Shackleton at the Scott Polar Research Institute*
- 12.30-13.30 **Lunch**
- 13.30-14.00 **Brian Walmark**, Nishnawbe Aski Nation & **Louise Wuorinen**, Lakehead University: *Whispers from the past. Part II*
- 14.00-14.30 **Laura Kissel**, Byrd Polar Research Center, Archival Program: *Have tape, will travel : the Polar oral history program at the Ohio State University*
- 14.30-15.00 **Break**
- 15.00-15.30 **Anne Morton**, Hudson's Bay Company Archives: *Across Arctic America : the Hudson's Bay Company and Knud Rasmussen's fifth Thule expedition, 1921-1924*
- 15.30 Colloquy ends
- 19.00 **Dinner, entertainment, auction at Gl. Dok Restaurant**



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