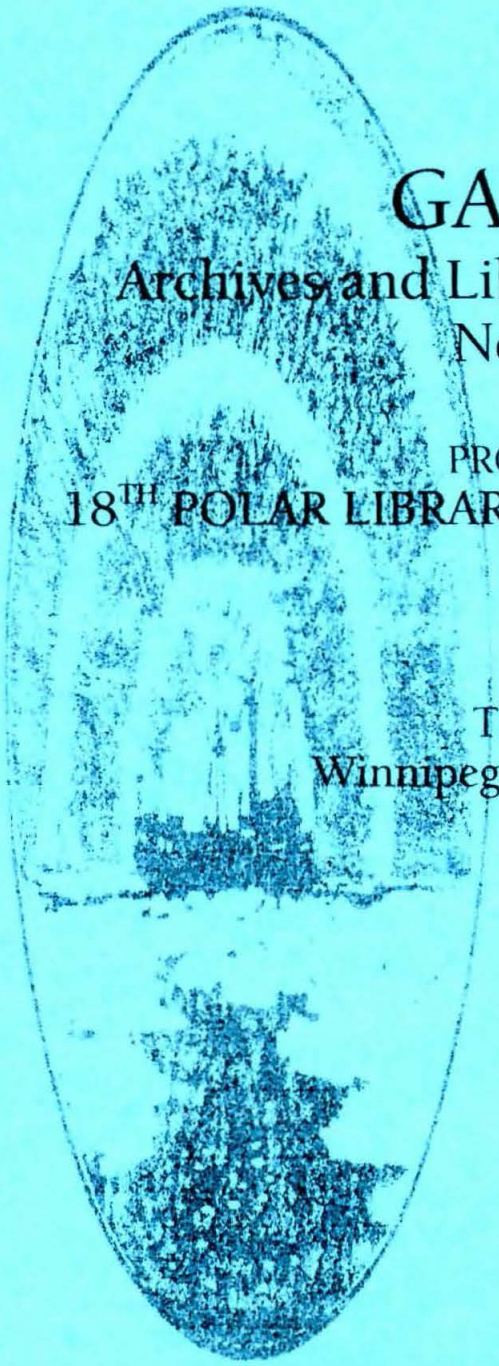

GATEWAYS:
Archives and Libraries Into the Next Millennium

PROCEEDINGS OF THE
18TH POLAR LIBRARIES COLLOQUY

The Fort Garry Hotel
Winnipeg, Manitoba, Canada
12-17 June 2000

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Archives & Libraries
Into the Next Millennium

Proceedings of the
18th Polar Libraries Colloquy
held at
The Fort Garry Hotel
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Edited by Barbara E Kelcey

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Minister's Welcome

Honourable Diane McGifford
Minister of Culture, Heritage and Tourism

It is my pleasure to welcome you to the 18th Polar Libraries Colloquy on behalf of the Province of Manitoba. We are happy to have you here.

As the Minister responsible for both heritage and tourism, I am particularly pleased that Manitoba should be the province to welcome the colloquy back to Canada. I understand the last time it took place in Canada was the 1984 meeting held in St. John's, Newfoundland.

I know you have just completed a tour of the Hudson's Bay Company Archives and the Provincial Archives of Manitoba. I hope you enjoyed the opportunity to see some of these records and have gained an idea of what a treasure we have here.

During the colloquy, you will be spending your time in formal sessions and also in visits to the University of Manitoba, The Manitoba Museum of Man and Nature, and provincial sites of historic interest and natural beauty. It is our hope, that you will leave Manitoba enriched by your experiences and that we perhaps may have the opportunity to welcome you again.

Polar regions have long fascinated those of us who live in warmer climates, going back in time to the early navigators who left Europe and continuing today with the less hazardous explorations of researchers, conducted through data collections, recorded experience, and images captured over time.

Speaking personally, as someone who has spent a good deal of my life undertaking research, I value the sharing of information among scholarly researchers. I deeply appreciate the work of librarians and archivists to preserve and make accessible information that informs our understanding of our world and society.

I commend your work in making your collective resources better known and more accessible through publications and the use of technology. Simply scanning the program for your conference suggests the global scope, impact and value of your work in many different disciplines and endeavours. Your institutions are indeed gateways to knowledge about our world.

Here in Manitoba, our government is privileged to hold the Hudson's Bay Company Archives which contain the records of the most important and longest-lived trading company ever to have operated in polar and northern regions.

Their presence here has helped make Manitoba a centre for the study of the human and environmental history of northern and Arctic Canada. You can imagine how pleased we were when they were donated to Manitoba and became a part of our Provincial Archives. Until then, they had been in London, England, their home for three hundred years. They are indeed a treasure , and we are taking steps to share our treasures with the world through the Internet, research services, and the loan of microfilm copies of the records.

Many of you have travelled long distances to be here. Some of you come from Canada's northern neighbours. Others are here from non-polar nations.

Whatever your point of origin, you are united by a common interest in the polar regions of the world, as well as a commitment to polar libraries and archives, and the sharing of polar information. This is crucial work. There is no substitute for meeting and talking face to face as we are doing now. I have every confidence that the time you spend in Manitoba will strengthen the bonds among you and among our countries.

I hope that when you leave, your goals have been met, and advanced. I also hope you take with you fond memories of our city, our province and our country.

In closing, I wish you an enjoyable, productive and inspiring stay in Manitoba. Please accept my best wishes for the success of this 18th Polar Libraries Colloquy!

"Information Is Not Pasta": the Antarctic Library Changes in the Gateway Age

Donatella Alesi
National Antarctic Research Programme
National Agency for New Technologies, Energy and the Environment
Rome, Italy

[Antarctica is] an invitation to all of us, and especially the younger generations, to understand more about the delicate balance on which the future of every living creature is based and develop a greater awareness of environmental problems.

FELICE IPPOLITO

A title – it has been said - is always at the threshold of meaning. In this case, it is used for according apparently opposite worlds through a word game and summing up the figurative and proper sense.

Ironically, I emphasize the classic symbol of Italian food for explaining the transition phase and the challenge of an Italian Antarctic library in the gateway age. All dictionaries and encyclopaedia I found explain that gateways are concerned with new technologies and dedicated communication software, hosts and databases. The term *gateway* can mean different things to different people and accordingly different uses, but for the purposes of this paper a point will have to be underlined: in the recently published *International Encyclopaedia of Information and Library Science*, gateway is defined as "the interconnection between networks which provide a path for the transfer of data between them". It is my opinion that the characteristics of the gateway proposed by the PLC are here summarized. Anyway, another term I would point out is the idea of *path*, clearly related to the word *passage*, which the Colloquy proposed to us.

I will discuss them starting from the Italian experience. I am aware of describing applications probably already well-established in other countries, but they are much too unfamiliar in mine. As you may know, the Italian National Research Programme library was established in 1985 with the aim of collecting the Italian scientific literature focussed on Antarctica and supplying research and information needs of a selected user community. According to its traditional function, for many years the library has performed selected and specific requests. There is considerable merit in devoting attention to these activities – collection and storage, retrieval and dissemination of recorded documents -- because they engage the traditional and formal requirements of any library. This role clearly illustrates the gateway concept as a *point of view* or a *passage* from the user to the library, from library to the user, and so on. It also connects the library function and service with paper documents. Its intellectual value is underlined and enforced by user needs.

The role described above could be considered the focus of every theoretical concept of the library in the present and the future. However, in a very short time, many changes have characterized the Italian National Research Programme life, its organizations and partners. The starting point of the re-thinking is always the Antarctic Treaty, which affirms some basic regulations about the scientific research and its institutional sites, to which truth every librarian would have to subscribe: the promotion of co-operation in Antarctic scientific investigation and the exchange of information between nations and between national scientific communities (see articles 2-3). When the Antarctic Treaty was signed in December 1959, someone wrote that a new era had begun for the seventh continent (Casarini 1996) and – I think – for libraries. As a whole, the Antarctic Treaty, whose fundamental text has been supplemented by recommendations and separate treaties and protocols, sums up the idea of a network of documents and texts strictly joined in a system (Bush, 1990).

As Edgar Allan Poe's *The Purloined Letter* tells us, the ultimate truth of the gateway is visible in terms of an opened passage towards a complex network and in terms of a dynamic progress from documentation to information. In this way, the Antarctic library cannot be only a supermarket, where users grab documents as though they would buy pasta. The library will look like a mall, if you appreciate the commercial image, of course.

The development of Antarctic science and research is the concern of institutions of the scientific community *as a whole.* The 15th PLC concluded that the relationship between libraries is simply the natural consequence of what we could say. In fact, it was at Cambridge that the gateway concept was announced for the first time. Dean Ashby described the famous world wide web site edited by the International Centre for Antarctic Information and Research (ICAIR) named the Gateway of Antarctica, introduced as a useful tool as an outgrowth of Internet resources, writing: "Our main aim is to provide a core of information locally, and more importantly, maintain links to as many other servers that provide Antarctic information on Internet. In this way, the Gateway to Antarctica will become exactly what it's name implies, a gateway to all Antarctic information on Internet."

Therefore the gateway concept is developed a hidden meaning. We could use the term *interconnection* as the only one capable of summing up choices, decisions, and actions in a complex system. We have obviously in mind the Internet, the network of networks, because our work is constantly influenced by rapidity of information dissemination and its transformation. What is interesting is the virtual dimension of networks related to the free interconnection of institutions and information sources, and free access as an answer to the changing information need in society (Shoot 1991).

When we say *interconnection* in terms of a modern gateway, diffusion and dissemination are not enough. The challenge of the Antarctic library is the management of data and products derived by various contexts and created with different aims (more remarkable value seems to have the configuration of Laponica Data Bank, illustrated during the conference, as a gateway between different products, organisms and user needs). Librarians themselves become information managers, mediators who exchange information and communication between end users and organisations balancing risks and opportunities (Couzinet and Bouzon 1997). I completely agree with the theory of polar information by Nicholas Flanders. At Cambridge, he pointed out the risk of disseminating scientific results passively, and the necessity of information value.

With this point of view, the Italian National Research Programme library has been involved in building the metadata named "South Pole" and a network with the National Antarctic Museum "Felice Ippolito" (MNA), whose centres are located at Siena, Genoa and Trieste. This project is aimed for the optimal use, as well as to improve dissemination of Antarctic research carried out by Italian scientists (**http://www.mna.it/**).

It is necessary to introduce a brief description of the birth and life of the National Antarctic Museum. Established in 1996 in the framework of the National Antarctic Research Programme (PNRA) and dedicated to Felice Ippolito. Ippolito was a famous Italian scientist who worked for the development of Antarctic knowledge in my country and whose words on Antarctica introduce the present paper. The Museum is managed by an Inter-University consortium between Genoa, Siena and Trieste. It has a polycentric structure, where sections are devoted to specific research topics. The **Genoa** branch supports research in biology, ecology, marine and terrestrial biological material. The **Siena** branch focuses the field of earth sciences, particularly mineralogy, lithology and glaciology; and **Trieste** preserves geological and sedimentological samplings and develops the history of Antarctic exploration. Each section is articulated in an exhibition centre, a study centre, sorting centre, a documentation centre, and the library.

At the moment, the Genoa section, which stands near the Aquarium, (one of the well-known project signed by the famous architect Renzo Piano) is opened to the public. This section, in co-operation with university researchers and scientific partners of the PNRA, provides a didactic centre, which plans laboratories and educational itineraries,

meetings, and experiments, with particular attention for the "making" of the Museum.

The Museum must meet the required social function developed by the Antarctic scientific research. This is the challenge of the PNRA in the new millennium in Italy which is so weak in the field of scientific knowledge. The Antarctic museum has to begin to build a network of exhibits and research, introducing innovations in the Italian museological tradition, starting from the re-evaluation of its cultural mission and the re-thinking of museology (Binni and Pinna 1989).

Promoting cultural activities on Antarctica in a local context, and with a changing audience, the National Antarctic Museum itself presents the image of a gateway as a passage for knowledge and scientific results between researchers and end users, students and visitors. At the moment, the Italian National Antarctic Research Programme and National Antarctic Museum libraries network is building a virtual library, whose heart is the PNRA section because of its activity, services and history. The serial catalogue, now available on the web (**http://www.pnra.it/cat_pnra/**), has been the first result. It has been initiated by Elisabetta Morani, with the co-operation of Museum personnel.

A potentially more remarkable value is for the retrieval of periodicals focussed on Antarctic science, generally scattered in university or departmental catalogues. The digital library is the new frontier for the cooperation of libraries/archives/museums. The Italian experience is but a little step toward this amazing evolution in gateway age. (Giordano 1998). After building the serial catalogue, we hope that the project will be completed next for books and the Italian bibliography as soon as possible. At the moment, the library web site is in progress.

Another example of the modern gateway is the relationship between the National Agency for New Technology, Energy and the Environment (ENEA) Antarctic Project and primary or secondary schools which began during the last winter with the project named "Adopting a school from Antarctica". Promoting an experimental laboratory between pupils and Italian scientists involved in Antarctic current expedition, the ENEA Antarctic Project is changing the institutional and academic image of the Italian National Antarctic Research Programme. During the last winter, some researchers used e-mail to describe the daily life of the Antarctic station, explaining current developments in their research and the progress of Antarctic research generally. Young students have started their own Antarctic web, which tells the story of the project and what the boys and girls have learnt about Antarctica, and have produced a multimedia CD-ROM to illustrate the experience and the possible future development of this project. For the next campaign, the ENEA Antarctic Project team is now considering the opportunity to organise a dedicated net between different schools, sharing information and contact between researchers in Antarctica, students and teachers.

The PNRA library has a role to play in supporting this project, by developing the juvenile literature collection and being aware of the Internet resources devoted to schools. Promoting young people's knowledge about Antarctica, the National Antarctic Research Programme, supported by the library-museum network, the Antarctic Project Didactic Team and the universities can really cultivate curiosity and, above all, attract future users and potential researchers. We could consider this project as an example of ongoing education for both professional and university research, which is the challenge of European and American countries in the third millennium.

User needs and profiles have changed; the type of documents have changed; the library is changing because it is becoming more and more an integrated system of different organisms, where each partner is an active *and* passive actor of information production and dissemination. We are living in a transition age – a time of opportunity for change in libraries, archives and museums devoted to Antarctica. We are obliged to work in co-operation because the boundaries between us are rapidly breaking down and hierarchies between kinds of documents, users and professional roles have been destroyed. The Antarctic library is in the unique and original position to experiment in developing services, products and partners while maintaining its traditional role. It must look at the Antarctic research function in the world-wide context.

It is true that the gateway – in the larger concept of interconnection about which this paper

has discussed – is a result of current development in Italian Antarctic resources in the libraries and museums based on a co-operative system. Therefore my goal here was to address a subject – pasta and Antarctic knowledge – of wide and general interest, and, above all, of more immediate relevance.

To conclude, I will offer a thought suggested by Norman Stevens at a conference on critical issues in co-operative library development, held at Indianapolis in 1979. This was probably the first conference which focussed on the question of networks in the perspective of a gateway age. Reviewing the history of the network concept, Stevens did not define the term, but advanced certain aspects of the definition with which I agree because it suggests the idea of an open and continuous meaning: "It is not, after all, the definition itself that is important. What is important is the question of how we came to where we are and what the fundamental aspects of the network concept are".

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The author gratefully acknowledges the review comments of Luciano Blasi (ENEA Antarctic Project) about the project "Adopting a school from Antarctica".

Preparation of an Arctic Bibliography Database

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Introduction

The Arctic Bibliography (Arctic Institute of North America, 1953-1975), is a valuable multi-volume guide to the literature of the arctic, edited mainly by librarian Marie Tremaine, (Andrews, 1988, p. 7-8). AB, as it is generally known, has been out of print for many years and its effectiveness has been hampered by the general unavailability of complete sets outside of a small number of specialist libraries, and by the lack of a compiled index to all 16 volumes.

When the proposal to digitize AB was written in 1997 (Mulvihill and Andrews, 1997), it was only possible to *estimate* the potential impact of an electronic AB on the universe of polar bibliography. Now that the American Geological Institute (AGI) has completed this project and the National Information Services Corporation (NISC, May 2000) has mounted the AB, along with a dozen other cold regions databases, on its Arctic & Antarctic Regions (AAR) CD-ROM and on its BiblioLine Internet service, it is possible to demonstrate: 1) the contribution AB makes to polar bibliography, and 2) the process of converting AB to an electronic database.

Section I. Contribution of AB to Polar Bibliography

Comparison AB/AAR

For the short study which follows, I have used the AAR CD-ROM (National Information Services Corporation, May 2000) which contains several of the major databases. Since there are some 960,000 records on AAR, I have used the number 1,000K in my calculations for simplicity's sake. Throughout this study, I have compared 1,000K, or all records on AAR, with 114,580, the total number of records in AB (including nearly 6,000 records from an unpublished volume 17 of AB made available to AGI from the Arctic Institute of North America) to demonstrate what AB adds to the information already on AAR. Searches were run in the expert mode using field tags, i.e., db=Arctic Bibliography, etc.

AB comprises 11.5% of the records on AAR which is a major addition simply in terms of records added. Only 7840 of these records are duplicates of records already in AAR. The majority (7274) of these duplicate records were found in three databases: COLD*, SPRI, and BOREAL. In these cases the AB records have become part of the composite records and the AB abstracts are a welcome enhancement. How does AB fit with the other databases globally searchable on AAR in terms of coverage of time, language, area and subject?

1. Time period covered. The earliest AB record is from 1674, and the latest is from 1974. From 1870 to 1950 (ex. 1900-1909) 29% (33,359) of AB records comprise 51% of total coverage for those years on AAR, a significant addition.

However, when we look at the period from 1950-1969, we see an even greater impact. 65% (75,024) of the records in AB are from 1950-1969. During that date span, AB records comprise 53% of the total in AAR, more than doubling coverage of the literature for those years.

2. **Foreign language coverage**. One of the major contributions of AB was its systematic coverage of the Russian and European literature. In AB, all foreign titles are included in AB records, and an English translation of the title is provided; abstracts are in English only.

Over all the years AB covered, this is how the languages break down: 43% of AB records are in English; 38% are in Russian; 7% are in Scandinavian languages; 6% are in German; 6% other

It was difficult to compare AB/AAR for this purpose since just over half of AAR records have a language tag. However the nearly 44K records in AB, in Russian, represent nearly 40% of all records in AAR with la=russian, a very significant addition to this dimension of AAR.

3. **Area coverage**. For AB, a defined Arctic was divided into approx. 70 regions with a map showing these regions (which varied slightly over the years) included in each volume. The area defined extended from the Arctic Basin to Alaska, across Canada to Greenland, northern Scandinavia, Finland, and the USSR, ending with Komandorskiye Ostrova. Most records were indexed to at least one of the 70 regions, as well as to geographic coordinates and the names of geographic features. All geographic names in the index were in then current authorized form.

When comparing area coverage on AAR, it must be kept in mind that AAR covers antarctic regions as well as arctic regions, and also covers cold regions phenomena wherever they occur. Even in AB not every record had an area descriptor.

Analysis of area coverage on AAR, showed that 51% (37,840) of the 73,801 records in AAR about Russia or USSR came from AB.

4. **Subject coverage**. AB's mission was to cover all subjects as they pertained to the arctic regions, more or less in proportion to the published record with no concentration of effort except in selected volumes of AB. (See below for special coverage of expeditions.) Composition of the original directing committee for the AB project assured that this was the case (Andrews and Tahirkheli, 1999, p. 251). AB is comprehensive and its multi disciplinary approach brings together information pertinent to defined Arctic areas from a great diversity of subject fields. All document types were included, and all records were indexed. to subject and specific topic.

Due to the number of databases on AAR, and the differences in the way each is indexed, a meaningful quantitative analysis of subject coverage was not possible. Instead, a variety of searches was conducted, showing that AB appears to contribute disproportionally to AAR in coverage of some subjects. Some of the interesting 'results' are as follows, expressed as AB/AAR:

- natural history or botany or zoology or human anatomy or physiology or bacteriology or animal or bird or insect or fishes or butterflies – 25585/82360 31%
- medicine or health or nutrition or diet or pathology or disease – 6037/21075 29%
- geography or anthropology or archaeolog* – 6394/25674 25%
- economics or sociology – 2962/6515 45%
  fur trade or hunting or sealing or whaling – 5403/17482 30%
- agriculture – 2487/4742 52%
  agriculture or forestry or grazing – 4150/10418 40%
- oceanograph or geo or glaci – 39313/233,417 16%
- explorer* or expedition* – 13998/32186 43%

AB has long been known for its extensive coverage of explorers and expeditions. AC points out (AC, 1968, p. 70) that in Vol.3. under "Expeditions" there follows one hundred pages giving the official name and dates of the expedition, and a bibliography of publications for that expedition, with the number for the AB record completing the entry. Several hundred expeditions cover over 100 pages of the index in a near "ready reference" format. The first three volumes of AB chiefly cover the years 1800-1950. These volumes are "the best guide to the literature of northern exploration and development during the nineteenth and the first half of the twentieth centuries" (AC, 1968, p.70). In addition to the expeditions information included in Vol. 1-3, Vol. 8 "carries also the first published abstracts of the British Parliamentary Papers on Arctic Expeditions, an heroic compilation from the 'Arctic Blue Books' by Dr. Andrew Taylor that lays open to easy use a hitherto un-indexed wilderness of primary sources of the greatest geographical and historical importance." (AC, 1968, p.71) The important coverage of the history of Arctic exploration by AB is enhanced by its references to biographies and to first hand accounts by explorers of several nationalities.

Section II. Preparation of an Electronic Arctic Bibliography

Background

The American Geological Institute has had a lot of experience in the digitization of printed bibliographies. In the late 70s, the AGI was involved in the digitization of the *Bibliography of North American Geology* and the *Bibliography and Index of Geology Exclusive of North America.* Both of these printed publications had been superseded by the Bibliography and Index of Geology, which was available both as a printed publication as well as an electronic file. These two bibliographies, containing more than 200,000 references, were digitized and added to the GeoRef file during the 80s. In the 90s, AGI digitized the *Abstracts of Chinese Geological Literature* and a former AGI product, *Geological Abstracts*. The goal behind all of these projects was to make the GeoRef file as comprehensive as possible for the geological sciences and to add as many abstracts to the file as possible.

The Arctic Bibliography contained many older references covering the history of the Arctic region including the British Parliamentary Papers, as well as many geoscience references that had never been added to GeoRef. The Bibliography and Index of Geology Exclusive of North America began coverage in 1933. Anything older was missing. All earlier geoscience literature from the Russian and Scandinavian region was of interest to GeoRef.

45212. Great Britain

A bill for more effectually discovering the longitude at sea, and encouraging attempts to find a Northern Passage between the Atlantic and Pacific Oceans, and to approach the Northern Pole. Ordered by the House of Commons to be printed, 9 March 1818. 9 p. (Great Britain. Parliament. House of Commons. Sessional papers, Bills public 1818, v. 1, no. 99)

First reading of a bill to provide a system of rewards (amounts not stated) for: accurately finding longitude at sea; accomplishing the Northwest Passage; and approaching within a degree of the North Pole. The bill was enacted May 8, 1818 as 58 Geo.. III, c. 20; it provided rewards for finding longitude, of £5,000, £7,500, and £10,000 according to accuracy achieved, with minor rewards for related experimental work of £1,000 annually; for a Northwest Passage, £20,000 was offered; and for approaching the North Pole, £5,000. **Copy seen: DLC.**

4467A. EKMAN, VAGN WALFRID, 1874. Om jordrotationens inverkan p? vindstr?mmar I hafvet. (Nytt magasin for naturvidenskapene, 1902. V. 40, p. 37-63) Title tr.: *Influence of the earth's rotation on wind currents in the ocean.*

Nansen observed during the drift of the Fram that wind-propelled currents at the ocean's surface had a systematic deviation by 20 to 40 degrees to the right. He explained this as due to the influence of the earth's rotation; further, he reasoned that any layer of the ocean would influence the layer below it not unlike the wind influences the sea surface, and hence the deviation of the current direction from the wind direction must increase with the depth of the layer below the water surface. He suggested a theoretical investigation of these conclusions, which Ekman carried out under a number of far-reaching simplifying assumptions and reported in this fundamental paper... **Copy seen: DLC.**

12752 OGNEV, G.N. Geologicheski nablyudeniya na Lensko-Amginskom vodorazdele. Leningrad, 1927. 2 p. l., 71 p., 1 l., illus., fold. Map, diagrs. (Akademya nauk SSSR. Komissiya poizucheniyu Yakuskoy Avtonomny Sovetskoy Sotsialisticheskoy Respubliki. Materialy, 1927. Vyp. 22) Title tr.: *Geological investigations on the Lena-Amga watershed.*

Geological study, based on observation made by the Aldan Geological Party of the Yakut Expedition of the Academy of Sciences, U.S.S.R., 1925-1926, during its journey in the summer of 1925 in the watershed of the Lena and The Amga Rivers in the general region 61° 30'-62 °N. 130 °-133°E. Account of the route, description of the Cambrian limestones, Jurassic freshwater deposits and Post-Tertiary deposits, followed by discussion in some detail of the and forms (lakes, dried lakes, sink-holes, salt springs, etc.) and their origin. Full bibliographic footnotes, and an index. Summary in English. **Copy seen: DLC.**

The abstracts that were produced for the *Arctic Bibliography* were complete and well written. The earlier portions of GeoRef did not contain a very high proportion of abstracts and the Arctic Bibliography was seen as a rich source of additional material.

Digitization

Progress in digitizing and editing for the electronic version of the Arctic Bibliography was reported earlier (Tahirkheli and Andrews, 2000). The process for digitizing any print material begins with a complete analysis of the printed product. References must be picked apart in order to parse them into appropriate fields in a computerized file. Rigid data structures had been maintained during the production of the *Arctic Bibliography*. Each individual reference contained information in a pre-determined order and with definite punctuation and capitalization. An analysis of the Bibliography revealed that 82% of the references were to journal articles. A preliminary structure of a journal article reference was derived and diagrammed as follows (punctuation and capitalization reflect the actual format in the *Arctic Bibliography*):

AB NUMBER. AUTHOR LAST NAME, AUTHOR INITIALS/FIRST NAME MIDDLE NAME, BIRTH DATE - DEATH DATE. Title. (Journal Name, Publication Date, volume, issue, pagination, illustrations) Number of references. Language Notes. Title Tr.: Translated title. Abstract. (Copy seen reference.)

Book references were different and followed the general outline below:
AB NUMBER. AUTHOR LAST NAME, AUTHOR INITIALS/FIRST NAME MIDDLE NAME, BIRTH DATE - DEATH DATE. Title (In: Editor/Publisher/Title of book, Publication Date, pagination, illustrations.) Number of references. Language Notes. Title Tr.: Translated title. Abstract. (Copy seen reference.)

After studying the diagrams we derived five main fields that would be initially coded for the Arctic Bibliography data. The five main fields were: **AB NUMBER** -- ID number from print; **AUTHOR** -- Authors or responsible organizations; **TITLE** -- Title and source information; **ABSTRACT** -- Abstract and holding library information; **INDEX** -- Sets of index terms from the back of the volumes

The AB NUMBER was listed in bold for each reference and was also used in the index to refer back to the citation. We decided to retain the AB NUMBER intact for all the references so that users could actually refer back to the number in the text if they wished. This also simplified our editorial work. The AB NUMBER began with 1 and ended with 108,723. For Volume 17, we applied a sequential counter to the references beginning with 108724.

The AUTHOR appeared immediately following the AB NUMBER in bold: OHLIN, AXEL GABRIEL, 1867-1903.

The TITLE contained the title and the source information including journal name, publication date, pagination, illustrations, language notes. This field posed the most problems for subsequent parsing.

The ABSTRACT always began a new paragraph following the reference and included the holding-library reference at the end in parentheses.

The INDEX appeared at the end of most volumes (for vols. 1 and 2, vol. 3 was the index) and contained hierarchical descriptors followed by the AB NUMBER. Geographic coordinates were provided for many geographic locations.

The next step in digitization of the Arctic Bibliography included deciding on a procedure. Optical character recognition (OCR) has improved, but tests with the volumes demonstrated that substantial editing would be required if the data were processed using scanners. The Arctic Bibliography is rich in mathematical symbols and diacriticals for foreign language titles. These symbols confuse the OCR programs and result in unreadable passages.

Data capture companies take data and re-key the data adding codes to allow future manipulation. Typically, the data is keyed twice and variances are edited. This approach combined with good original material results in 99.995% accuracy. Diacriticals and mathematical symbols can be retained using codes for non-keyboard characters. Characters unrecognizable to the operator are identified using coded question marks.

The Arctic Institute of North America also provided Volume 17 on index cards. The cards had been handwritten and/or typed and included editing marks. These cards presented a challenge for keying. The handwriting was, in most cases, extremely legible, but the editing marks were perplexing at times and it was clear that the marks on some cards were not intended for keying, but rather for supplying supplementary information to an editor. The best accuracy rate that could be obtained for this keying was 99.95% and the single-volume cost rose by an additional 30% to accommodate this unusual data.

Editing

Once all the data was keyed, the references were collected into a file and the index entries were associated with their references using the AB NUMBER that had been keyed along with the index terms. Four problems were quickly obvious:

1. The AB NUMBER was not always unique. Some numbers had been re-used during the production of the print. This appeared to be a result of typesetting error. Where two items had the same AB NUMBER, we kept one item and input the other item under a different number. Most of these items fell numerically in order where a number was missing, so we did not have to invent numbers.

2. When the AB NUMBER was not unique, the index entries had to be analysed and moved to the appropriate reference.

3. Some references had no index entries once all entries had been associated. This was usually a result of typesetting error and we were able to resolve all but eighteen records. For those eighteen records, no index entries were located.

4. Three entries were too large to be treated as a single record in our internal system. These entries occurred where a book was entered into the Arctic Bibliography with abstracts for all of the associated chapters. These entries were given unique ID numbers with letter extensions.

Authors

Primary and secondary author names were transformed in the following way: original HANNON, JOHN PATRICK and A. M. LARSON-result Hannon, John Patrick Larson,AM

Title

The Title field was parsed into Title1, Title2, Publisher, Publication Date, Volume, Issue, Illustrations, and Notes using clues from the punctuation and capitalization. Each field was sorted alphabetically and reviewed by an editor for appropriate assignment of fields. Where the parser had not made the appropriate assignment, the editor moved the data into one of approximately 25 specific fields. Title1 contained the title of an article. Title2 contained a combination of Collective titles, Serials titles, Conference titles and miscellaneous data that the parser could not evaluate.

Serial titles were targeted for special enhancement. ISSNs were added to records where possible. Serial titles were standardized when appropriate. Language information was available in the majority of the later references. An algorithm developed by the AGI was used to identify languages using title words. The algorithm identified 30% of the missing language records. The other 70% were evaluated by our editorial staff using a combination of tests based on an author's primary language, a journal's primary language and the editor's knowledge of major European languages. Language was assigned for 18963 items leaving 2713 items without language indicators.

Completeness tests

Once the initial parsing and editing was complete, the Arctic records were transferred to a final Arctic master file. Checks were run for the occurrence of author, title, publication date, pagination. Consistency checks were run for certain types of documents, i.e. if the item is a series does it have a volume or issue number, does the data within a field occur in the same order that it did in the original reference, have all special characters been removed, etc.

Availability

Currently the *Arctic Bibliography* has been added to the Arctic and Antarctic Regions suite of databases distributed by NISC. When the *Arctic Bibliography* was added to NISC, composite records were created for those items that already existed in the other databases. The *Arctic*

Bibliography contained a grand total of 114,580 items of which 106,125 are unique. Our current plans are to add the relevant data to the GeoRef file, provide the relevant Canadian data to the Arctic Institute of North America and to continue to make editorial improvements and corrections to the data in the Arctic Bibliography master file. The migration of records through the process from start to finish is reflected in the following record:

1. Original AB Ref - 1047
1047. BARABASH-NIKIFOROV, I. I. Mammals of the Commander Islands and the surrounding sea. (*Journal of Mammalogy*, Nov. 1938, v. 19, p. 423-29)
Contains a brief description of the natural conditions of these islands, and an annotated list of twenty-one species (with special attention to the arctic fox), including six whales, a porpoise, and six seals; with a bibliography (9 items).
Copy seen: DSI-M

2. GeoRef version
1047
$A01 00222372
$A03 Journal of Mammalogy
$A05 v. 19
$A08 O Mammals of the Commander Islands and the surrounding sea $A11 Barabash-Nikiforov, I. I.
$A20 p. 423-429
$A21 193811
$A23 EL
$LOAD_DATE 02/01/99
$SELECTED 1ST_PASS
$UPDATED 11616
$Z04 S
$Z05 A
$Z15G Contains a brief description of the natural conditions of these islands, and an annotated list of Twenty-one species (with special attention to the arctic fox), including six whales, a porpoise, and six seals; with a bibliography (9items).
$Z21 Bering Sea - - Mammals | Bering Sea - - Seals. | Bering Sea - - Whales. | Foxes - Arctic foxes - -Komandorskiye, Ostrova. | Komandorskiye, Ostrova - -Arctic foxes. | Komandorskiye
Ostrova - - Mammals. | Mammals - - Bering Sea. | Mammals - - Komandorskiye Ostrova. | Seals - - Bering Sea. | Whales - - Bering Sea.
$Z50 Arctic fox | Asia | Bering Sea | Canidae | Carnivora | Chordata | Commonwealth of Independent States | Eutheria |
Fissipeda | foxes | Kamchatka Peninsula | Komandorski Islands | Mammalia | North Pacific | Pacific Ocean | Russian Federation | Russian Pacific region | seals | Tetrapoda | Theria | Vertebrata | Whales
$Z61 Smithsonian Institution, U.S. National Museum @Washington, DC @USA

3. NISC version (from Arctic and Antarctic Regions, NISC)
DATABASE: ARCTIC BIBLIOGRAPHY
TITLE: Mammals of the Commander Islands and the surrounding sea AUTHOR: Barabash-Nikiforov, I. I.
SOURCE: Journal of Mammalogy, V.19; p.423-429; Nov. 1938
ISSN: 0022-2372 INDEX TERMS:
Arctic fox; Asia; Bering Sea; Canidae; Carnivora; Cetacea; Chordata; Commonwealth of Independent States; Eutheria; Fissipeda; foxes; Kamchatka Peninsula; Komandorski Islands; Mammalia; North Pacific; Pacific Ocean; Russian Federation; Russian Pacific region; Russian Republic; seals; Tetrapoda; Theria; USSR; Vertebrata
ABSTRACT:
Contains a brief description of the natural conditions of these islands, and an annotated list of twenty-one species (with special attention to the arctic fox), including six whales, a porpoise, and six seals; with a bibliography (9 items).
MAJOR TOPICS:
Bering Sea [Mammals]
PUB. TYPE: SERIAL
LANGUAGE: English
YEAR: 1938
PUB. DATE: Nov. 1938
AB HOLDING LIB.: Smithsonian Institution, U. S. National Museum, Washington, D.C.,
USA RECORD ID: AB1047
ACKNOWLEDGEMENT: Arctic Bibliography, electronic version, American Geological Institute. Digitized from the *Arctic Bibliography*, print version, prepared by the Arctic Institute of North

America.

Conclusions

The time period 1950-1969, for which AB provides the majority of references to the arctic literature, remains both scientifically and historically significant due to the Cold War and the burgeoning of US Government sponsored Research & Development following World War II. By the 1970s when Cold War tensions had eased somewhat, several science and technology bibliographic databases, funded by the US government came online (Andrews, 1990). They were expensive, and in some cases supported by the same funding agencies as AB. These agencies assumed that the new online databases would index the same literature as AB had, which proved not to be the case (Orr, 1977), but the production of AB was terminated nevertheless. Since the cessation of AB in the early 70s, unsuccessful attempts were made to interest funding agencies in supporting the digitization of a compiled index and/or a digitization of the entire work using OCR. Success was finally achieved in 1998 when NSF made an award (OPP-9729319) to AGI, Sharon Tahirkheli, Principal Investigator, for "Preparation of an Arctic Bibliography Database."

AB in its electronic form provides the only online coverage of specifically arctic regions for the time period it represents, although the other online databases (GeoRef, BIOSIS, CA, etc.) introduced in the 1970s, in some cases brought retrospective coverage online eventually. The information and data collected in AB on hydrology, glaciology, oceanography, and geology during the 1950s and 1960s, particularly from the USSR, enhanced ongoing data collection operations at all of the World Data Centres. Information abstracted in AB on agriculture, vegetation, health, and the social sciences provided base line studies for present day investigations. The bibliography included in AB on expeditions and explorers will stand for all time as the basis for studies of arctic exploration. All of this information is now widely available in a format meeting the high standards expected by researchers.

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Reference Questions We Have Known and Loved: Providing Reference Services at Indian and Northern Affairs Canada.

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Abstract

This paper looks at several of the challenges the Departmental Library at Indian and Northern Affairs Canada is currently facing in the provision of e-mail reference services. A sample of some of the Library's more unusual information requests is also highlighted

When Julia Finn first approached me earlier this year to see if I might be interested in giving a talk at this conference I reluctantly agreed. My hesitation stemmed mainly from the fact that I was somewhat at a loss as to what I might present since I had not recently worked on the type of special project I thought might be of interest to participants at a polar libraries conference. However, when I read the announcement for the 18th Polar Libraries Colloquy it occurred to me that the title of the Colloquy, "Gateways" resonated very well with how I view my role as a librarian working to create "gateways" between people and information. I did have quite a lot of recent experience at the reference desk and perhaps the participants might be interested in hearing about some of the challenges we are currently facing in providing services to clients.

In view of the Colloquy's goal of "looking into the future, facing the changing expectations posed by new technologies" it occurred to me that I could speak about the challenges we face at Indian and Northern Affairs in providing reference services. Perhaps this would be of interest to other librarians and archivists who are facing similar challenges. In this paper, I hope to first describe our services and then move on to describe several of the challenges we are currently facing in the area of reference services. I will also offer a sample of the reference questions we receive in general, those reference questions we have known and loved.

Departmental Library: The Right Choice for Information

First, here a few words about our Library. The Departmental Library at Indian and Northern Affairs Canada (INAC) offers a full range of library services to employees at headquarters and in our various regional offices. The Library also serves Aboriginal peoples, other government departments and libraries, researchers, academics, consultants, students and the general public. The main focus of the Library's collection is Canada's Aboriginal peoples and the Canadian North. Other subject areas covered include Canadian history, the environment, political science, economic development, management, public administration and law.

Our collection includes 60,000 titles (about 85,000 items). It also include an excellent collection of Canadian First Nations and Northern magazines, including many that are no longer published, 950 current magazine and journal subscriptions, a large number of Canadian government documents, approximately 2,000 rare books, and a microfilm copy of the department's historic files (Records Group or RG 10 files) on Indian Affairs. (The originals are kept at the National Archives of Canada.)

The mission statement for the Departmental Library is "to provide information on issues related to Canadian Aboriginal Peoples and the North and to support the work of the Department of Indian Affairs and Northern Development." The Library has a long tradition of supporting access to information and currently has

a key role in promoting public education about First Nations and Northern issues in support of *Gathering Strength*, the federal government's recent action plan for Aboriginal peoples.

Although our client services policy states that we give priority to serving departmental employees, we do provide research and reference services to any researcher needing assistance, whether that client is on-site or a remote user communicating through Internet. The Research Desk, which is staffed by two full-time Research librarians provides the full gamut of research services, from quick reference to Internet and online searching (for budgetary reasons, the latter services are restricted to departmental employees). We advise clients on how to carry out in-depth research in the library's collection and provide instruction in the use of standard information tools and databases. We also make referrals to other parts of the department, as well as to other libraries and collections. We regularly produce reading lists and bibliographies of items from the Library's collection on specific topics.

Complexity of information

Like most libraries these days, our library is currently facing many of the challenges and opportunities brought about by the Internet revolution. We are receiving a growing number of requests from clients who would like to search our collection on-line and we are working to make our library catalogue accessible from the department's Web site. Like many libraries we are also cataloguing Internet resources to make the ever-increasing number of electronic publications more accessible to users of our library catalogue. Perhaps the largest impact the Internet has had our library, however, has been its impact on client services.

Our library's reference e-mail address (reference@inac.gc.ca) is accessible from the menu page of the Indian and Northern Affairs Canada Web site. Clients use the address to request a wide range of information on various topics relating to the department. Because our library's e-mail address is essentially available to anyone connected to the Internet we can receive up to 30 e-mail requests a day. Two years ago, the number of e-mail requests we received daily was more or less manageable, anywhere between 5 and 15 a day. We could answer "easy" requests within a day and more complicated requests within a couple of days. Lately, we have been receiving many more requests than we can answer comfortably. At any given moment we can have from 50 to 150 e-mail reference questions in our in-box, with many clients expecting a quick responses (many messages end with something similar to "a quick response would be appreciated"). Some of our clients may assume that we can just access a database, click on a link and get an instant reply. In reality, a fair number of requests cannot be answered quickly without compromising the quality of service. In many cases the information requests we receive involve quite a bit of research on our part. Because of the delays associated with answering more complicated requests, it is often difficult to know if the client still needs the information by the time he or she gets the answer.

Because of the nature of e-mail reference it is not always easy to carry out a thorough reference interview. Clients communicating through e-mail often do not tell us who they are or where they are located geographically. Knowing if a client is a student, for instance, goes a long way in helping us suggest appropriate resources. Geographical location is a factor as well; if a client is from a remote northern community they are not likely to have access to the same resources as someone from a larger urban centre. When interlibrary loans are a possibility, relevant titles from our collection can be suggested or a client can attempt to find them in a local library. The issue of geographic location is even more important with international requests where we can assume that clients are not likely to find resources in a local collection. For our international clients, we try as much as possible to suggest Internet sources if they exist. In many cases a subject expert within the department can be recommended. We can also suggest international interlibrary loans if a client is looking for a hard-to-find document.

Meeting client expectations is often a challenge. Although many of our Internet clients are thrilled with the assistance we provide them, we are concerned with our ability to continue to meet the increasing demand. Because many Internet

users may assume that a "new technology" service like the Internet should provide "faster' service than the "old technology" of sending requests by fax or snail-mail, they may be disappointed in the potential time-delays associated with responding to their requests. There are very real limits to our current human resources. We often feel that it is difficult to provide the type of timely research assistance to clients requesting information via the Internet that we ideally would if we had more time and people on hand. Because our collection is one of the best of its kind, it is often difficult to refer clients to other libraries. Patrons have often checked their local library for material and have come up empty-handed. They are coming to us as a last resort. At any given moment we can have a request from an elementary school teacher in France who needs to know what the temperature in an Igloo is for a class presentation, a researcher in Australia who is publishing a paper on Nunavut but forgot where she found a reference, a graduate student from Alabama who desperately needs to find material on Inuit belief in an afterlife or a local student who is seeking recent publications on traditional Ojibwa attitudes towards elders.

Subject of requests

As for the subject matter of the requests we receive, there are some general categories that many of our requests fall into. Obviously, many of the requests we receive from the general public involve government services and programs. Often, a patron has a question which we, as librarians, cannot answer or are not in a position to answer. For instance, clients regularly call for help in interpreting Canadian law. We can refer a client to the appropriate number within the department or suggest publications that could help. A lot of our work involves trying to find the "right' person for a client to speak to which is not always easy to in a large department. In my role as a research librarian, I have found the department's web site to be a very useful resource when trying to point clients, especially remote clients, to information about the department.

Many of the department's publications, such as information sheets, statistical publications, Performance Reports, comprehensive land claim agreements (the Nisga'a Treaty, for instance), are increasingly available in digital format on the web site. However, the information available in these publications will inevitably not satisfy everyone's needs. There is always be the client who needs that extra bit of information they can't find in any of the publications or the client whose interest in an issue has been stimulated by reading a publication on the web site and who now wants to know more.

A common request is the request for genealogical assistance. Because we are part of Indian and Northern Affairs our library receives many requests from persons who are seeking to discover or legitimize their "native" roots. Although our library does not provide genealogical research services we do try to guide the patron either to archival collections or refer them to Indian Registration if they are preparing to apply for Indian status.

Because INAC has a high profile nationally, many of our requests come from individuals who assume that we must have what they are looking for. Often, unfortunately, that is not the case. Students from all grade levels use our services. We also receive a fair share of requests from concerned parents who have looked everywhere trying to find material for their child's project and who come to us as a last resort. Sometimes these requests are fairly straightforward. One example would be a request from a student who needs general information on the Cree and whose needs can be met by an article from one of the standard reference sources. Sometimes the requests are unrealistic and need to be toned down (such as send me everything you have on the Inuit). Often we are surprised by the sophistication of requests. One fourth-grader requested information on the current social problems facing the Dogrib. A sixth grader once asked what is the most serious crime you can commit in traditional Inuit culture.

We also receive our fair share of unusual requests, those reference questions we have known and loved. Several months ago we received an e-mail request from a client who asked if we could forward a copy of our department's label...wine label, that is. The client was an avid collector of wine bottle labels. Well, the Department of Indian and Northern Affairs has not produced a wine, at least not yet. Well, from the theme of wine,

perhaps we can move on to cheese. This relatively recent request came from sunny Italy and was simply a request from an experienced cheese maker wanting to know if we could recommend a cheese factory in Canada where he might find gainful employment. We recently received a request from an Iranian carpenter looking to study western woodworking. Some of you may have received this one as it was only copied to us.

We continue to receive many requests from India for employment with our department or for assistance in immigrating to Canada. My suspicion is that our department's exposure on the Internet may lead some persons from India who are not familiar with our country's long misappropriation of the term "Indian" to assume that Canada has a special department that attends to the concerns of persons from India (we are Indian Affairs, right?). We have received many other colourful requests, such as one from the founder of a well-known Canadian women's cosmetics company that involved finding examples of Aboriginal face-painting that might be used for a upcoming product release. In general we receive an incredible variety of requests that touch upon every conceivable subject relating to Aboriginal peoples and the North. Our requests can run from the relatively superficial (the request for lists of Aboriginal names for babies, cottages and new defence missiles) to the tragic (a request for assistance in finding a missing person).

To conclude, changes in information technology, most notably the Internet, have had a major impact on the way our library is currently providing information services. As the federal government continues to support online access to government services with such programs as Connecting Canadians and Government Online, the Departmental Library at Indian and Northern Affairs is also doing its part to make its services accessible from the Internet. As mentioned earlier, we hope to make our online catalogue accessible on the Internet in the very near future. The department's Annual Reports have been digitized by the Library and we hope to make these available as well. We are also planning to make many important historic departmental documents available on the department's Web site.

As librarians we hope this will mean that more and more of the information people are seeking will be online, which will leave us with more time to research those "really challenging" questions. Will the Internet eventually put us out of business, as many of my friends so graciously hint when they ask me about my work? My own personal view is that it will not. Quite apart from the fact that much of the information people need from us is still unlikely to be easily available in digital format for a long time, the sheer presence of information on the Internet stimulates curiosity. Our increasing requests for mediated assistance seem to show that there will continue to be a need for such assistance, at least for many more years to come. There is always some angle on a subject that can't be totally satisfied by consulting a web site.

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Repackaging the Past
Transforming Archival Resources for Educational Purposes

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Frontier School Division, No 48 serves six thousand elementary and secondary students in communities scattered throughout northern and remote Manitoba. Most of our students are aboriginal, mainly Cree in the north (i.e. Moose Lake, Norway House, Brochet) and Saulteaux/Ojibway in the south (Berens River, Wanipigow). There are also a few Metis communities like Duck Bay.

In keeping with the division's commitment to northern and aboriginal perspectives, I was hired as a researcher-writer in 1986 to develop Social Studies materials that would be sensitive to these perspectives. Adele Lafreniere, who is Metis, came on staff in 1993 in the same capacity. Both of us are educators with backgrounds in History and Social Studies and many years of experience living and teaching in northern communities. Adele is responsible for the elementary levels, while I am focussed on the middle years and high school. Lately, Lori Podolsky, a graduate student, has been working part-time for us.

We have been involved in a variety of projects over the years: revising and integrating Native Studies materials into the provincial curricula, creating a series of primary Big Books on traditional themes, interviewing and writing community anthologies of elders' stories, writing community histories, and editing narration for community videos.

Since much of the history of the north is unwritten, we have often turned to the archival collections here in the province for our inspiration. Of particular value are the Hudson's Bay Company and Manitoba Archives at the Provincial Archives of Manitoba, but equally valuable are the church and government documents available from other sources.

Of particular importance to us are the Hudson's Bay Company Archives. Since most of our communities developed as a result of the fur trade, many of them have strong HBC ties. Most of our students, for instance, can trace their ancestry back to the HBC. Absalom Cook, for instance, who is an elder at Grand Rapids is descended from a number of well-known early traders and voyageurs. By highlighting his genealogy in one of our anthologies at Grand Rapids, we were able to personalize the history taught at the school. Since most of our students there are related in some way to Mr. Cook, they can trace their own connections back in time and hopefully appreciate more fully the role their ancestor played in the development of this country.

The real challenge for us has been to make the archives accessible to our students. As Metis researcher Nellie LaRocque put it one day after making an important "find" at the archives, "Wouldn't it be wonderful if our kids could experience the excitement of discovery?" That's a tall order. Frontier schools are isolated, often accessible only after many hours on the road and sometimes only accessible by air or boat. It is expensive to travel to Winnipeg. Moreover, the Archives can be a forbidding place. Even when there are archivists at your elbow, it can be a daunting task for the novice to get oriented. Even when the researcher has become comfortable with the archival environment, the research is time-consuming, and hours of operation are not conducive to intensive research by students in the city for limited periods of time.

Our solution has been to "translate" archival documents into hands-on educational materials accessible to students, keeping in mind the development of our students thinking skills through student-centred activities such as co-operative learning, problem-solving, debate, and

simulation.

Norway House: A Brief History[1] is an example of a local history we wrote where no history existed before. Included in that history are the 1823 and 1838 censuses of the Norway House Cree community. A varietry of projects can be developed by the teachers, so that students learn to analyze this kind of statistical information for additional insights into the nature of the community.

The archives provide much material that can be used in problem-solving activities, too. The 1814 journal kept by Enner Holte at old Norway House provides an example. Hans Rasmussen and Johann Frederick Svendsen set out in a boat which capsized. Rasmussen drowned, but Svendsen managed to get to a rock. The problem faced by his companions was getting him safely ashore when they had no boat available to them. The 1826 journal at the same place also offers students a problem to solve. It was April and Chief Factor Pruden had just received eighteen pieces of "deers meat." His challenge was to preserve the meat, so that it would remain fresh well into the summer at a time when there were no refrigerators.

Problems like these in the daily lives of our students' ancestors can be very interesting indeed. Even more enthralling can be the discovery of additional information on these people. Johann Frederick Svendsen, for instance, was also known as Peter Erasmus. In fact, he is the direct ancestor of George Erasmus, a prominent Native leader in Canada today.

The collection of oral history is also an important part of our work. Since there is little written history in our communities, even in the twentieth century, we often have to rely on our elders for information on the past. Archival research can supplement their stories, as in the case of Absalom Cook. These anthologies are helpful as our students look back at the past to explain their present circumstances. They can also have quite unexpected uses. One of our oral histories at Grand Rapids was highlighted in a junior high school text in the Oxford *Identities* series. *Defining Moments*[2] was included as a "how to" model for students interested in making their own oral history collections.

We have also developed simulations. *Treaty Time* is set in Norway House and includes nearly thirty different roles that can be used as students immerse themselves in the "negotiations" for Treaty No 5. Because of the structure of the activity, students learn how little power the local Cree had to determine their future at that time. The roles are based on real characters and woven into them are twists, like old grudges or hidden agendas, that are desiigned to add interest to the interchange between the various parties. Archival research was important in developing these characters, all of whom existed, and some of whose characters and biases are reasonably well known. (On the other hand, we created a few fictitious ones, too!)

We have two communities now which have annual heritage days. For the one at Norway House last year, we created a series of projects that required the students to look at archival sources. One of these was "The Journey of George Hudson." Hudson kept a journal of his trip from York Factory on Hudson Bay to Cumberland House on the Saskatchewan. The challenge for the students is to trace his route, using his narrative and a modern map. It also gives them an opportunity to identify the old names, especially the Cree names, attached to particular spots along the route.

One of our projects, which is only at its initial stages, aims at providing microfilm readers in our schools, so that students may borrow microfilm through inter-library loan and do their own research in the original documents. We were able to obtain a CD-ROM of the the HBCA Finding Aid on line and make that available to Norway House High School. We did this because we knew that using the on line finding aid would be difficult in a school setting where a delay in getting on the net can mean loss of valuable class time. Unfortunately, our project has been scuttled by the six-week time-tabling system at the high school which does not allow sufficient turn-around time for inter-library microfilm loan, and by the limitations imposed by a single microfilm reader in the school.

At the present time, we are working on several community anthologies and a high school course on current aboriginal issues is pending. In each case, archival material will be important to the success of each of our ventures. And who knows

where we might go when those archival documents are finally on line!

As part of its on-going efforts to create Native Studies curricula which reflect local cultural and geographic sensitivities, the division has since 1986 been drawing on the rich resources of the Hudson's Bay Company and Manitoba Archives. This is the story of how those "dry" old primary sources have been turned into tools for learning about Manitoba's past and, hopefully, into exciting learning adventures for our students.

Notes:

1. Raymond Beaumont, *Norway House: A Brief History From Its Beginnings to Treaty Adhesions in 1908*, (Winnipeg: Frontier School Division No 48, 1989, reprinted 1993).

2. Arnold Toutant, Senior Editor. Editors: Sharon Sterling, Karen Cameron, Kathleen Gregory, Anita Chapman, and Sharon Jeroski. *Identities 8: Defining Moments.* (Toronto: *Oxford University Press Canada.* 1988).

From the Past to the Future: Issues, Options and Strategies for Preserving Electronic Records of the Hudson's Bay Company

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I want to thank Anne Morton for the invitation to speak at the Polar Libraries Colloquy. It is a pleasure to be here because this is a libraries conference and archivists should have a great deal of admiration for the work being done in the library community. Libraries have become leaders in the stewardship of information, and although our missions are different (archivists work with records rather than publications) archivists have much to learn from library professionals at events like this one.

***Year 2020**: "People jacked in so they could hustle. Put the electrodes on and they were out there, all the data in the world stacked up like one big neon city, so you could cruise around and have a kind of grip on it, visually anyway, because if you didn't, it was too complicated, trying to find your way to a particular piece of data you needed."*

WILLIAM GIBSON
Mona Lisa Overdrive[1]

It is probably appropriate that I begin my talk with reference to a work found in libraries and book stores, not archives. It is a work of fiction, a novel by science fiction writer William Gibson. Gibson is credited with coining the phrase, cyberspace, by giving the concept substance and using it as a medium for discussion -- the future information society. In this passage he refers to a world where people use virtual reality as a tool to get the information they need.

It is an interesting thought when one realizes that the assumptions behind this situation are the same as three of the basic principles of archival practice. First, information has value - we believe that records hold intrinsic informational value. Second, for us records and information must persist in time and space, and third, records and information must be accessible to those who need it.

Corporate Tradition

My objectives today are to consider how the Hudson's Bay Company Archives (HBCA), an institution that seems worlds apart from the modern universe of cyberspace, can continue to document the activities of the Hudson's Bay Company (HBC). The fulfilment of this mission means understanding and exploring the universe of electronic information because modern business activity depends on electronic communications and transactions. I have organized the presentation into four parts. The first is a brief survey of the HBC information and record keeping traditions, leading up to the gift to the Crown. This is the background to the challenges that are faced by us today. The second section looks at trends that are common in business today. These shape our current relationship with the HBC. The third is a brief overview of approaches to electronic records, and the final section is a commentary on what options and strategies we must consider in moving forward.

For the moment, let us leave William Gibson's future of virtual reality imagery. Imagine instead the universe of information from the point of view of the men who were chartered to trade in furs in the region around Hudson Bay. The HBC has a long tradition of gathering information to support its business needs. The keeping of records is well described in various histories on the

Company's practice. Time does not permit me to go into this in detail but I want to refer to several isolated, but significant examples from that rich tradition.

The first significant event occurred in 1680, 10 years after the HBC charter was issued by King Charles II. A conscious decision was made to organize the company's information assets. One of the Company's officials was instructed to

> ...buy an Iron bound chest with 3 Locks and Keys wherein the Pattent and Seale of the Company and such other things as shall be thought fitt by the Comittee may be lodged, of which keyes the Deputy from and for the time being shall allways have the keeping of the principall Key and the others to be disposed of as ye Committee shall think fit."[2]

The chest came to be known as the 'Great Trunk'. It was what we might refer to today as a corporate repository, a safekeeping box that held the HBC's infant corporate memory. And it represented an understanding or awareness of the nature and importance of information, or corporate records, as assets that had to be protected, so much so that executive officials were entrusted with the responsibility of keeping them safely under lock and key.

Over 100 years later, a man named John Brome was hired to classify and arrange corporate record books.[3] The records of the Company had to be accessible. Officials needed indexing schemes and catalogues and these were developed to support business activities. Hudson's Bay Company's respect for record keeping in subsequent centuries became legendary as we know from its use of technology to capture, store and transfer records from the North American outposts to London. Corporate practices also supported the creation and maintenance of records. Officials in London insisted that servants keep legible record books of activities in North America, for example.

By the time of its 250th anniversary in 1920, the HBC had established a massive collection of documentary evidence of its own activities as a fur trade empire and retail company. The records had become valuable to others outside its corporate domain. The HBC organized its archives to commemoralize its anniversary and retrieved records from its outposts. These materials complemented the volume of documentation that had been accumulating since 1670. In the 1930s, Professor R. Coupland of Oxford University and Hilary Jenkinson of the Public Records Office were asked to inspect the archives and provide advice on classification. In 1951 the Company began microfilming them. The archives remained in London until the 1970s. In 1970 the headquarters of the HBC were moved to Winnipeg. Three years later an agreement was signed between the Province of Manitoba and the Company to transfer the Archives to Winnipeg and deposit them in the Provincial Archives of Manitoba. The records arrived in six twenty-ton containers and were opened to the public with staff provided by the Province. The 1973 Agreement was a *deposit* agreement that provided for access and protection of archival records.

The records of the Hudson's Bay Company were donated to the Provincial Archives in 1994. Proceeds from tax receipts were used to establish the Hudson's Bay History Foundation which provided capital and operating funds to care for the priceless documents housed at the Provincial Archives of Manitoba. The agreement between the Company and the Archives prevailed on both parties to continue their efforts to identify and retain current corporate business records. The spirit and intent of the agreement was "to enable future historians and other researchers to interpret and reconstruct the HBC's commercial history, as well as its role in the social, political and economic development of Canada."[4] The terms also provided for future donation and protection of records, but it had a stronger statement on records management than the previous 1973 deposit agreement, with the end result that a records manager was appointed in 1997. The important thing to note here is that the agreement formalized the separation of the archives as a public activity and records management as a corporate function. In many organizations these are tightly integrated. And this separation underlies the current relationship between the HBC and the Archives. Both entities are engaged in articulating and establishing their relationship with one another. This is a critical factor in shaping our approach to archival electronic records management.

I have heard it said that the most common

sources of conflict among organizations are misunderstandings about roles and goals. This is true of corporate archives which must be aware of the context in which they operate, particularly in terms of understanding corporate interests and realities. The HBC is Canada's largest retailer. By the 1990s it had left behind two decades of retail expansion, and a recession, as it strode into the world of modern communication; and electronic commerce. Just-in-Time inventories, state of the art procurement systems, point-of-sale systems, customer loyalty programs, partnerships with vendors - all were used to compete in the global economy and to fight for survival against international competitors like WalMart, or to protect against the threat of corporate takeovers from others. Though retail and other organizations might be interested in their history, and have a stake in preserving it, archivists must realize that they do not exist to supply the archives with records. They have a different bottom line.

Electronic Records

In the pursuit of profit and corporate well-being, "information is the life source of most companies now".[5] Companies value intellectual property records, vital records which delineate what the company owns and who owes the company money, so-called 'competitive business intelligence' records which help keep companies globally competitive."

Within the last decade we have witnessed "The trend towards the distribution of data to multiple and heterogeneous platforms. It brings with it a problem of enormous proportions. That is, if valuable information assets are widely distributed, the organization needs to find a way to organize and control those assets."[6]

The distributed data environment has caused organizations to reconsider the nature of electronic records. For corporate entities like the HBC, traditional practices and methods for handling paper were handed down over centuries of experience and tradition. Records of business transactions were created according to business practices which were deliberately developed and standardized to ensure that adequate evidence was captured and available for business purposes. In the above example the letterhead, the information in the body of a letter, the name of the sender and recipient, the date and signature, and any annotations that were made as part of the business transaction that the letter represented were built into paper - all provided the content, structure and context of a record. With paper records we did not make much of the distinction between information and records, As a physical document, the letter was immediately recognizable as a record, and the fact that it contains information is understood.

In this electronic environment control of information is a serious issue. Through custom and practice, and well established policies and procedures that we inherited, we managed and still do manage paper rather effectively. In today's office environments paper and electronic processes co-exist in parallel and sometimes collide with one another. In many organizations records are not captured as electronic records - they may be printed to duplicate filing systems, and left on servers indefinitely, or deleted at the discretion of the users. Organizations that file electronic information and records to off-line media must take into account the fact that the data is hardware and software dependent unless systems are designed to capture, maintain and manage electronic records beyond the lifetime of the host systems.

When we move to electronic systems and electronic records transactions, the distinction between the elements of a record becomes critical. The paper record is broken up into units of information and data. But the need to capture and maintain the content, structure and context of the record remains the same, in order to satisfy the standards of evidence.

For the past ten years or more archivists and others have studied the impact of modern business communications on record keeping. A large body of knowledge has been accumulated and provides useful guidance.

In 1994 and again in 1997, Archives and Museum Informatics hosted two meetings of experts from around the world to address the issues of electronic record keeping. The Pittsburgh meetings, led by David Bearman, Richard Cox and Margaret Hedstroni advanced a controversial approach. It was mis-named post-custodial, or non-custodial, for their suggestion that archives did not have to actually accept or have custody of the materials over which they had ultimate authority.

The key conclusions at the meetings were that standards for electronic record keeping, and specifications for electronic record keeping systems, for business acceptable communications had to be developed, printing to paper was not a viable approach, and that there was a need for practical testing and implementation of these ideas. The working meetings spawned alternative approaches and a wide array of projects throughout the world.

Various projects developed standards for defining and capturing electronic records and led to frameworks for electronic records management. These initiatives have influenced the market to the extent that software developers and vendors have built record keeping functionality into their products.

Future Directions

Our relationship is with a private company. Its priorities are to make a profit and fulfill its obligation to its shareholders. It must protect its corporate intelligence to do so. In the early days of the HBC's records management program it was thought that we might build the kind of relationship based on the models and best practices that others are applying. We realized that neither the Archives, nor the Company is ready for this. The Company is operating on the assumption that it will continue physical transfers of records, including electronic records periodically, every number of years. At the present time it is not in the corporate interests of the Company to have archivists intervene in the processes of records creation and maintenance. This poses a significant challenge for us because we want to be reassured that electronic record keeping functionality is built in to systems. Otherwise, in the future we might be faced with the prospect of acquiring old electronic data sets that cannot be read because the software or the hardware is obsolete. Though we are somewhat isolated from the operations of the HBC , we must do something to prepare ourselves for a future of electronic record keeping.

As I noted, the Archives is not ready for the kind of distributed, non-custodial electronic records model that has become popular elsewhere. One of the barriers that we face in our program to address records and other pressures of archival administration is that we are unprepared for change. Today the Archives is at a crossroads. Our work environment, our identity, our activities are changing faster than our ability to cope with change. We operate under rising expectations, increasing workloads, and expansion of our role and questions about our role in society. In order for the archives to apply itself to embrace archival electronic records management issues it must be able to cope with our changing environment. This means systematically examining our roles within the archives, identifying gaps in services, finding new ways to govern ourselves internally, so that we can plan for the future.

The Company plans to sign another donation agreement in this decade. Approaching electronic records from a distributed, or non-custodial perspective may not be an option for us. Without appraisal strategies the archives will be unable to provide adequate direction to the Company about what needs to be identified and protected in the future.

We need to apply technology to automate old finding aids and other tools that provide access to records. The Archives needs to capture and convert knowledge about the collections that it has now, in order to build an infrastructure for what it is responsible for in the future. This diagram describes a body of knowledge which includes: all the information gathered about archival records administration in our daily work. The knowledge can be gathered from our work in providing access services, archival description, monitoring the status of collections, and it would be a foundation for capturing descriptive information and meta-data about electronic records.

We need to develop and enhance our communications networks to provide better services to people who need access to archival records, but also to build our expertise about Internets and Intranets as places of activity which will require the capture of records of electronic transactions. Knowledge gained from these experiences will help shape our understanding about issues related to business transactions in these environments and about issues related to the maintenance and longevity of information over time. On this latter point, for example, it should be noted that corporations like the HBC, for example, are

concerned about the material on its own web site that it wants to preserve for re-use.

Since the 1980s when William Gibson first began talking about cyberspace and the matrix, many engineers, artificial intelligence experts and computer developers began to speculate and construct models of virtual reality and to apply these principles to the universe of information. In the late 1980s, Xerox/Parc built a model, a three dimensional object that you could view on a colour monitor. You could navigate around it, move closer to it, click on a portion of the object and zoom in. When you got closer you realized that you were looking at a three dimensional version of Xerox's corporate memory. Other models have been developed since then and these have led to different ways of thinking about how we manage records and information. Knowing that this work is in progress, and what it might mean in the universe of information should be a priority for archives. David Gelernter, author of *Machine Beauty: Elegance and the Heart of Technology* and designer of Mirror Words technology describes the concept behind a product called Lifestreams: "According to Lifestreams every document you've ever created or received stretches before you in a time-ordered stream, reaching from right now back to the date you were born."[7]

Imagine what this does to our current concepts of genealogical research. Archivists must be aware of this work as we develop our appraisal strategies, build our web-sites, build our archival description databases, and re-invent our organizations - this is the work we need to do in order to prepare ourselves for addressing the challenge of archival electronic record keeping.

"Walls of shadow, walls of ice", wrote William Gibson, when he described the darker side of a world that was shaped by technological advancement, where we might find unprepared people and organizations "casing mankind's extended electronic nervous system, rustling data and credit in the crowded matrix," where there is total chaos, where information is unreadable, unorganized, and inaccessible except to those who can navigate it with their virtual reality machines. It is a dark future "where the only stars are dense concentrations of information, and high above it all burn corporate galaxies and the cold spiral arms of military systems."

Notes:

1. William Gibson. *Burning Chrome*, (New York: Arba House, 1986).

2. Hudson's Bay Company Archives (HBCA), Provincial Archives of Manitoba (PAM, A. 1/2, folio 20d, 4 May 1680.

3. HBCA/PAM A. 1/47, folio 80, 2 November 1796.

4. HBC Donation Agreement, 1993.

5. Newsletter, Association of Records Manager of America.

6. Barry Brown and Lewis Stone. "The Depository: Key to the Information Goldmine," in Jessica Keyes, ed., *Technology Trendlines*, (New York: Van Nostrand, 1995, 323-39.

7. David Gelernter. *Machine Beauty: Elegance and the Heart of Technology*, (New York: Basic Books, 1998).

Libraries and Archives in Kamchatka

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Introduction

In 1997, we celebrated the 300th anniversary of the Kamchatka territory's union with Russia, but until 1990 our peninsula was one of the regions which were called closed in the USSR, and not a single foreigner could step onto Kamchatka land. Kamchatka is still *terra incognita* in the western world. When we talk about it we should usually add: "It is between Alaska and Japan".

Vladimir Atlasov is considered to be the discoverer of Kamchatka. He was a Cossack and led a group which came from Chukotka to Kamchatka in 1697 by order of the Russian Government. July 2nd is the anniversary of the erection of a cross on one of Kamchatka's rivers and marks the beginning of the region's history under the Russian Empire. But Russians had been in Kamchatka long before that time, and some new facts have became clear because of recent archival investigations.

The next step in Kamchatka history is well known. I mean the first and second Kamchatka expeditions led by Vitus Bering. The expedition was sent by Peter I and for Russia, opened the way to America. It was considered for ages that the main purpose of these expeditions was to find the sea route between Asia and America. This route bears Bering's name, but Semen Dezhnev had explored it long before Bering. Only recent findings in Russian archives have provided new insights into these famous expeditions.

One of the most interesting things about these expeditions was the participation of the Russian scientist Stephan Krasheninnikov, who created his famous *Description of Kamchatka Land*. This book is considered to be the first academic monograph written and printed in Russia, and even now every researcher in any field of knowledge writing about Kamchatka cites this important work. We have brought a reprint of the 1755 first edition with us to show you here, and in the University of Manitoba library we found the first Soviet edition of this book.

Not many people in the western world know about the defence of Petropavlovsk-Kamchatsky during the Crimean War of 1854. A very small garrison defeated the united French-British Forces in the Avachinskaya Bay. Some new documents have been found about this event too. Even the relatively recent events of the Second World War, especially those connected with the US and Canada, came to light in the newly opened documents. For example, the documents concerning lend-lease and the fate of American pilots shot down by Japanese near Kamchatka were opened recently because of collaborative work by Russian and American investigators. We will return to these facts later.

General characteristic of libraries and archives in Kamchatka.

Kamchatka's area is equal to Germany, Austria, and Switzerland together, but its population is small -- less than 430,000. Most live in Petropavlovsk-Kamchatsky and the surrounding area -- about 300,000. The rest live in settlements all over the territory. Most of the libraries are situated in Petropavlovsk and Elizovo region.

The biggest and the most important is the Regional Library of Kamchatka. It is the best library in the Russian Far East and bears the name of Stephan Krasheninnikov. It was, and is now, the centre of the cultural life of the city, but only after the opening of the iron curtain in 1990 did it became an international one. Computers appeared with this new era, and telecommunications were established with the assistance of different foundations such as the Soros Foundation, Eurasia

and SEN. The Internet opened a new age, and now the library is available to anyone. Any person living in Kamchatka may come to the Regional Library and send a letter by E-mail, work on the Internet or attend a club. International Conferences of great importance are held there.

There is a network of libraries in Petropavlovsk. These include about 50 city libraries for adults and children. There are a number of special and closed libraries, which are very important in Kamchatka. Including the library of the famous Institute of Volcanology, which is open. The Institute is the main academic institution in Kamchatka and the only one in the world of its kind. It has been opened for 50 years and its library is the centre of scientific life in Petropavlovsk and Kamchatka as a whole. Special geological and volcanological magazines and books from around the world are part of the collection and in this library there is always a warm welcome. But not all special libraries are like this one. Some were part of organizations which were very powerful under the former Soviet Union. The very important task is to keep the books and materials and to prevent them being destroyed.

Elizovo region is a very important agricultural area near Petropavlovsk-Kamchatsky. In this region we have 23 libraries, one of them is central, two town libraries, one children's library and some branches in the villages. M Loudmila Ignatenko worked in the settlement Razdolny (see the map) near Elizovo as a librarian more than 30 years. She headed the village library and knows much about its specific work. As the library is situated in the national settlement, I would like to tell you about the aboriginals of Kamchatka.

There are five national minorities in Kamchatka: **Itelmens** is the oldest aboriginal population (their language is nearly lost, people die, so the language and culture should be studied in order not to loose them totally). There are **Koryaks** and **Chokchees** in the North, **Aleuts** on the Commander islands, and **Evenks** in the central part of the peninsula.

The creation of national communities began in Kamchatka, and Loudmila was one of the first who worked to create a mixed community called "Aleskam". She became its Chief and since 1993, combined her work in the library with the work in the community. Since this time the community has held many meetings and entertains different international guests at the library, which became the central of the Community life.

Milkovo settlement is the geographical centre of Kamchatka and the oldest village of the peninsula where Itelmens live together with the Russian population. The head of the library, V Mikhailova, is a very energetic person and a head of the information sector. For ten years she has collected regional archive materials with the help of children and adults from the area. We have a special term in Russian, *krayevedenye*, which has no equivalent in English. It means study of local lore, history, culture, economy. This regional knowledge has become more and more important in the life of Russians and Aboriginals in Kamchatka, and libraries have become centres of this knowledge. Language lessons and lectures on local culture are free, but people give their time, energy and financial support for them, collecting their own archives and museums. For example, in the Milkovo library archives of Milkovo, families and family names, "People during the Great Patriotic War (Second World War)" are being collected.

The situation in the libraries of Kamchatka has its light and dark sides. After the disintegration of the Soviet Union the process of decline and fall took place everywhere in the country, especially in the North. The old settlements closed, people migrated from North to South, or left Kamchatka, so the libraries closed too. If they remained, the financing is poor, salaries are low, books are old, and new funding for subscriptions has not materialized. The situation is terrible. In the Soviet time herding was a very progressive process. Aboriginal herders lived with the reindeer in special dwellings called *Yarangees* and there was a Red *yarangees* movement as well as of travelling libraries. Nothing of the kind now exists, and people read less and drink more. Library collections are old now, but there was also an order in 1993 to destroy and remove some books. Computers became very favourable for the libraries on the other hand. Humanitarian aid came

from the USA and other countries, and foundations began their work. Internet services came, but not to the remote villages.

The Archives of Kamchatka are *terra incognita*. New discoveries in the central archives.

Only two state archives of Kamchatka and the Centre of Documentation of the new history of the Kamchatka region are open now to everyone. All the rest are special, for example, party, soviet, navy, departmental or family archives. We understand that they contain unique, closed information which may be available for a fee. Some examples of the recent findings include:

1. The results of the first and second Kamchatka expeditions led by Vitus Bering were prohibited from publication because Bering and Chirikov reached the shores of America, and the Russian government was afraid that Russia's rivals would occupy these lands. The activity of the Second expedition was stopped in 1743, the maps were hidden, and the scientific materials could not be published. But some of them began to appear abroad, so permission to publish them in Russia was obtained. In 1748, Krasheninnikov was ordered to prepare his materials for publication, and it became his chief work until his death in 1755. In recent years, historian Boris Polevoy from St Petersburg found the documents proving his theory that Peter the Great was not so much interested in the geographic problem of whether Asia was connected to America or not, but he was interested in the opportunity to join rich Russian lands in the south of America, especially California. Bering did not get the interpretation of the Tsar's instruction right, so he went to the North, and the Aleutian Islands were discovered. This interpretation is supported by the American historian R Fisher.

2. Pribilov, the Russian sailor who came to find fur seals and sea otters, discovered the islands named after him according to calculations and conversations with Aleuts. The documents proving the discovery were found in the Russian Geographical Archive in St Petersburg by Leonid Pasenuk several years ago.

3. Rare and even unknown maps of Kamchatka were recently found in the Library of the Russian Academy in St Petersburg according to Krasnikova.

4. Recent events of the Second World War have undergone new interpretation. The United States lend-lease to the Soviet Union was approved by Congress and signed by President Roosevelt in 1941. Half of the cargoes (nearly 9 million tonnes) was transported across the Pacific ocean by Soviet ships. Only now we have discovered that half of the cargo was stored in the port of Petropavlovsk-Kamchatsky, and thus the sea trade port was built during the years of the Second World War. All the big ports of the western coast of the USA and Canada sent cargo to the Russian Far East. The chief port was Vladivostok. Petropavlovsk-Kamchatsky was a secondary port.

5. Beginning in August 1943, damaged American bombers began to land in Petropavlovsk. Thirty-two planes landed there, eight of them were mended and flown afterwards. Three American pilots who perished were buried there, and 291 were returned sent to the USA. This information was obtained from the Central Archive of the Ministry of Defence in Podolsk. Some came from the USA and were published by Alla Paperno.

As you can see from these examples, there is much interesting information in the archives, although many are now closed and work was not done in them all. We have data from remote villages and local museums which is unique and demands urgent work. There were no foreigners in Kamchatka for over 300 years and that is why we have a foundation for making interesting discoveries in Kamchatka's libraries and archives. Special work on information research and computer study is needed, so we invite all of you to participate, to create a programme together. We are ready to research and publish in both countries.

The Encyclopedia Arctica: A Gateway Opened, A Gateway Closed

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In the immediate period after World War II, the Allied nations moved from science in support of war to science in support of a world, at least tenuously, at peace. The effort in the United States was driven by a report prepared by Vannevar Bush, the director of the Office of Scientific Research and Development. The Bush Report proposed a detailed plan for postwar science that laid the foundation for a decade of research.[1]

Within a year of the Bush Report the United States Congress passed legislation creating the Office of Naval Research to "plan, foster, and encourage scientific research in recognition of its paramount importance as related to the maintenance of future naval power, and the preservation of national security."[2] The Office of Naval Research, or ONR as it was called, had been preceded by the Office of Research and Inventions as early as May of 1945. With Congressional authority, it was charged in 1946 with research, development, evaluation, and production of resources that would support the future of the Navy and its mission.[3] The Secretary of the Navy had $40,000,000 immediately at his disposal for the ONR and these funds were to be distributed primarily to civilian researchers to support their work. The funding of research projects was approved by a fifteen member board, the Naval Research Advisory Committee, consisting of both senior naval officers and noted civilian scientists, after review of proposals. In the 1946 fiscal year, 81 contracts for 177 projects were funded at a level of $9,750,000. In the following year, 42 contracts for 69 projects were funded at a level of $3,630,000.[4] When Alan Waterman left ONR in 1950 to become the director of the newly-founded National Science Foundation, 40% of the basic science in the United States was being funded by the Office of Naval Research.[5] It "provided a channel for the flow of federal money to university laboratories for the support of basic research" that had a wide ranging impact on both pure and applied research.[6]

The Navy had, of course, been long interested in the Arctic for both research and defence purposes. In an article written by MC Shelesnyak, a name that will recur again in relation to the *Encyclopaedia Arctica,* the Navy's part in the exploration of the Arctic and its use for strategic purposes was reviewed in 1947.[7] Shelesnyak noted, at the outset, the role played by Vilhjalmur Stefansson in promoting understanding of this vital polar region. In another document published the same year, Shelesnyak credited Stefansson, in his book *The Friendly Arctic*, for "formulating a proper understanding of the Polar Sea as a Mediterranean sea and of the geopolitical meaning of the Arctic."[8] It was in this rich and heady post-war period that Stefansson, already holding a major reputation as an Arctic explorer and author, proposed to the ONR the creation of an encyclopaedic research tool on the Arctic that would encompass all known knowledge of the region.

Stefansson's first proposal to the Navy for funding came in early 1946 to the Office of Research and Inventions for support of his library, informally proposing a "Stefansson Scientific Institute for Polar Exploration." It is not clear from the surviving records whether or not this proposal, designed to support the growing polar library that Stefansson had amassed was ever put forward formally.[9] If nothing else, this draft proposal

brought the skills and knowledge of Stef's library and staff to the attention of the Navy.

The formal proposal for the Encyclopedia Arctica was sent to the Office of Research and Invention on 5 July 1946 with a draft sent to "Shelly", Lt Cdr MC Shelesnyak, the following day. In the cover letter, Stef wrote: "The increasing importance of the Arctic both for war and peace indicates the urgency of having ready access to all available information about the Arctic and the sub-Arctic."[10] The proposal, a brief three pages with a five-page appendix on proposed staff, suggested a regional approach with encyclopaedic coverage of the entire Arctic with some emphasis on the sub-Arctic in a loose leaf form to permit the addition of new material and revision of old. Ten staff, including Stefansson, would, in three years, produce between 4 and 6 million words on topics ranging from aviation to zoology and include anthropology, biography, geology, botany, clothing, diet, navigation and warfare. While much of the research and writing would be done by the staff, Stef also proposed using scientists and scholars from throughout the world to prepare essays for inclusion.

Fifty copies of the encyclopaedia were projected and these would be printed by multilith. At the outset of the project, it was not clear whether it would be possible to publish the results commercially; this issue would arise later. The project was envisioned as a three-year endeavour with funding requested for the first year at $61,000 and a request for approximately $40,000 for the two succeeding years. The proposal was accepted by the newly-created Office of Naval Research and a contract signed on 1 December 1946.

Work began almost immediately on the project. In a letter to Eloise Poplini, Stef outlined the work for a typical author. She was to receive 1 1 /2¢ per word for rewriting or redrafting essays from existing reference works and 3¢ per word for original work. Stef continued by noting the topics that she might find interesting to write on and described the process of revision.[11] In a letter to the editor of the Dial Press the following month, Stef described some of the early difficulties with the project:

> As I think you know, we are undertaking a big contract for the U. S. Navy which brings us a little into the second $100,000 during the three years. It is, in effect, a cost-plus contract, so that we cannot lose; but we are having a difficult time getting started, for we have to lay out money for wages and supplies, which the Navy refunds after a good deal of red tape which takes several weeks. We began December 1st, 1946, and have received only one payment to date although we are supposed to get a payment at the end of each month.[12]

One of the more onerous tasks that faced the project was the preparation of reports to keep ONR informed of activities. However time-consuming these reports were to prepare, they provide a wealth of information of the activities of the project as well as problems encountered. The first report, written some six months into the project, noted that a contract had not been received until 10 January 1947 and thus beginning work had been delayed. New staff could not be hired and no commitments could be made to subcontractors. The report outlined five areas of intense work: biographies of individuals, geographical studies, histories and descriptions of governmental departments, histories and descriptions of scientific institutions, and special articles on scientific topics. During the first months of the project, some 100 biographies were prepared and 300 more were expected in the next six months. These essays ranged from a brief 100 words to over 10,000 words. Stef noted that the detailed work of geographical essays was being done by permanent staff. Materials from governmental departments and scientific institutions had been requested and promises had been made to supply these essays. Stef also noted that many of the special articles had been commissioned and were expected to be in hand by November 1947.[13]

The 1948 report noted that many essays had been completed and over 900,000 words of the projected 5,000,000 words were in hand. Most of the biographical essays were complete and those that were not were well in hand. A large portion of the geographical material was also in

hand. What is not evident in this report are the problems in obtaining materials relating to the Soviet Arctic. This issue would become evident in later reports and would create a basic problem that would, eventually, halt the project.

Jn the first issue of the journal *Arctic*, Stef presented a brief synopsis of the project and its aims. He wrote: "Its goal, which I do not expect to approach closely, is to answer every question that any intelligent and reasonable person may want to ask concerning the region geographically covered."[14]

This was to be done in 5 to 6 million words. Stef did note, in the essay, that he and his colleagues had not yet been able to define the Arctic regions, but suggested the sub-Arctic would be defned as the limit of permafrost. This would include, he stated, nearly 47% of the Soviet Union and between 50 and 70% of Canada.[15]

Stef was invited, early in 1948, to present his project to an ONR Colloquium. Much of what he had to say was repeated from his reports, but he did comment that fully half of the writing was to be done by his own staff of ten and half was to be contracted out, sometimes to professional writers and other times to volunteers from agencies and institutions. He also noted that specialists from throughout the world were being contacted to write specific essays. Countries represented included Canada, the United Kingdom, France, Germany, Denmark, Norway, Sweden, Finland, Iceland, and the Soviet Union.[16]

The brief report written precisely two years after the date of the original contract noted that, at the completion of two years, nearly half of the text of the encyclopedia was in hand.[17] What the report did not recount was that many of these essays were in very rough draft form and only a small portion of the essays were in final form. At this point, the project had only one year to finish its work. Stef, however, was not dismayed. Jn a story in the *New Yorker* early in 1949, it was reported that the project was 65% complete and that the manuscript would be delivered to the Navy on 31 December.[18] In the following months, MC Shelesnyak wrote in the *Monthly Research Report of ONR* that more than 3 million words had been written for the project.[19]

A turning point was reached in the May 1949 progress report. Stef stated that one of the issues they had struggled with was the organization of the materials. At first, they had planned on a strict alphabetical arrangement, but then decided to arrange the materials by broad subject categories. He also noted that the editors were now working steadily at editing materials at hand rather than working on new topics.[20] It is clear from this report that the 31 December deadline was looming and that the project was not going to be finished on time. By the next report, early in 1950, Stef admitted that only the first volume was completed and others were still in need of editing.[21]

The project, in its fourth year in 1950, continued apace with $60,000 in support from ONR. Stef was able to report in July that the first two volumes (of the now 20 projected) were complete and that four more volumes were in the final editing stages. His statistics included: 10% of manuscripts completed and edited; 20% of manuscripts in the final editing stage; 45% of manuscripts in rough draft awaiting editing; and 25% of manuscripts not done. Stef also observed that he was negotiating with The Johns Hopkins University Press as a publisher and expected to have a contract later in the year.[22]

The same week that Stef reported progress, he requested an additional year of funding at the $75,000 level. No response was gotten from ONR until November when the office informed Stef that the project was to be closed within the year and that only $25,000 would be appropriated for this final effort. There was no reason given for this decision. It is easy to speculate on the rationale of ONR for closing the project. It was, at that point in 1950, over a year behind schedule and there was no firm evidence that a fully-funded additional year -- for Stef was now projecting completion in 1953 -- would bring the project closer to a finish.

The second possibility, and one that is the more probable, was simply that Stefansson and his mission were caught up in the miasma of McCarthyism in the United States. Some background may be useful. In the year after the end of World War II, there was a growing concern in the United States that the Cold War and

communism would envelop the nation. A Temporary Commission on Employee Loyalty was established in 1946 and Executive Order 9835 established a federal loyalty-security program in 1947. Hearings by the House Committee on Un-American Activities (known as HUAC and established in 1938) began in 1948 with the spectacle of Whittaker Chambers testifying. Two years later the McCarran Act -- the Internal Security Act -- was passed and the Senate Internal Subcommittee went into action. Chief among the henchmen in this charade was Senator Joseph McCarthy, whose wild accusations would give name to the era.

The fear of and drive against communism in America permeated politics, science, and intellectual life. There was increasing surveillance of and political pressure on scientists. Science became a part of the cultural Cold War. Stefansson, either because he was naive -- which is doubtful -- or because he could not tolerate the interference of ideology in research, chose to ignore the warning signs. He already had difficulties in obtaining research materials from the Soviet Union because of the lack of cooperation from politicians on both sides of the Atlantic. Further, he had the audacity to maintain contact with scholars and scientists in the Soviet Union, something that the McCarthyites could not tolerate. Finally, he needed Russian translators to work on the project and, in at least one instance, the ONR instructed Stef to terminate the employment of an American citizen who had studied in Moscow and no other reason was given.[23]

Stefansson's difficulties with McCarthyism grew worse. He and Evelyn were close friends of Owen and Eleanor Lattimore. The two couples lived in adjoining farms, summer homes, in Vermont. The Stefanssons owned one of the farms outright and half-interest, with the Lattimores, of the other. Owen Lattimore was one of the foremost students and scholars of the Far East and was much in demand as a consequence. In March of 1950, while on a mission in Afghanistan for the United Nations, Lattimore was publicly accused by Senator McCarthy of being pro-communist. Off the record, McCarthy claimed that Lattimore was the top Red spy in America. Lattimore immediately returned from Asia to defend himself in several weeks of hearings, answering specious and unfounded allegations.[24]

The expenses of defending himself forced Lattimore to sell his half-interest in the Vermont farm. A buyer came forward almost immediately, but the buyer, Ordway Southard, it was later learned, had stood for election for the post of governor of Alabama on the Communist Party ticket.[25] As a result of this tainting, Stef and Evelyn were called before the New Hampshire Attorney General -- the summons being served as Stef picked up his mail at the post office -- to confess to his communist leanings and to name all the American communists he knew. Stef, of course, denied all accusations as did Evelyn.[26] However, Stef was smeared and the stain would not disappear for several years.

It is very probable that the reason the ONR ended its support of the encyclopedia project was the fear of McCarthyism. Stef had been known to work with Soviet scholars and the Soviet military, he had befriended Owen Lattimore who had been accused of communist leanings, and he had been called before a state attorney general as a potential enemy of the state. This was enough, in that climate of fear, to encourage the Navy to disassociate itself from Stef.

Stef wrote to ONR on 27 November 1951 and requested the following: "Please let us know at your early convenience how to state correctly, and in a form agreeable to the Navy, the reason or reasons for the action taken through you by the Office of Naval Research." The ONR declined to provide Stef with this information.[27]

Plans were immediately made to continue the work and to publish it commercially. The Ford Foundation was also approached for support. In an undated announcement from The Johns Hopkins University Press, it was stated that the first four volumes would be published in 1951 with four volumes in each succeeding year through 1955. This never happened. Other presses were also interested in the project and some authors wished to publish their contributions separately. Stef agreed to the latter, as long as credit was given to the encyclopaedia project.[28] One of the most complete statements on the project was drafted in 1953 that outlined the history and present status of

the project. It was clear at that time that little more was going to be done without financial support from outside sources.[29] In a wide-ranging interview with Finn Bronner five years later, Stef noted that the manuscript had been bound, but had never been fully published.[30] This is the state in which the nearly 5 million words of text remained until 1974 when a microfilm of the entire ericyclopedia was made available.

The manuscript with all attending correspondence, drafts of essays, and the administrative records reside in the Stefansson Collection at Dartmouth along with Stef's own papers and his library. What had been proposed as a tool for the Navy and other researchers to understand the importance of the Arctic geographically, historically, and politically, became a victim of the Cold War. This project, along with many others in the United States and abroad were halted or had their funding slashed simply because of the fear created by the McCarthy era. The impact on research by US scientists and scholars was significant. It was not possible to communicate with researchers in the same field simply because of geography. Published Soviet and Eastern European research could be obtained, often with some difficulty, but the very necessary conferences, face-to-face meetings, and exchanges were not possible. As a result of the ideological confrontation between two nations, and particularly because of McCarthyism in the United States, polar research suffered for nearly a decade.

Notes:

1. United States, Office of Scientific Research and Development, *Science and the Endless Frontier*, by Vannevar Bush (Washington: United States Government Printing Office, 1945).

2. PL 588, enacted on 1 August 1946, and signed by President Truman on 3 August.

3. 3 United States, Navy Department, *Office of Naval Research*, NAVFXOS P-429 (Washington: Department of the Navy, 1946). This pamphlet was the first official statement of the Navy's plans for the ONR.

4. Raymond D. Hagen, *Windows to the Origins: the Office of Naval Research* (Washington: Office of Naval Research, 1986), 36, 40, 41. See also, Harvey M Sapolsky, *Science and the Navy: The History of the Office of Naval Research* (Princeton: Princeton University Press, 1990). The ONR has been conscientious about reporting its accomplishments in a series of publications: F Joachim Weyl, ed., *Research in the Service of National Purpose, Proceedings of the Office of Naval Research Vicennial Convocation*, (Washington: ONR, 1966); Edward I Salkovitz, ed., *Science, Technology, and the Modern Navy: Thirtieth Anniversary, 1946-1976* (Arlington: ONR, 1976); and *Office of Naval Research: Forty Years of Excellence in Support of Naval Science, 1946-1986* (Arlington: ONR, 1987).

5. Milton Lomask, *A Minor Miracle: An Informal History of the National Science Foundation* (Washington: National Science Foundation, 1976), 72.

6. J Morton England, *A Patron for Pure Science: The National Science Foundation's Formative Years, 1945-1957* (Washington: National Science Foundation, 1983), 62.

7. "The Navy explores its Northern Frontiers," *Journal of the American Society of Naval Engineers* 59:4 (November 1947), 471-85.

8 *Across the Top of the World: A Discussion of the Arctic* (Washington: ONR, 1947), 9.

9. Evidence for this proposal is found in a letter of J Murray Steele of ORI to Evelyn Stefansson (Nef), dated 11 February 1946, that returned a re-draft of the proposal. Vilhjalmur Stefansson, *Correspondence, 1895-1962*, Dartmouth College Library, Special Collections, Stef Mss-196. All further references to materials in this collection and to *The Encyclopedia Arctic Manuscript*, Dartmouth College Library, Special Collections, Ctef Mss-96, and Viffijalmur Stefansson, *Papers, 1902-1962*, Dartmouth College Library, Special Collections, Stef Mss-98, will be by date and collection number.

10. 5 July 1946, Stef Mss-98.

11. 18 January 1947, Stef Mss-96.

12. 10 February 1947, Stef Mis-196.

13. 26 May 1947, Stef Mss-96.

14. 28 January 1948, Stef Mss-96.

15. Vilhjalmur Stefansson, "Encyclopedia Arctica," *Arctic* 1:1(Spring 1948), 44-46.

16. 26 May 1948, Stef Mss-96.

17. 10 December 1948, Stef M:,s-96.

19. MC Shelesnyak, "Encyclopedia Arctica," *Monthly Research Report of the ONR* (1 June 1949). This report was subsequently reprinted as a pamphlet. It is interesting to note that the text of the report was read (and edited) by Stefansson before publication. See 14 March 1949, Stef Mss-96.

20. 20 May 1949, Stef Mss-96.

21. 24 February 1950, Stef Ms-96.

22. 21 July 1950, Stef Mss-96.

23. Vilhjalmur Stefansson, *Discovery, the Autobiography of Vilhjalmur Stefansson* (New York: McGraw-Hill, 1964), 363-64. The literature on the Cold War and McCarthyism is large. Among the useful works are: Greta Jones, *Scie.nce, Politics and the Cold War* (London: Routledge, 1988); Ellen Schrecker, *Many are the Crimes: McCarthyism in America* (Boston: Little, Brown, 1998); and Jessica Wang, *American Science in an Age of Anxiety: Scientists, Anticommunism, and the Cold War* (Chapel Hill:University of North Carolina Press, 1999).

24. See Owen Laffimore, *Ordeal by Slander* (Boston: Little, Brown, 1950); and Robert P Newman, *Owen Lattimore and the "Loss" of China* (Berkeley: University of California Press, 1992), for background on these events.

25. Stefansson, *Discovery*, 369-70.

26. Stefansson, *Discovery*, 371-74. New Hampshire's Attorney General, Louis Wyman, known locally as "Louie the Fox," ran his own version of the McCarthy smear campaign for several years. In Stef's correspondence, Stef Mss-196, there is a bit of doggerel verse dated 20 January 1955:

Simple Simon met a Wyman
Trying to be fair.
Said Simple Simon to the Wyman "How's your old red scare?"
Then said the Wyman unto Simon
"I haven't caught so many."
Said Simple Simon to the Wyman, "Indeed, you haven't any."

28. See Stef's letter to Erling Porsild, 21 November 1952, Stef Mss-196. A search of databases such as "Arctic & Antarctic Regions" reeveals a number of essays in journals such as *Polar Notes* and *Arctic* that were first written for the encyclopedia.

29. 25 May 1953, Stef Mss-98.

30. 1958, Stef Mss-196.

The *Fonds Polaire* Jean Malaurie: French Gateway to the Arctic

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France has no territory in Polar area apart from overseas territories in Antarctica - the islands of Crozet, Kerguelen and Amsterdam – housing scientific bases and one scientific base in Ny Alesund, Svalbard. In the past, French involvement in Polar research and exploration has depended mainly upon individual initiatives.

A brief survey of French involvement would include the 1840 expedition of Captain Jules Cesar Dumont d'Urville who discovered the Adelie Land (Adelie was his wife's Christian name). Documents and natural history specimens from this expedition are held by the Museum of Natural History in Paris. France took part in the First International Polar year in 1882-83 with an expedition led by Captain Louis-Ferdinand Martial near Cape Horn. Photographs and specimens from this expedition are also in the Museum. From 1903 to 1936 Captain Jean-Baptiste Charcot led twelve expeditions, two in Antarctica and ten in the Arctic, primarily along the eastern coast of Greenland. He died in 1936 when his ship the *Pourquoi Pas* (Why not ?) was wrecked along the Icelandic coast. Charcot published all his scientific observations. During the Second International Polar Year (1932-33), a French staff worked in Greenland in the area of Scoresbysund, and in 1957-1958 Bertrand Imbert led an expedition in Antarctica for the International Geophysical Year. Dr Robert Gessain and Paul-Emile Victor explored the eastern coast of Greenland, near Angmagssalik in 1937-1938. In 1947, Victor founded the *Expeditions polaires françaises* (EPF) and organized more than fifty scientific expeditions in Greenland and Antarctica . In 1992, the EPF merged with the French Antarctic and Austral Territories Office (TAAF) becoming the *Institut français de recherche et technologie polaires* (IFRTP) located in Brest on the Britanny coast.

This Institute is a public agency providing facilities for Polar research carried out by laboratories and linked to structures devoted to scientific research such as the CNRS, Universities, National Museum of Natural History (MNHN), and the Atomic Energy Commission (CEAE). Its function is mainly logistic as it provides scientists with accommodation in the Polar regions by managing and operating scientific bases, and organizes the expeditions by recruiting the scientific and technical teams and chartering ships to transport the staff. It also carries out oceanographic research programs from the *Marion Dufresne.*

Professor Jean Malaurie created the Center of Arctic Studies in Paris in 1957. Formerly he had spent one year with the Inuit people of Thule in northwest Greenland and submitted a thesis about geomorphological observations he had made in Inglefield Land. For more than forty years, the Center of Arctic Studies has carried out a multi-disciplinary program of Arctic research and developed a wide range of activities from teaching to organising international symposiums and film festivals, publishing proceedings, monographs and periodicals, and collecting information. One hundred and forty scientific expeditions have been carried out all over the Arctic and approximately 60 theses have been submitted on Arctic subjects from physical to human sciences.

The *Fonds polaire Jean Malaurie* was formerly the library of this research center. In September 1992, it was relocated to the central library of the prestigious National Museum of Natural History created in 1793, close to the *Jardin des Plantes.*

The central library of the museum is a public library open to students, researchers and everyone interested in the topics covered, mainly zoology, botany, geology, biology and the history of sciences. Besides the central library, the Museum of

Natural History holds the library of the Museum of Mankind devoted to anthropology, ethnology and archaeology, as well as a dozen of more specific small libraries linked with each research laboratory such as entomology, phanerogamy, and paleontology. All these libraries are supported through the allocation of a state general fund. The two central libraries are closely linked with the French National library and are given complementary allocations to be as exhaustive as possible in such specific disciplines as zoology, botany, ethnography and prehistory.

The card catalogues of all the museum libraries have been – or are in the process of being – computerized, and the resulting shared catalogue called MUSCAT, for MUSeum CATalogue, (muscat being also a variety of grapes and wine) which contains more than 310,000 references of monographs including proceedings, dissertations, technical reports, and special issues of periodicals. The references are indexed using the French thesaurus of key-words called Rameau developed by the French national library and which is inspired by the Laval subject headings list.

For the moment, articles of periodicals and reprints are not indexed. We use the Epixtech Horizon library automation system, produced by Ameritech. Since March 2000, the library catalogue is accessible free of charge on the web at: *http://www.mnhn.fr/muscat.*

This catalogue is part of a more general database which includes all the French University and national libraries catalogues at *http://www.sudoc.abes.fr* and which contains more than 3,5 millions of bibliographical references.

The *Fonds polaire* itself holds about 20,000 monographs, 20,000 reprints, 600 serial titles, maps and microforms. Most of those documents deal with the Arctic and subarctic regions; fewer concern the Antarctic. All subjects are covered from physical and natural sciences to technology and social or human sciences. Some topics such as physical geography, ethno-history and ethnology among the Inuit and North Siberian peoples as well as contemporary political, economical, ecological and educational problems are especially well documented. Approximately 500 monographs and 500 reprints are entered every year. An accession list is published regularly and can be sent to interested institutes or researchers.

The Northern Siberia department is particularly rich thanks to close cooperation with Russian research institutes established since the creation of the Center of Arctic studies in 1957. It holds about 10,000 titles. An important program of translating Russian texts into French, started in 1960, makes available to the library's users over 25,000 translated pages, some of which have been published by the Center of Arctic Studies. The Antarctic is less documented but it is going to be enriched by the donation of the IFRTP library.

Together with the Central Library and the library of the Museum of Mankind, the *Fonds polaire* holds a very large collection of old and rare books on Polar exploration. The oldest record in the library catalogue is from the 15th century. The museum library offers a service of interlibrary loan even abroad. Future projects in close cooperation with the Center of Arctic studies include :

- Publishing of a prestigious book in French on the Art of the Great North planned for September 2001 : eight specialists wrote contributions on Inuit, Eskimo and Aleut, Indian, Sami, Ainou and North Siberian art. A 4th International Arctic film festival will be held in Cherbourg on the Normandy coast in year 2002. I remind you that the first festival was held in 1983 in Dieppe, the 2nd in 1986 in Rovaniemi, Finland in cooperation with the University of Lapland and the 3rd in 1989 in Fermo, Italy in cooperation with the Istituto Geografico Polare.
- Cooperation with the Polar Academy in Saint-Petersburg which is a training program designed for northern Siberian natives who intend to be at the head of local and regional authorities, created in 1992.
- Creation of a French Arctic Museum.

Engineering Electronic Library, Sweden

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Abstract:
In the summer of 1994 EELS was one of the first SBIGs - Subject-Based Information Gateways - to be published on the Internet. It is sponsored by a consortium of Swedish universities of technology libraries, and set up and supported by the NetLab at Lund University. The scanning of resources into EELS is decentralized within a network of subject editors in these university libraries. EELS applies the quality model of the EU Telematics for research in the DESIRE project. The resources are classified using the thesaurus and classification codes of Engineering Information, Inc. The main subject covered by EELS is, of course, engineering. In 1996 an experimental full-text index of international engineering resources, "All" Engineering, was added to EELS.

Introduction:
EELS is a good example of how fast development rushes forward in the field of information technology and in our profession. In 1993, an idea to develop something like a "quality gopher" was growing in a group of Swedish universities of technology libraries.

During the course of planning the issue quickly turned out to be how we could *retrieve* quality information on from the web rather than *produce* the information ourselves. The main target group was, and remains research staff and students at the technical universities, and also the research staff at industrial companies, most of whom are former students from these universities.

Libraries want the information for their users, even from the web, to be of good *quality*. EELS is the contribution of the Swedish universities of technology libraries towards achieving that end.

In the summer of 1994, EELS was one of the first Subject-Based Information Gateways (SBIGS) to be published on the Internet. Subject-Based Information Gateways are subject entrances to quality assessed Internet resources. The resources are selected in accordance with an officially published list of quality criteria and subsequently catalogued, described with intellectually created abstracts and keywords. Compared to common link-lists, SBIGs are much more labor intensive (Brümmer, 2000). Since that beginning, lots of other gateways, virtual libraries, link catalogues, and portals and vortals have made their appearance on the Internet.

In comparison to others, EELS is a small gateway. The For example, last year's budget was a modest 480 000 SEK, ($78, 000 CAD). From its inception, all material included in the EELS collection has been manually selected and edited. At present, EELS contains well over 1400 resources! The number grows daily and as I speak the total has undoubtedly grown significantly larger. The resources are counted a couple of times a year, dead links are cleared and the collection surveyed.

EELS organization
EELS was first established under the sponsorship of the consortium of technology libraries in Swedish universities including the Royal Institute of Technology Library in Stockholm, Chalmers Library in Gothenburg, Linköping University Library, Lund University library, Luleå University Library and Studsvik Library in Nyköping. EELS has been supported by NetLab, the Library Development Department at Lund University. At present, NetLab is working with the European Union project called DESIRE (Development of a European Service for Information on Research and Education), and EELS has served as a test site for this project. The scanning of resources into EELS is decentralized, and uses a network of subject editors.

There is a project coordinator and some ten information specialists, each having responsibility for one or more fields within engineering and the related sciences. No one works full time with EELS. Coverage in various subject fields depends on the hours disposed allocated by the editor.

The editors meet a few times a year at workshops to discuss the project, and update themselves about software and other relevant news. During the last year, the editors have had some technical assistance from cataloguing staff in the manual input into the database. To support the editorial work, NetLab has developed a "demonstrator" of automatic classification which could be helpful for evaluation of the relevance of a potential source. It is being tested by the subject editors now.

Quality and selection policy

EELS applies the quality model of the European Union Telematics for research in the DESIRE project. The ambition is to very carefully check quality of websites using criteria set up for EELS. The definition of quality is often drawn from the commercial sector, where quality is closely related to customer satisfaction, and on enhancing systems through continuous improvement. In the context of a subject gateway, the quality of a resource depends on the users of service, the nature of the service, as well as the internal features of the resource itself.

Criteria relating to quality in the EELS *subject gateway context* can be called **scope** criteria. The aims of the service and its target audience dictate the selection of scope policy. The scope criteria are the first filters through which resources pass in the selection for use process. The relevant questions to answer are:

- what subject matter is appropriate for the target audience?
- what types of resources are appropriate for the target audience?
- who provides the information ?

The selection criteria relating to the *internal quality* of resources are **content, form**, and **process**.

Content criteria are based on the validity and substantiveness of the resources:

- should the information be scholarly rather than popular or commercial?
- should the resource contain more than just a list of links?
- are resources that contain advertising acceptable ?
- are there any geographical restraints appropriate for the target group ?

Special efforts have been made to include relevant Nordic resources in EELS. The rationale for the emphasis on the inclusion of as many Nordic resources as possible has been to support regional work and to encourage regional co-operative research.

Form criteria are based on how the information is presented. Design features affect how easy a resource is to use and navigate. Form criteria include:

- is keyword searching possible?
- does it take more than x number of clicks to get to something interesting?
- is there an index?
- is there any online help ?

Process criteria are based on the processes and systems which exist to support the information resource. Some evaluation of systems is necessary to discern the quality of a resource over time. Process criteria considered include:

- is the system stable?
- is the information current and up to date and has the information been updated since it was first setup ?
- is the site adequately administered and maintained ?
- are the down times announced and are down times infrequent?

Subject coverage

The primary subject area covered by EELS is, of course, all aspects of engineering defined by the Engineering Information browsing index. Closely related subjects such as applied physics, meteorology, applied geology can be included when deemed appropriate by the responsible

editor. At present, some of the better, most thoroughly covered areas are computing and arctic engineering.
There are plans to test cooperation with other SBIGs via the European Union project Renardus and the Nordic project NISBIG, which would enhance the subject scope.

Classification
Resources are classified using the thesaurus and classification codes of Engineering Information, Inc. EELS editors have access to the EI thesaurus electronic version. Its use has improved the classification process. Up to 14 classification codes and thesaurus terms can be assigned to a resource. Additional descriptors, searchable in the description field, can be added when necessary. This happens quite often when a resource has an aspect not covered by the thesaurus.

The choice of Engineering Information as the basis of classification offers a good choice as to content and subject. The Engineering Information thesaurus and the classification scheme were created for indexing and classification of journal papers and conference papers, topic areas that are, by their nature, quite specific.

The broader topic content of web pages, like research institutions, organizational home pages and link lists, demands use of the higher level descriptors. This means that there are many notations of "Empty branch" in EELS, when it comes to more specified and detailed subject areas.

There is a project to test **automatic classification** on a large number of records in a larger subject index (Ardö & Koch, 1999).That system requires a great deal of preprocessing using the Ei thesaurus to obtain exact descriptions. On the other hand, the Ei vocabulary with its large share of composite terms, provides an unusually rich and precise vocabulary with the potential to reduce risks of false hits. Compared with the captions alone, single terms, the linked thesaurus provides us with a rich additional vocabulary for every class.

I will not go into the details of weighting and matching of terms, but do want to add a few words about the results of testing. First of all, what is the correct classification? A small group of engineering librarians and expert users applied intellectual, human, classifications. The results were compared with the results from the automatic classification. Some examples from the test show that in Ei class -- 903 Information science -- 75,5 % of the records were "correctly" classified. In Ei class 801.2 Biochemistry -- 61,5 % were correctly classified. Ei class 412 Concrete, only 37 % were correctly classified (Koch & Ardö, 2000).

There are some predominant causes of errors related to the incorrectness -- or discrepancies of the automatic classification:

- highly weighted thesaurus terms which occurs in a **context different than expected**. Identical terms appear to belong to different subject classes but are not recognized by the automatic process For example, "drives" applies to mechanical drives in 602.1, electric generators and motors in 705, as well as pneumatic equipment in 632.4,
- a thesaurus term matches **plain language homonyms** in the documents which are not part of the thesaurus and taken care of by the term-class mapping. In class 412 Concrete, this is obvious because of all the different meanings of this word in natural language.

There are future plans to compare classification between Engineering Information and the Dewey Decimal Classification in cooperation with the OCLC Office of Research, using the full DDC version 21 with additional vocabulary from the LC Subject Headings mapped into it.

"All"Engineering (AE)
In 1996 an experimental full-text index of international engineering resources, "All" Engineering, was added to EELS. A harvesting robot starts with a seed group of originally 7, now 6 manually selected engineering collections on the net: Yahoo, Galaxy, ICE (Cornell), Internet Pointer Guide (Denmark), EELS, and EEVL that has recently merged with NASA . It then follows all links in these collections two levels down. A

Zebra Z39.50-based retrieval engine is used to manage and index the records. This allows the database to be searched together with other Z39.50 databases in EELS.

Integration between the manually created, quality assessed EELS and the robot-generated "All" Engineering index offers experimental simultaneous searching using Z39.50 as search protocol and Dublin Core as the metadata standard. The result display keeps the different quality levels separate (Ardö, Koch, & Noodén, 1999).

About 77 % of the resources in this automatically generated index are evaluated as being relevant. As an example, searching for "Arctic engineering" in EELS retrieves 19 hits. Searching the same term in "All" Engineering retrieves 106 hits, mostly because of the additional two levels that are included in the search process.

Usage

In July 1999, EELS completed its fifth year of service. Robot traffic appears to have increased significantly, as has the use of web caches and proxies which makes it impossible to get accurate statistics of the usage, just estimates.

EELS usage, *including* the robot traffic, has increased 1.6 times over the previous year. 1998-1999 the total number of accesses was over 1 126 000 times, compared to 475,000 times in 1997-1998. Retrievals have more than doubled (2.4 times) to 101 495.

There were 145,626 return visits from unique hosts this year. A return visit is defined in EELS as a transaction that occurs at least 1 day and night after a previous visit from that particular host.

Access to EELs has been gained from 141 identifiable countries or domains during the last year (Noodén, 1999).

Summary

At Luleå University of Technology we have found EELS to be an alternative to usual web search engines in searching web-based information sources in engineering. Working with EELS has given me another view of information accessible on the web. It takes a lot of time and effort, but even a small gateway can make a difference.

Besides, using EELS as a test index, new methods and techniques for handling and organizing information on the web can be developed.

This week, the financing board will have a meeting about the future of EELS. A user investigation will be carried out to make the basis for a future "to be or not to be" decision for EELS.

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Noodén, L. *EELS statistics (01 jul 1998 - 30 Jun 1999) (preliminary draft)*. NetLab., 1999. *http://eels.lub.lu.se/statistics/userstat1999/9899elsAnalysis.htm*, [2000-04-28].

Some URLS:

DESIRE II (Development of a European EELS *http://eels.lub.lu.se/* Service for Information on Research and Education) *http://www.lub.lu.se/desire/desireIIindex.html*

NetLab *http://www.lub.lu.se/netlab/*

NISBIG (Nordic Interconnected Subject-Based Information Gateway) *http://www.lub.lu.se/nisbig/*

Renardus *http://www.renardus.org/* Cooperation project for SBIGs

OADS (Resource Organization And Discovery in Subject-based services) *http://www.ilrt.bris.ac.uk/roads/* A set of software tools to enable the set up and maintenance of web based subject gateways

Information and Research Sources on the Indian and Northern Affairs Canada Internet Site

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Abstract

The Indian and Northern Affairs Canada Internet site is a valuable source of information and research about Canada's Aboriginal peoples and the Canadian North. This paper will discuss some of the highlights of the web site, located at *http://www.inac.gc.ca.*

Note: Documents and publications of Indian and Northern Affairs Canada usually capitalize words such as "Aboriginal" as a sign of respect for the Department's clients

The Department has two names. The Depatment of Indian Affairs and Northern Development (DIAND) is the legal name of the Department, used, for example, in legislation. Indian and Northern Affairs Canada (INAC) is the Department's corporate name, more clearly identifying it as a part of the government of Canada.

Introduction

The Indian and Northern Affairs Canada (INAC) Internet site, available at *http://www.inac.gc.ca,* has two main roles. It provides information to Canadian Aboriginal peoples and Northerners on federal government programs and services available to them. The site also promotes an increased awareness of the issues and concerns of Canadian Aboriginal peoples and Northerners among the Canadian general public and others around the world. The INAC Internet site is a bilingual site, containing information in both English and French. On June 21, 2000, INAC will be launching a new look for its Internet site, as part of Canada's National Aboriginal Day celebrations.

The INAC Internet site is a valuable source of information and research. The following are a few of the site's highlights.

Gathering Strength

The main English page contains a special link to information on **Gathering Strength: Canada's Aboriginal Action Plan**, the Government of Canada's response to the recommendations of the Royal Commission on Aboriginal Peoples which were made public in October of 1996. **Gathering Strength** was announced on January 7, 1998. An important component of the action plan is the **Statement of Reconciliation**, an acknowledgement by the Government of Canada of "past actions that resulted in weakening the identity of Aboriginal peoples..." (Canada. DIAND. *Statement of Reconciliation)*

An Aboriginal Healing Foundation has been created to support "the Government's commitment of $350 million [for] community-based healing initiatives for Métis, Inuit and First Nations people on and off reserve who were affected by the legacy of physical and sexual abuse in Residential Schools." (Canada. DIAND. *The Aboriginal Healing Foundation: Backgrounder*) A copy of the ***Statement of Reconciliation*** and information on the Aboriginal Healing Foundation are included in the INAC web site's section on **Gathering Strength**.

Aboriginal Supplier Inventory

To encourage an increase in the purchase of goods and services from Aboriginal suppliers by the federal government, Indian and Northern Affairs Canada has created an **Aboriginal Suppliers Inventory**. Access to the inventory and the federal government's **Procurement Strategy for Aboriginal Business** is available through the **Aboriginal Suppliers Inventory** section appearing in the "Express Lane" on the left hand side of the web site. Aboriginal

suppliers may submit entries for their companies to the **Aboriginal Supplier Inventory** through the web site. Federal departments and others interested in hiring Aboriginal suppliers may also search the inventory. Suppliers may be searched for by supplier name, city, province, goods and/or services, Goods and Services Identification Number (GSIN), Standard Industrial Code (SIN), or any combination of these.

Departmental and Other Federal Programs and Services

The web site has two sections containing information on Canadian federal programs and services available to Canadian Aboriginal peoples and Northerners.

The section **Programs and Services** that appears in the menu bar at the top of the site is linked to information on the programs and services offered by Indian and Northern Affairs Canada itself.

The section entitled **Federal Programs and Services for Registered Indians** in the "Express Lane" on the left hand side of the site provides summaries of programs and services available through other government departments. While the phrase "Registered Indians" in the title of the section refers to Indian peoples entitled to special government programs as a result of historic treaties, many of the programs in this section are available to all Aboriginal peoples in Canada - Inuit, Métis and Indian peoples with or without treaties.

Kids Stop

The **Kids Stop** is another interesting section appearing in the "Express Lane." This section contains information products especially designed by Indian and Northern Affairs Canada for kids. The INAC Departmental Library has recently developed a bibliography of books by and about Aboriginal peoples for children ages 4 to 14. This bibliography is available in the **Kids Stop**.

News Room

The **News Room** section in the menu bar at the top of the site gathers together the information products of INAC's Communications Branch, including news releases, departmental newsletters and speeches by senior departmental representatives, notably the Minister. The **Information Sheets** in this section provide concise background information on topics of special interest, for example **Frequently Asked Questions about the North.**

Publications and Research

The **Publications and Research** section listed in the menu bar contains links to agreements, maps, legislation and treaties.

A series of **Community Profiles** is available in this section, searchable by First Nation, Tribal Council or Reserve name. A community profile may contain such information as census statistics, registered population figures, names of First Nations officials and geographical information.

The **Publications and Research** section also contains a link to the **Kiosk**, the Public Enquiries and Publication Distribution Unit that is a part of the INAC Departmental Library. A web version of **In Print**, the catalogue of free departmental publications, is available in the **Kiosk** subsection. This web version of **In Print** allows online ordering of publications.

The INAC Library catalogue will soon be available for searching through the departmental Internet site. Web pages with information on the INAC Departmental Library, regional libraries and other INAC research collections, as well as a link to the INAC Library catalogue will appear in the **Publication and Research** section.

References:

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Libraries in 2005-2010:
A Vision for Strategic Planning.

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The world of information is changing so rapidly that it is difficult to plan and allocate budgets for the most effective use of our funds. How do we maintain the traditional library services and resources that are expected of us, while providing the new resources and services that are rapidly becoming available? Each of us is confronted on a daily basis with the question of purchasing a new electronic resource or purchasing a paper resource. If it is electronic, do we purchase only local access or a broader geographic access? How many simultaneous users? Do we put our staff dollars into cataloguing or computer staff?

In order to make these decisions we need to envision the future of information resources, clientele expectations, the library environment, and political environment. Once we have a vision of the future we can plan strategically. We can make difficult staffing and resource decisions knowing where we expect library resources and services to be in 5 or 10 years.

I have been working on envisioning the future, and strategic allocation of resources for the last 2 1/2 years. The following vision of libraries and the information environment between 2005 and 2010 is presented for your consideration and discussion.

Library User Trends:

Our clientele will expect instant information, and desktop/home delivery of information. They will be unwilling to wait for ILL, or other traditional methods that libraries use to share resources. Our younger clientele will want the new bright and flashy ways information is presented and delivered. As we near 2010 we will have increasing difficulty convincing them to use information in books. There will be an ever-increasing gap between those unable to adapt to the changing technology, and those who accept technology in constant flux as normal. Computers and Internet access will be in most homes and all schools. Library users will also be experienced Internet users. They will however still be unsophisticated searchers. Librarians will provide professional assistance for students and adults locating information in electronic format.

As computers and information needs become critical in the workplace, some post secondary school education will be a requirement for most for job seekers. Students will look for programs that offer delivery of courses in their own homes. Commercial training systems and schools will compete with universities/colleges for these students.

Universities and colleges from across the nation will be competing for student enrollment. Each will have a nationwide student base and will be working on an international student base. By 2010 most students will spend the first 2 years taking basic courses in their hometown. All lower level undergraduate required courses will be offered electronically. Materials needed for course work will be digitized so the student just clicks on the professor's home page and downloads information for class assignments. Students will expect to be able to do any "library" research online. The majority of upper level undergraduate and graduate courses will still be taught on campuses, but the option will be available to take many of them electronically. Students will have to come into a common site for lab and field classes. Many universities will be able to provide entire degree programs remotely.

Information Trends:

Information will be available both electronically and in paper, but paper products will be declining. Publishers will be temporarily offering reduced rates for electronic access only, in order to ease out of being expected to publish in paper.

By 2010, the format of journals will be changing to make use of the new electronic environment. Most journals will have interactive elements, use graphics in motion, present data in charts that allow the reader to change certain elements and visually see the results, even link to operating models, and live envirocams. Without the limitations of the print format, journals will no longer need to do theme issues, and may no longer have issues at all. These will instead be changing to subject defined web sites with continuous addition of "articles" and ever-changing information. Libraries and scientists will purchase the communication links, so that their patrons/students can directly contact authors through the sites, and engage in online discussions and exchanges of information with the other users of the site. New methods of peer reviewing will be instituted. Links to the papers in the cited works will be provided as part of the paper, even if it entails gaining rights and digitizing older materials. Due to this new concept, very complex copyright fee systems will be developed.

The journal system of publishing will still be in existence, but more and more universities and government agencies will be self-publishing the works of their faculty and staff on the web. In 2005, the big issue being debated in universities will not be whether electronic publication is acceptable, but rather how to provide peer review of these articles, without going to the commercial publishers. The big issue in libraries will be how to find these publications and link them to our system.

Electronic books will be in constant flux between 2005 and 2010 as publishers try many different methods of delivery. Already we have efforts at on screen libraries, where our patrons check out the titles that we have purchased in a traditional library fashion. Some publishers are looking at the simultaneous user sales method. Tests are being done of handheld electronic books into which text and graphics will be downloaded. Even reusable paper has come into the mix.

Publishers will be scrambling to make deals with organizations and institutions to maintain their publications electronically in an NTIS type of service.

Government Documents and grey literature will be mostly electronic. At first agencies will jump on the bandwagon of electronic publishing, and governments will see this as good, because of reduced cost and the illusion of more access. By 2010 Governments realize the true problems, and will just be starting to tackle the archival issue and authority issues as well as how to find these reports and documents in the mass of information on the Internet.

Web self-publishing by government and university agencies will still be providing free access to their information, but by 2010 they will be starting to look at charging a small fee for accessing their information to support the dwindling budgets that they receive.

Large electronic delivery services will be selling access to journals and reports on a cost-per-use basis. Monographs will also be entering this realm. But the entire publishing industry will be gearing up to move from selling journal subscriptions to a pay-as-you -go world where access to each article or document will have a small access charge which will be billed directly to a persons debit card as an electronic transfer of funds.

Archiving will become recognized as a major problem by 2010. The government agencies, public and education institutions will begin listening to librarians about the need to provide for continued access to titles. On the library front we will still be debating the problem, but will have made major inroads with commercial archiving services, consortial archiving projects, as well as demanding archival plans for products that we purchase.

Budget Trends:

Budgets will continue to be under attack over the next 10 years, as taxpayers demand tax reduction. Universities will be funded more and more by student enrollment. In response to this pressure, and the availability of the Internet, they will expand their programs to region-wide and then

nationwide or worldwide. This competition for funds and students will pressure higher education institutions into more direct competition with each other. They will also be expected to raise more funds from grants, gifts, and cooperative programs with business and industry to support educational programs. Pressure to secure grants will increase. It will be difficult to maintain the high quality education programs (such as the library) that do not produce the dollars of support.

Libraries will have difficulty defending their budgets in this climate, and will be entering into shared collection development and resource sharing agreements with other libraries of all types. These consortial arrangements will be both local and national. Every institution will have overlapping consortial contracts for materials and services: local, statewide, national. International consortial arrangements, while made more difficult by legal and currency concerns, will become more common by 2010.

More of the potential budget for information resources will be going into the statewide system (either as direct budgeting from the Legislature or as consortial sharing of funds from institutions within the state) We will lock more and more of our funds into multiyear and consortial contracts for electronic resources. This will result in diminished traditional collection development activities. We will be weighing the value of, and selecting large aggregate products rather than individual titles.

Library Trends:

The public libraries will still be the sole Internet access point for many poor adults. They will also serve the members of the older, less technologically adaptive population. Children will still use libraries, drawn in by traditional story times and social activities. Fewer students and undergraduates will use the library buildings, except as study areas and computer labs, but there will be extensive use of the libraries' web resources from offsite. Many adults of the "book generation" will continue to use the library in traditional ways. Graduate students and faculty will continue to use the library in traditional ways, but will also be using electronic resources more often than coming to the library.

Librarians will be taking on the role of link between users and information resources in all formats and in all areas. Teaching people how to effectively and efficiently locate information and how to judge the quality of the information will be a primary responsibility in libraries in the education setting. This will be done in the classroom, in offices in a consultive setting and one-on-one in the library.

At the university level, a primary role will continue to be interaction with campus faculty to provide essential information resources needed for teaching, research and service. An escalating concern for librarians in academic environment will be the tendency of students to shun anything that can not be delivered in electronic form to their homes and classrooms. The "glass floor" of information will be even more dramatic as people do not need to come into the library, where they can be directed to traditional printed resources by the staff. Older material will begin to be ignored as a source of information, by not only undergraduates, but also graduate students.

With the increased demand for instant access to information, libraries will put more of their resources into direct document delivery (without using the library as a middleman) and for electronic access to information directly from the office/home of the user.

All states will have some version of a statewide library service, to which all libraries in the state contribute in services and pooled funds. Citizens will use this system heavily. Clientele will be able to borrow books and media, get digitized or faxed copies of journal articles, book chapters, graphics, sound bits and video clips delivered to their homes or offices from any library in the system. Digital materials, indexes, and other resources will be purchased centrally for access by all clientele. The "Information Shop" (shared central catalogue and accompanying library web pages and links) will be the focal point for accessing this system.

Library users will be able to place holds on material from home or office, and will checkout their materials at self-service stations in each library.

Due to reluctance of undergraduate students to go into a library or use anything that is

not available online, libraries will be discussing alternative methods of delivery service for monographs and serials that the library already owns in paper. We will also increase our efforts at digitizing materials in the public domain, for electronic delivery.

With heavy demands being placed on dwindling budgets, libraries will engage in increased sharing of materials, with the re-institution of collection development agreements, improved direct loaning of materials to the user, archiving agreements for paper copies, digitizing agreements, and consortial purchases of expensive resources.

More libraries will form CARL type relationships and provide electronic access to books and journals in their joint collections, and charge for the service. This will provide them with money to develop stronger collections.

As publishers try varying journal access models, the titles and availability of journal type information in libraries will be in constant flux.

Some libraries will engage in wholesale journal cancellations, and purchase instead aggregate collections, move to direct document delivery services, or move to Project Peak type of pay-per-use contracts.

We will be purchasing electronic books for our "circulating" collections. By 2005, we will be using electronic nonfiction and standard resources, but will be using electronic fiction mostly as the second copy of a popular title. By 2010 the technologies for user-acceptable delivery of leisure reading will have reached the point that we will be purchasing a large proportion of fiction in an electronic format.

Collection development will still be a major responsibility, especially since careful purchasing is even more essential with fewer funds available. Collection development will no longer involve just items we purchase for our clientele. Core collection parameters will be established to focus what our clientele must have access to. And collection development efforts will focus on getting access to the information for our patron rather than creating a collection. In addition to purchasing physical books and media, we will be evaluating and selecting free websites and providing links to them, and arranging direct document delivery of materials that our libraries will never purchase. Then as information moves into a pay-per-use world, we will be negotiating best prices for each time one of our clients uses a product.

Due to the increase in self-publishing on the web, the library will be adding links to university and government web site publications to the catalogue. The catalogue will no longer be the titles we own, but rather the titles that we have access to. Each will be selected by librarians for value and content. Grey literature will continue to be a challenge to locate.

Cataloguing will change from traditional detailed cataloguing of the items that we own, to quick and easy pointers to titles to which we have access.

With fewer of our clientele actually coming into the library, librarians will provide telephone and e-mail assistance, and will schedule appointments for in depth assistance, instead of having reference desk hours. Librarians in larger institutions will become truly specialized in their reference subject areas, with questions directed to the appropriate librarian.

Twenty-four-hour reference service via web, e-mail, and toll free calls will be available to clientele as libraries join service consortia. This will be accomplished by service agreements between similar libraries in different time zones, and shift work for reference specialists.

There will be an emphasis on efficiency and cost effective services in all types of libraries. Accountability measures will be increased. This will become an increasingly financial impact on higher education libraries.

As a result of mandated budget reductions and the increased necessity for funding electronic access to resources, fewer personnel will be employed in large libraries. With e-mail, video conferencing, and so much of the work being related to web resources, more positions will be filled by tele-commuters.

Publisher restrictions on using electronic journals for ILL will erode the viability of most ILL programs for current materials. ILL will become a service providing access only to older materials. Commercial document delivery and research will move solidly into the marketplace.

Many libraries will be evaluating electronic document delivery vendors as an easier and faster method to provide information than ILL. Copyright issues will be a stumbling block to electronic ILL.

Copyright issues will become more complex. We will not only have to deal with the copyright law, but with restrictions of individual licensing agreements. With the linking of footnotes to full text articles, the copyright issue will become almost impossible to sort out.

Due to rapid change in technology and the information world, the library program will be in constant flux. Change will be the rule, as we race to keep up with the changing world of information and expectations.

Conclusion:

My hope is that you will photocopy this paper from the proceedings and sit down with your colleagues to talk about the scenarios that I have presented. Use this as the seed of discussion. Your colleagues will undoubtedly say in some instances "She's nuts. It will never happen." But however you judge my predictions, you should create your own vision, and use your resources in the best way to prepare for the future of libraries and information.

Projecting Polar Images: The Hudson's Bay Company Film Collection at the Hudson's Bay Company Archives

Peter Geller
Inter-Universities North
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Scott Reid
Provincial Archives of Manitoba

Passing Through the Gate

As is well known, a film is actually a series of individual images that, when projected, give the sense of movement, and become, as it were, a motion picture. Threading its way through the projector, the sequence of still images passes through the film gate, where it is aligned in front of the lens, held for a brief moment and projected for the expectant audience. In our digital and video age, where documentary and fiction increasingly merge on our television screens, the film gate serves as a reminder that film too is at once both real - a physical object - and an illusion - of motion. In this blending of technology and perception the past is linked with the present and distant lands and people seemingly appear before our very eyes.

What does this suggest of the moving images held in polar libraries and archives? The film gate is, in a sense, the keeper of the images, and speaks to the important requirement of physical care that these documents require. But the film gate only "holds" the individual frame in place so that it can be projected for an audience. Similarly, archival films require an audience, the meaning and value of the document emerging from the continuing interaction between the gatekeepers and the viewers and researchers.

The Collection

Some important surviving images of the polar past include the films sponsored and preserved by the Hudson's Bay Company. Now held at the Hudson's Bay Company Archives (HBA), Provincial Archives of Manitoba in Winnipeg, this small but significant collection of film spans over seventy years, depicting company activities, employees and special events from the 1920s to the present day. There are also several National Film Board of Canada (NFB) and privately produced films in the collection for which the HBC does not retain copyright, but nevertheless represent company activities, events and interests. The film collection represents the efforts on the part of the HBC to publicize its business activities and accomplishments, and also affords a personal and intimate look at the lives and day-to-day activities of the company's employees.

There is a companion film collection held at the National Film and Television Archives of the British Film Institute and this collection, which includes some 35 mm nitrate films is also available to the researching public. While a few items are duplicates of material held at the HBCA, most of the material is unique. Of particular interest is the extensive footage made in celebration of the Hudson's Bay Company's two hundred and fiftieth anniversary of incorporation in 1920. The HBCA has initiated preliminary discussions on obtaining copies of these films to supplement the collection held here in Winnipeg.

Archives staff provides reference services to the collection and footage has been used for a variety of professionally produced documentaries and dramatic productions. The recently opened Hudson's Bay Company Gallery at the Manitoba Museum of Man and Nature, for example, draws heavily on the HBCA film collection in the continuously running videos that complement the material objects on display. The Archives also

duplicates footage for personal interest and as staff time and resources permit, footage is presented at the Archives' "Film Nights." HBCA films always figure prominently at these events.

The most historically significant items in the collection have been transferred to broadcast standard videocassettes and it is from these that reproductions are made for the purposes of researchers and film companies. The originals remain untouched, housed in the Archives' vaults at carefully monitored temperature and humidity pre-sets. New acquisitions are initially reviewed for their content and significance and then prioritized for copying. If the films are found to be in good condition then they can be copied using technology available in Winnipeg. Films showing significant shrinkage or wear and tear must be copied using a Rank Cintel film duplication machine. This is an expensive undertaking and is dependent on budget constraints, although the Archives has at times partnered with interest groups in copying footage to an easily reproducible, archival standard, magnetic tape format.

A Fur Trader's Views: The EW Hampton Collection

The film collection continues to grow in scope and extent, with the emphasis in recent accessions being on the personal. Amateur film buffs found their way into the ranks of the HBC, and their films provide us with a unique look at life as a company employee. The cameras of choice for the amateur film maker in the north were the trusty 8 and Super 8 mm cameras, and the results, as represented in the collection, have proven exceptional.

A recent acquisition provides one such example, from the camera of Ernest Hampton. Born in Scotland in 1905, Hampton came to northern Canada to work for the HBC in 1924. After six years as an apprentice clerk in Hudson and James Bay, Hampton was transferred to the Saskatchewan District, where he spent the next quarter century as post manager in northern Manitoba and Saskatchewan, including Oxford House, Stanley, Green Lake and Wabowden.[1] As an "amateur" filmmaker and photographer, Hampton followed in the footsteps of HBC employees such as James L. Cotter, Bernard Rogan Ross, George Simpson McTavish, Charles Horetzky and WB Malloch, who practised their photographic craft in the 1860s, 1870s and 1880s.[2]

Yet the film making technology of the twentieth century allowed Hampton to capture a more spontaneous view of the northern fur trade than the stilted and posed scenes staged for the elaborate equipment of the HBC photographers sixty years earlier. In Hampton's films one sees the moving image equivalent of the family photo album, a document of places lived, of relationships that build and drift apart over thirty years in the Canadian north. His films record the usual preoccupations with displaying the furs traded (and sneaks in a laugh when the skunk skin is held up for the camera); the antics and leisure pursuits that accompanied HBC working life (such as the ever popular flag pole climb); transportation (especially the planes that transformed northern communication and transportation); and the indigenous peoples that lived and traded at the post. The collection is especially evocative in its views of fur trade family life, as Hampton features his wife and children in a variety of seasonal clothing and pursuits through the years. In the Hampton collection, family and post life are depicted in a refreshing and personalized fashion, different from that of the "official" Hudson's Bay Company perspective or the hired documentarian.

***To the North*: Tourist Films and Outsider's Views**

While Ernest Hampton and others were making northern home movies, another view of the north on film was emerging. Southern tourists followed in the footsteps of the fur traders and returned with their own polar views. Given the Hudson's Bay Company's near monopoly on northern transportation - the Canadian government's annual Eastern Arctic Patrol found passage aboard the HBC's steamer, after all - it should come as no surprise that the Honourable Company become actively involved in promoting the tourist trade. First in the western arctic, and then in the east, the HBC renovated its transport vessels to carry paying passengers who came to see - and record - the northern views. A 1926 advertisement in the Hudson's Bay Company's magazine, *The Beaver*,

written by editor (and later Hollywood screenwriter) Robert Watson exhorted readers:

> *Let us forget awhile the city's noises and seethe.*
> *Take us where forest sighs and water races;*
> *New scenes, strange sights, the Midnight Sun,*
> *Where we may breathe*
> *The freedom of God's Northern open spaces.*[3]

One such tourist film maker was Edwin W. Mills. Born in 1899, Mills grew up in Hamilton, Ontario, where he raised a family and ran a business until his death in 1979. Mills travelled widely, including an eastern arctic cruise aboard the HBC's *RMS. Nascopie* in 1937. This was the year that the *Nascopie* met up with the schooner *Aklavik* from the western arctic, and the exchange of furs and goods in Bellot Strait was billed as the first commercial completion of the fabled Northwest Passage. As the ship headed north, the *Nascopie* passengers were whipped into a frenzy of filmic activity. According to the official Canadian government cinematographer, Richard S. Finnie:

> Northward the icebreaker steamed, until she reached the apex of her cruise, Craig Harbour.... Probably more feet of film were exposed at Craig Harbour than at any other of the score of settlements on the *Nascopie*'s itinerary, for, while the camera subjects were few, the passengers were imbued with the 'farthest north' spirit. They filmed the Mounties and the Eskimos, the buildings and the rocks, and then each other.[4]

The title of Mills' four reel film, *To the North*, is not only a reference to a geographic destination, but a toast, as the picture of the bubbling champagne glass accompanying the opening credits announces. Yet in the film's enthusiastic celebration of this historic moment, it also reveals the assumptions underlying commercial expansion in the Canadian arctic. As one of the intertitles proclaims at the beginning of the second reel: "Eskimos are Canadians not wards of the Government. Happy, contented and valuable citizens." This is followed by images of Patsy Klengenberg and his family, the Inuvaluit crew who accompanied the *Aklavik* on its voyage from King William Island to Bellot Strait. To this southern observer the north was still a place of discovery, of "new scenes" and "strange sights." At the same time, the exotic was rendered into a series of familiar views, as the indigenous inhabitants smoke cigarettes and display their babies for the tourist's gaze.

Hudson's Bay Company Image Making: Official Views

The films created by the Hudson's Bay Company itself serve as a gateway into understanding how the HBC, as a corporate entity, projected its own public image. As will be seen, this public image was intimately linked to the company's northern presence.[5] The promotional film put together by HBC employee George Binney for the annual Leipzig Exhibition on the fur industry in 1930, for example, presented an overview of the company's fur trading operations.[6] In a somewhat predictable structure, the film, titled in both German and English, presented portraits of HBC traders in the field, a series of mostly static shots of the Native peoples the traders traded with, and images of animals and wildlife (the resources that the Native peoples harvested). This was followed by several sequences on northern transportation, views of company posts, and then the final product, the finished furs in the London fur warehouse of the HBC.

Amidst this conventional presentation, however, the images and scenes projected a view of the interplay between tradition and modernity in the north, between a glorious past and a profitable present. Throughout the Leipzig Exhibition film runs the thread of old and new. The ruins of Fort Prince of Wales, an early fur trade post on the shore of Hudson Bay, give way to images of the construction of the terminus of the new rail line at Churchill, completing a transportation network running from the prairies to Hudson Bay. Similarly, pictures of the older men among the HBC fur traders were introduced by the intertitle "Experience of Age," followed by the title "Enthusiasm of Youth" and a shot of two young men. This was not merely the march of progress,

but a more complex vision of the continuity of tradition, as the old and new were seen to co-exist in both the material foundations of the HBC's north and in the character of HBC men in the field.

An even more developed expression of this interplay between tradition and change is found in the filmed version of Governor Patrick Ashley Cooper's trip to the eastern arctic and Hudson Bay in 1934. With an eye towards attracting maximum favourable publicity, HBC directors in Canada and England approached the Governor's Tour as an exercise in "detailed stage management."[7] The recently hired Canadian public relations officer, Douglas Mackay, engaged a professional camera operator for the job, the Associated Screen News' Harvey Basset.[8] Photographs appeared in a profusely illustrated commemorative volume and in the company's "Magazine of the North," *The Beaver*, while Bassett's moving images were edited into a film version of this "historic occasion," the first visit of a Governor of the Company to its northern posts in two hundred and sixty five years of *Trading into Hudson's Bay*.[9]

In the motion picture version of this historic event in the making, the link between an imperial past, present and future was depicted in the shipboard ceremony honouring the "Gallant Navigator and Explorer" Henry Hudson. Cooper, the thirtieth Governor of the HBC, is pictured throwing a wreath into the icy water, as viewers are informed that "the school children of the Empire gave their pennies to buy a wreath to honour Henry Hudson's memory." In contrast to this solemn and formal occasion, another shipboard sequence pictured company and government officials exercising while the *Nascopie* was held up by the ice; yet even in these scenes of leisure, a measure of decorum reigns: when it is time for leapfrog, only the HBC's Fur Trade Commissioner Ralph Parsons and commander of the Canadian government's Eastern Arctic Patrol, Major David L McKeand can play with Governor Cooper.

The theme of an ordered social hierarchy in the North is developed throughout the film, and carried over into social and economic relations with the region's indigenous inhabitants. Centred around Governor Cooper as the main character, the film presented his movements through an ordered northern landscape of HBC posts, guided by the company vessel. The viewer was invited to vicariously join the voyage, to accept the film's point of view and perspective as a natural and appealing way of viewing the HBC's role in the Canadian north. It should be noted that not all viewers shared in this perspective. While acknowledging the quality of the motion pictures of the Governor's voyage, Major McKeand noted that "These pictures, however, magnify the importance of the Company's influence on the Eskimos."[10]

Within the film, the rituals of gift-giving and exchange were highlighted. "The little brown people of the Arctic" (according to the inter-titles) are seen gathering to greet the Governor and his entourage at each northern post visited. The viewer is informed that in response to the message relayed by Governor Cooper "from His Majesty the King to his Eskimo subjects... the head Eskimo read a reply which the Governor, on his return to England, handed to his majesty."[11] After a further address by the governor, presents were then distributed to the assembled Natives. In these ceremonies of exchange Native and white were seemingly bound together. Yet this relationship was far from equal. Just as Cooper stood in for King George and represented the values of hierarchy and authority, as the Governor he embodied the notion of the superior material presence of the HBC, the representative of commercial Civilization in the ever expanding Empire. An important aspect of this imperial theme, then, was the naturalizing of the relationship between the HBC and northern Natives, and the projection of the subordinate position of indigenous peoples as subjects of the HBC-led civilizing mission.[12]

What the film does not fully reveal is the role of representation in these exchanges, in conveying messages of "family" and "Empire." While Governor Cooper presented a hunting knife and a message from the Governor, translated into syllabics, to the men - the film documents the import of this moment in a scene of seated Inuit men studying the message - Mrs. Cooper distributed dresses or sweaters and a folder containing a message and a photograph of herself

and her children to the Inuit women. Then, following the formal gift-giving portion of the program, races and other sporting events were held, and in the evening a motion picture screening was given. In addition to the HBC's Leipzig Exhibition film, a special film was shown "of their King's ceremonial life, a film from His Majesty's own collection" which included the message from the King.[13] Company officials were especially anxious that the film be shown, arranging special equipment to guarantee that the projector would operate at the northern ports of call.[14] Inuit men received hunting implements and the Governor's words, Inuit women clothing and a photographic keepsake of the Governor's wife; but all - men, women and children - were invited to watch, as interested and loyal subjects, the image of the King, father of the Empire.[15]

In its depiction of the relationship between the company and northern Native peoples on film, a relationship which positioned the company as surrogate of imperial authority, *Trading into Hudson's Bay* both mirrored and contributed to this way of perceiving the Hudson's Bay Company. This imperial aspect of the HBC's corporate image coexisted with another element, represented in the figure of the heroic fur trader. In terms of visual representation, this meant supporting the efforts of company fur traders and circulating and displaying their films and photographs. In the also named *Trading Into Hudson's Bay*, produced in 1936, views of the Governor's 1934 tour, of HBC post buildings, and "Eskimo types" were set beside "Shots of the North - a collection of scenes from Fur Trade cameras." Here was a chance to literally "see" the scenes of HBC activity from the perspective of company's personnel. "Authentic" scenes of fur trade life, taken by real live fur traders such as EW Hampton, appeared alongside the work of professional image-makers, enlisting and incorporating the presence and authority of the company's men in the field to the HBC's publicity project.

As the images frozen on film come alive again, we too are projected back in time, the pictures holding clues to past encounters and perceptions of polar people and places. As we contemplate these films, let us remember and acknowledge not only their makers, but also honour those pictured in the films. Sometimes named, more often unidentified, they connect us to the past, imploring us to keep the gateways open.

List of Films

1. Hudson's Bay Company Archives (HBCA), Provincial Archives of Manitoba, F112 Ernest Hampton Collection, ca.1925-1954 (8mm, B&W, approximately 120 mins).

2. HBCA, F35 *To the North*: Nascopie Voyage, 1937 (16mm, B&W, approximately 60 mins).

3.HBCA, F1 Leipzig Exhibition, 1930 (16mm, B&W, approximately 25 mins).

4. HBCA, F16 *Trading Into Hudson's Bay:* Governor's Trip to the Eastern Arctic, 1934 (16mm, B&W, approximately 120 mins).

5. HBCA, F4 *Trading into Hudson's Bay*, 1933-1936 (16mm, B&W, approx 40 mins).

Acknowledgments:
We would like to thank the organizers of the 18th PLC for the opportunity to screen this selection of HBC films during the lively Film Night, and the Colloquy participants for their feedback during and after the evening. Peter Geller would like to acknowledge the support of Inter-Universities North in attending the Colloquy.

Notes:

1. Hudson's Bay Company Archives (hereafter HBCA), Provincial Archives of Manitoba, 1999/1, Ernest Hampton Photograph Collection; E.W. Hampton Biographical Sheet.

2. See Andrew Birrell, "The Early Years, 1839-1885" in Lily Koltun, ed., *Private Realms of Light: Amateur Photography in Canada, 1839-1940* (Markham, Ontario: Fitzhenry and Whiteside, 1984), 2-15 and H.M.S. Cotter, "Chief Factor and Photographer," *The Beaver*, December 1933, 23-26; 66.

3. *The Beaver*, June 1926, 123; see also the advertisements in *The Beaver*, December 1931 and June 1933, reprinted for the 18th Polar Library Colloquy Banquet Menus, 17 June 2000.

4. Richard S Finnie, "To the Northwest Passage: A Summer Tour," *Filmo Topics* 14, No. 3 (Vacation 1938), 6; see also R.S. Finnie, "Trading into the Northwest Passage," *The Beaver* (December 1937),

46-52.

5. See also Peter Geller, "The 'True North' in Pictures? Photographic Representation in The Hudson's Bay Company's *Beaver* Magazine, 1920-1945," *Archivaria*, 36 (Autumn 1993), 166-188 for a discussion of the HBC's use of northern imagery as part of its corporate publicity.

6. HBCA, A.102, file 2589, George Binney to PA Cooper, 10 May 1934.

7. HBCA, A.102, file 2589, General Manager PA Chester to Chief Factor Ralph Parsons and Douglas MacKay, 7 April 1934.

8. Associated Screen News, based out of Montreal and owned by Canadian Pacific Railway, was Canada's foremost private film production company at this time.

9. RHH Macaulay, photographs by Harvey Bassett, *Trading Into Hudson's Bay: A Narrative of the Visit of Patrick Ashley Cooper, Thirtieth Governor of the Hudson's Bay Company, to Labrador, Hudson's Strait and Hudson's Bay, in the year 1934* (Winnipeg: Hudson's Bay Company, 1934); "To the Labrador, Baffin Land and Hudson Bay," *The Beaver*, September 1934, 10-12; and "An Illustrated Record of a Unique Voyage," *The Beaver*, December 1934, 9-12.

10. National Archives of Canada (hereafer NA), Record Group 85, Volume 61, file 160-9 [2], Major DL McKeand to Mr. Hogan, 21 November 1935.

11. The text of the King's message, drafted by the HBC and approved by Buckingham Palace read: "The Queen and I send to our loyal Innuit subjects, who dwell throughout Northern Canada and on the shores of Labrador, a message of Greeting from our home in the great encampment of London. In every part of the British Empire, be it ever so many sleeps from our encampment, the happiness of our subjects deeply affects the personal happiness of the Queen and myself.

You should know that we have often heard tell that no people are merrier, more friendly, or more thoughtful for their families than the Innuit. In the same way that parents are proud of their children so the Queen and I take especial pride in our faithful and hardy Innuit.

May each Innuit family thrive and may your children and grandchildren learn in their turn to do honour alike to their parents and to the British Empire." HBCA, A.102, file 2590, enclosure with P.A. Cooper to Col. Rt. Hon. Sir Clive Wigram, Private Secretary's Office, Buckingham Palace, 4 June 1934.

12. For an analysis of "Tropes of Empire" as a way of "figuring" European superiority, see Ella Shohat and Robert Stam, *Unthinking Eurocentrism: Multiculturalism and the Media* (London and New York: Routledge, 1994), 137-77.

13. Macaulay, *Trading Into Hudson's Bay*, 15, 38; NAC, RG 85, volume 71, file 201-1 [9], DL McKeand (aboard the *Nascopie*) to JL Turner, 3 August 1934; HBCA, A.102, file 2590, To MR Lubbock, 6 June 1934.

14. HBCA, A.102, file 2590, J Chadwick Brooks to Ralph Parsons, 8 June 1934.

15. Governor Cooper's message further highlights this gendered view of the Coopers' visit and the Inuit: "I have journeyed over the great Sea from the island of Britain to meet the Innuit hunters... and I have brought my wife with me on thing [sic] long journey, so that she who is especially fond of children may great [sic] your wives and families.... Take courage, hunters, strive harder so that you may gain greater reward for the good of your wives and children." NA, RG 85, vol. 71, file 201-1[9], copy of "The words of the Governor of the Hudson's Bay Company to the Innuit."

A Search For Value: An Analysis of Popular Interest in Byrd's First Antarctic Expedition, 1928-30

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Abstract

"[What] Value, to the Civilized world, [is] the Byrd Antarctic Expedition?" asked G.P. Putnam's and Sons in 1930. It was more than an academic exercise. Putnam's had published *Little America*, Byrd's account of his first expedition to Antarctica and was trying to sell the volume during the Great Depression. As a ploy to sell Byrd's book, Putnam's invited readers to submit letters on this topic and to compete for prizes, ranging from $250 to an autographed copy of a limited edition of *Little America*. Putnam's also appeared to be asking the public for specific reasons to be interested in the exploration of Antarctica, at a time when economic and social problems at home seemed more immediate, even threatening.

As a result of this contest, the Papers of Admiral Richard E. Byrd contain approximately two thousand essays from the general public about the value of Byrd's expedition and of Antarctic exploration generally. The letters came from all parts of the United States, from all ages, and from many different occupations. The authors examined the letters to catalog those themes that were common to many, and to identify the ones with unusual interpretations of value.

The letters spurred by Putnam's prize contest represent a unique resource for historical and social investigation. They came directly from private individuals. As original and as direct evidence of popular thought, they may be a more accurate indicator of the values and meanings of exploration to the general public than the newspapers, books, and magazine articles, which have been the focus of recent studies. Until now, these letters have never been used by scholars.

Among the more than five hundred boxes containing documentation of the life and career of polar explorer Richard E. Byrd is one particularly extraordinary box. It contains nearly two thousand essays submitted in a contest sponsored by Putnam's Son's, Byrd's publisher, who challenged contestants to write on the theme of "The Value, to the Civilized World, of The Byrd Antarctic Expedition." Until now, this box has never been used by researchers but is a valuable resource for an analysis of popular interest in Byrd and polar exploration.[1]

The Challenge to Scholarship:

Before the modern era of governmentally financed exploration, most polar explorers in the United States depended upon popular interest to support their enterprises. Typically, explorers found wealthy patrons for whom to name geographical features, whether discovered or imagined. Robert Peary, for example, had his Peary Arctic Club of well-heeled enthusiasts.

Lectures at scientific societies, fairs, and clubs both preceded and followed polar exploration, sometimes complete with dogs and furs. All of the explorers expected to write about their adventures and accomplishments and to draw royalties and financial advances from publishers of books and newspapers. Indeed, so important was publication to the financial success of polar exploration that some explorers forbade their colleagues in polar conquest to publish accounts until the leader had a chance to raise money both to pay debts and to seed the next expedition. The greatest controversy in the history of polar exploration--the dispute between Dr. Frederick Cook and Commander Robert Peary about who reached the North Pole first--may have begun when Peary denied Cook

permission to publish an article about the Eskimos whom Cook had studied while a member of Peary's expedition in 1891.

More than any other modern explorer, Byrd drew public attention both to himself and to polar exploration. Like other explorers before him, Byrd began by cultivating the interests of the wealthy. John D. Rockefeller, Edsel Ford, and Vincent Astor --the aristocracy of money in the United States-- donated from $25,000 to $5,000 to enable Byrd to buy an airplane, rent a ship, and outfit an expedition to fly to the North Pole in 1926. At the same time, Byrd also negotiated advances from the *New York Times* for exclusive stories and a publicity contract that guaranteed financial support in exchange for stories to be sold to newspapers, regardless of whether Byrd reached the North Pole or not. Another deal with Pathe Films provided for that company to take newsreel films of the progress of the expedition in exchange for cash and royalties.[2]

Why did people take such an interest in polar exploration as to part with their own money? Recently, scholars of polar exploration have offered several answers. In *The Myth of the Explorer: The Press, Sensationalism, and Geographical Discovery*, Beau Riffenburgh linked the progress of polar exploration with technological advances in printing and changes in journalism. Newspaper owners and explorers developed a symbiotic relationship in which newspapers stoked public interest while explorers provided stories. The advent of machine powered presses and the manufacture of cheap paper from wood pulp made possible the inexpensive and daily newspapers and created a demand among journalists for more stories, especially ones of adventure and sensationalism. These polar explorers were only too happy to provide sensational tales of adventure at a price. By the 1880's, according to Riffenburgh, most polar explorers had established links with major newspapers.[3]

Recently, Francis Spufford took another point of view. In *I May Be some Time: Ice and the English Imagination*, Spufford maintained that popular interest in polar exploration preceded the modernization of journalism. Based principally on literary works, Spufford showed how literary figures such as Charles Dickens, Samuel Coleridge, Herman Melville and Charlotte Bronte adapted accounts of polar expeditions into their novels. The narratives of polar explorers fired literary imaginations and provided dramatic examples of social virtues in cooperation, loyalty, and endurance in the face of suffering that satisfied and fascinated public imagination.[4]

In *Gender on Ice: American Ideology of Polar Exploration*, Lisa Bloom offered a third explanation. According to Bloom, popular interest in polar exploration rested on several cultural themes distinctive to the United States: nationalism or the planting the flag of the United States in distant places; faith in the progress of technology in conquering nature; and a pre-occupation with masculinity. Males in offices, factories, and comfortable parlors eagerly read the accounts of male polar explorers who proved that traditional male virtues, especially perseverance and courage in overcoming the forces of nature, still survived in modern times.[5]

All of these interpretations of popular interest suffer from the same problem: they begin with published sources and infer from the publications what the ordinary people who read the books or newspapers or magazines found important. The readers themselves are silent for the most part because they did not record for posterity and for scholars their personal reactions to the published accounts of polar exploration. Thus, the essays written by readers of Byrd's account of his first expedition to Antarctica are extraordinary, and perhaps unique, documentation of popular interest in polar exploration.

The Contest:

In 1930, G.P. Putnam's Sons published *Little America: Aerial Exploration in the Antarctic and the Flight to the South Pole*.[6] This was the official account of Byrd's expedition to Antarctica from 1928 to 1930. Although Richard Evelyn Byrd was credited as the author, the book was also the work of Byrd's publicist and professional writer Charles Murphy. Murphy was not on the expedition but fashioned Byrd's newspaper accounts into a draft, which Byrd and

Murphy developed into the book. Together with Dr. Larry Gould, who added a chapter about the geological expedition, they created a monograph of 422 pages.

As a commercial press, Putnam's expected to make a profit from the book by an author as well known as Byrd. His flight to the North Pole in 1926 and his Trans-Atlantic flight in 1927, the third after Lindbergh, had resulted in two ticker-tape parades and a successful book, *Skyward*.[7] The publication of *Little America*, however, occurred during the Great Depression. Extra-ordinary efforts seemed both necessary and appropriate to make certain that the public would buy the book despite the financial uncertainty and economic hardship of the time.

Putnam's designed a contest as one of its strategies to sell Byrd's account. It invited readers to submit letters, not to exceed two hundred fifty words, on the subject, "The Value, To the Civilized world, of the Byrd Antarctic Expedition." Contestants did not need to focus on any technical aspects of the expedition. Nor would Putnam's judge the letters in accordance with literary merit, form of expression, or rules of punctuation or spelling. According to the printed rules of the contest, "Judgment will be based only upon the value of the idea expressed."[8]

To stoke interest in both the contest and the book, Putnam's promised four prizes, three of them in cash. First prize was $250, second was $100, and third was $50. Each of the four winners was to receive a special and limited edition of Little America personally autographed by Byrd himself. Considering that the book itself typically sold for $5 in most stores, the initial purchase price could be a very modest investment for any of the winners. Whether motivated by the prizes or inspired by the book, some 1809 writers entered Putnam's contest.

Methodology:

In reviewing the box of letters, the authors of this study engaged in content analysis to answer several questions. Was it possible to identify distinct categories of themes that contestants used in their letters? Typically, the letters contained more than one theme. What themes were cited most frequently? Which were used the least? Did the letters from men differ significantly in thematic content from those written by women? School children also wrote letters. Did these have any distinctive characteristics of themes that differed in frequency from those written by adults?

Reading each of the letters was neither practical nor necessary. From the total volume of letters, the authors developed a random and statistically valid sample. Each of the letters, which had been filed alphabetically by author, received a unique number. A random number generator selected the numbered letters that should be studied. In accordance with guidelines for sampling, the authors read three hundred and twenty of the total number of 1809 in order to draw conclusions from the sample that were statistically valid for the entire box.

As a whole, the sample of letters exhibited significant variations especially in length and style. Some were a single page and hand-written; others were typed and two or three pages in length, apparently stretching the limit of two hundred and fifty words imposed by the contest. In most cases, the contestants provided enough of their names to identify gender and sometimes noted their age if they were minors.

Reading a few of the letters led to the identification of twelve themes and the development of a data base in MicroSoft "Access".[9] One theme was nationalism. Typically, writers who used this theme in their essays pointed to Byrd's expedition as planting the flag of the United States in a remote place. As an example, one writer stated, "You have brought glory to our nation and the heart of every American is filled with praise and admiration at the mention of your name.....there will always be a lingering in your heart that you have performed a service to your nation that never can be forgotten."[10] Another wrote, "He [Byrd] loved his Country (sic) enough to undertake the most dangerous of expeditions, to battle against elements, to plant the flag of the United States some distance further than other pioneers have."[11] At least two contestants concluded their essays in a nationalistic manner. One ended by stating, "It is with the utmost satisfaction that we of America

can point to a citizen of our country and realize that we are doing something that are of world wide importance. Men like Byrd make us proud of our citizenship in a country that produces such great figures in the history of the world."[12] Another simply closed with, "Best of all, I think that Rear Admiral Byrd's explorations have won for the United States a major portion of the Antarctic."[13]

Another theme referred to Byrd's expedition to Antarctica as a triumph of man over the forces of nature. As one contestant put it, "You showed clearly that by preparing intelligently and scientifically, there is no limit to the extent that we may conquer our environment. What a great valuable lesson."[14] Another envisioned both the advancement of technology and progress toward world peace when he wrote, "But the greatest value of all to the civilized world lies in the successful testing of the very civilization which was brought to the hostile wastes at the bottom of the world. The Byrd Antarctic Expedition proved civilization.....Those very tenets to which civilization constantly strives were put to one of history's severest tests, scientifically conducted. Fellowship, social cooperation, loyalty, sacrifice, and the total subjugation of matter to the intelligent mind successfully withstood every bitter, sustained, acid-bathing assault. Those who seek eventual peace on earth and goodwill toward all men see hope in this."[15]

Airplanes were critical to the success of Byrd's expedition. In fact, in his previous book *Skyward*, Byrd argued that flights in dangerous environments served to test and improve the development of the airplane. His flight to the South Pole, as portrayed in his account, served to evidence the usefulness of the airplane in exploration and as a reliable form of transportation in the most hazardous of conditions. Many contestants cited the testing of the airplane as one of the expedition's valuable contributions to the civilized world.

Contestants also cited the value of the expedition in proving the performance of radio in the most hazardous of environments. Byrd used radio extensively, to communicate with parties in the field parties as well as to relay stories to the *New York Times*.

Some of the contestants cited the expedition as valuable to the continued exploration of Antarctica by future explorers. They explained that the information learned in such matters as clothing and diet would be used by polar explorers in the future. On the ice from January of 1929 to February of 1930, the expedition had ample opportunity to develop and test techniques and strategies for exploration.

Historically, the search for precious minerals had been a driving force for exploration. Most contestants who cited economic gains from Antarctica as a valuable contribution to civilization acknowledged that the economic potential of Antarctica would be discovered only in the future. Still one writer noted, "Even people who look only for monetary benefits will find full value in your undertaking. Extensive lands were added to the United States. England's monopoly of .25 a barrel on whale oil was broken, saving our men many thousands of dollars every year." To make this point more emphatically, she also noted erroneously that "Gold and other minerals were found."[16]

Many contestants noted the geographical discoveries by the expedition. They cited the mapping and naming of mountains, coast lines and enhancement of geographical knowledge as a valuable contribution of the expedition.

Byrd himself often claimed that a major purpose of the expedition was to increase scientific knowledge. Many contestants identified scientific accomplishments, including the gathering of meteorological data, geological investigations, and biological undertakings as valuable contributions of the expeditions. One contestant in California wrote, "They brought back data of values as yet barely estimated--values touch daily life most closely in matters of radiology, aeronautics, geography, weather wisdom and ranging wide in remoter fields of science; and they raised questions enough to send a dozen explorers south for lifetimes of investigation."[17] Rather than list each science individually, the authors of this study consolidated all references to scientific knowledge as one theme.

Some contestants, while citing the

gathering of data for individual sciences, also referred to the progress of science through Byrd's expedition as leading to a better understanding of the globe. Although "global ecology" and "global systems" were not terms common to the era, the authors of this study created the category "Global Understanding" as representing this theme. As Marion Macdonald put it, "Many of us cannot appreciate the magnitude of the scientific contributions of the expedition; nor have we the perspective to judge correctly its place in history. For us it is rather the re-interpretation of the world around us that has jolted us from our complacency into a more interesting, less stereotyped existence."[18] Another contestant seemed to prophecy modern thinking about the planet as a global system when she wrote, "This [scientific] information supplementing that concerning the rest of the world will help one to systematize and understand the earth's forces and to predict from such systems the earth's future actions."[19]

Byrd's expedition produced a book, numerous articles in magazines and newspapers, and an award-winning motion picture film, "With Byrd at the South Pole." Two camera men from Paramount accompanied Byrd and recorded the daily life and drama of the expedition. Some of the contestants cited these as valuable contributions of the expedition to civilization. As one writer declared, "The highest achievement of the expedition was the recording made by the cameras. The showing of these pictures at the theaters did more to enlighten the minds of the working people than any number of volumes. No longer would poems be the only place where 'oceans of ice' could be found; nor would a temperature so cold that one could hear one's breath freeze be the invention of a modern Munchausen."[20] Even today, the film, which is now available as a video-tape, still impresses audiences, especially school children.

Many contestants found Byrd's expedition to Antarctica to be inspirational. They were impressed and inspired by Byrd's organizational ability in overcoming the logistical obstacles of assembling the largest party in the history of Antarctic exploration and in directing their work safely in a hostile environment. Again and again, readers cited the importance of Byrd in pulling together his men and in instilling in each a willingness to further the work of the expedition. Many writers pointed to Byrd's leadership and accomplishment as a model for the age. One boy scout, who could not spell "Antarctica" began his essay, "I think the 'Byrd Antartic (sic) Expedition' was of value to the civilized world more as an inspirational medium than by any findings of scientific determinations that might have resulted from their two years in the Antartic."[21] Another observed philosophically, "Every human being longs for the expression not only of his ordinary self but also of his rarer desires and impulses. He longs to escape with the latter from the humdrum daily affairs and the monotony of his usual surroundings....This, then is one of the most valuable features of the Byrd Antarctic Expedition. It has provided through the radio messages printed in *The New York Times*, through the movie "With Byrd at the South Pole", and through *Little America*, a great and thrilling adventure for many."[22]

Frequently, writers who found inspiration in Byrd's expedition referred to an uplifting of the modern era. One noted, "Time and again we hear the cry 'Everything has been invented, the entire world has been explored, what chance is there for doing or finding new things?' The Byrd expedition is the answer to these people. With this attitude that we can always go forward, the world may hope for my physical results in the future."[23] Another observed "When we hear so much of the 'practical' side of life and scorn is heaped upon the idealist and dreamer and only those things which reap a financial return are deemed successful, how thrilling was the flight itself."[24]

Writers who developed the theme of inspiration sometimes went to excess. As an example, a coffee broker in Los Angeles wrote, "The star that led the Magi across their deserts and the star that led Byrd to the nether pole are not so different one from another as one might at first suppose. The submergence of self into an ideal, the immolation of personal interests and the sacrifice of human comforts that formed the spiritual basis of this great adventure are of larger

and more permanent value to our modern civilization than the discoveries of icy lands and their secrets."[25]

One of the members of Byrd's expedition was Paul Siple, a boy scout who was selected in a national competition among scouts. The competition and selection succeeded in drawing much publicity to the expedition. It also persuaded some contestants that the chief value of the expedition was as an inspiration to youth. One boy scout noted "Admiral Byrd, himself an Honorary member of the Boy Scouts of America has done more to fire the enthusiasm of the Boy Scouts, and in fact all boys, than any living man today." [26]

Concerns for the next generation moved one contestant to write, "Youth's hazardous journey on the glamorous sea of adolescence is today, more than ever, fraught with skulking dangers. The Crime Wave rolls highest to engulf buoyant Youth. Communism rears a horned head to roar confusing directions to unwary craft. Prohibition, while attempting nobly to shield, often but incites. Befogged, thus, by the strange elements encountered, Youth easily loses its way and is lost. Never before in the history of the world has Youth more needed a blazing beacon to make clear its course. Never has beacon been brighter. An heroic gesture of undaunted courage, of superb sacrifice, of glorified adventure shines on the World's horizon to beckon and guide to safety the precious craft: Youth."[27]

Occasionally, but not very often, the authors of this study encountered themes that did not fit into the major categories. As an example, one contestant claimed that Byrd's expedition proved the existence of God and the truth of Christianity: "By the Bible we learn that God created the world....How could man not believe in the Christian religion and a supreme being when he has seen these marvelous things that God has created or has read the data furnished by you in *Little America*? Therefore a firmer foundation is laid (upon) which Christian religion may safely rest."[28] This and twelve more letters--only 4.1% of the total sample-- constituted the "other" category.

Results:

Of the total of 320 letters sampled, those written by women (137 or 42.8%) nearly equaled the number by men (145 or 45.3%). If polar exploration appealed distinctly to males more than females, as suggested by Lisa Bloom, it is not proven by this study. However, Byrd as a celebrity and as a handsome and photogenic man had many female admirers. Indeed, Byrd was voted one of the handsomest men of his day.[29] So, the data does not necessarily prove Bloom's hypothesis wrong. The absence of references explicitly to masculinity as a theme in the letters is noteworthy. No one seemed to cite masculine strength or traditional masculine virtues as important in conquering nature. In fact, the emphasis of the expedition, and of many of the contestants, was on technology rather than on physical strength, teamwork rather than individualism. Intelligence, machines, careful planning, attention to details, and teamwork mattered most in this expedition.

By far the most frequent of themes was spiritual uplift and moral example (Appendix 1). Seventy per cent of the sample expressed this idea. If one were to add the closely related theme of inspiration for the next generation, the total would have been 90.6 per cent. Two factors may explain the overwhelming popularity of these themes. First, the writers lived in a time of extra-ordinary social uncertainty and financial despair. Heroic figures such as Byrd inspired confidence that traditional values such as dedication, loyalty to mission and team, faith in technology, and superior organizational skills could overcome great obstacles. Second, previous public image of Byrd as the hero of the North Pole and the third to fly across the Atlantic --an image that Byrd himself recognized and cultivated in what he termed "the hero business" -- served to render the accomplishments in Antarctica even more inspirational because they had been done by a hero.[30]

The second most popular theme was scientific knowledge. This, too, is not surprising. Byrd had maintained that his expedition was to advance scientific knowledge. The fact that he selected Lawrence Gould, a scientist, as his second-in-command of the expedition, the number of scientists among the forty-two who

wintered over, and the detailed discussions of laboratories and equipment in Byrd's book served to tune readers to scientific accomplishments as a major contribution to civilization.

Geographic discovery ranked third, for obvious reasons. The expedition mapped thousands of square miles, named numerous mountain ranges, and significantly increased the knowledge of places in the frozen continent.

At the opposite end of the scale of total frequency, some of the statistics merit comment. At the bottom, was the theme of "Man Over Nature", with only 10% of the sample. However, this may be the result of the design of the categories. If radio and airplanes, both man-made inventions used to extend man's knowledge over nature, were included with "Man Over Nature" the total would rise to 81.2%. That the importance of radio and airplanes should be cited is not surprising, given Byrd's association with previous accomplishments with airplanes, the triumph of the flight over the South Pole, and the prominence of both radio and airplanes in the book *Little America*, as evidenced by its index.[31]

Global understanding also ranked low in the total frequencies. In retrospect, this may have been a theme difficult for the contestants to articulate. Certainly, its expression seemed imprecise to the authors of this study and appeared, at times, to seem close to scientific knowledge. At the same time, however, global understanding seemed to be more than the gathering and interpretation of scientific data and appeared to touch upon religious themes and ones of world peace.

Nationalism and economic value ranked only ninth and tenth respectively in the list of twelve. This is not surprising. Those writers who did mention economic value were either speculative in that more time would be needed to explore the mineral wealth, vague, such as the writer who thought Antarctica was a place to park surplus population, or inaccurate (including the contestant who alleged that Byrd's expedition had found gold). The lack of knowledge of the economic value of Antarctica may have lowered the theme of nationalism. Aside from planting the stars and stripes in uninhabitable areas, contestants did find it difficult to enumerate exactly what advantages and assets the United States as a nation gained from Antarctica.

More surprising was the relatively small number of contestants who referred in their letters to Byrd's impact on continuing exploration. Traditionally, historians have referred to Byrd's expeditions as heralding the end of the heroic age and the advent of the modern and mechanical age of exploration in Antarctica. Yet, only 21.3 per cent of contestants mentioned continuing exploration as a theme. This is surprising when considering the number who cited scientific knowledge as an accomplishment. Did they not realize that the opening of Antarctica by airplane made a continent available as a laboratory for science? The public may not have viewed Antarctica as a continuing project. If Byrd had analyzed the essays, this would have been a troublesome thought, for he planned to undertake another expedition to Antarctica and eventually made exploration in Antarctica his life's work.

Men and women did not differ significantly in the relative frequency of themes cited (Appendix 2). Both sexes were identical in ranking spiritual uplift, scientific knowledge, geographic discovery, air plane, and radio as the five most important contributions to civilization by Byrd's expedition. A greater percentage of females than males (27 % to 15%) valued the expedition as an inspiration to the younger generation, a difference that may be explained by the higher social value traditionally placed upon women in nurturing the young. Otherwise, the results for men and for women were remarkably similar.

Only nineteen of the contestants in the sample (6%), identified themselves as minors (Appendix 3). Like the adults, they cited themes of spiritual uplift, geographic discovery, and scientific knowledge most frequently. Boys and girls picked these themes in approximately the same level of frequency. In other words, they had no differences with adults or with the opposite gender in deciding what value Byrd's expedition was to civilization.

Five of the contestants --three women and

two men-- did win prizes, including a special award for the best letter written by a minor. The criteria for selecting the winners is not documented, and Byrd himself was not involved in the voting. Generally speaking, the winning letters had themes that paralleled in frequency those cited by the sample as a whole. Each of the five referred to spiritual uplift as a theme, the only one to achieve unanimity. Three of the five noted science and airplanes. None of the winners mentioned the impact upon continuing exploration.

Conclusions:

A study of this kind does have distinct limits as an analysis of popular interest in the exploration of Antarctica. It focuses only upon one explorer, Richard Byrd and ignores Lincoln Ellsworth, Sir Hubert Wilkins, and other contemporaries. The analysis is on only the first of Byrd's expeditions, even though Byrd led or was associated with five expeditions to Antarctica. Finally, the study concerns only those people who were interested enough in Byrd or Antarctica to purchase or read Byrd's book. Therefore, any findings must be considered as suggestive, perhaps speculative, but not conclusive.

These limits aside, if Richard Byrd had found time to study these essays (Byrd himself was on a lecture tour to promote his book while these essays were being reviewed by the staff of G.P. Putnam's in New York), the results would have been alarming to him. The frequency with which the contestants cited spiritual uplift as an accomplishment would have been taxing to any explorer. How long can an explorer continually inspire readers and supporters by performing heroic deeds and accomplishing the extra-ordinary without exposing himself to extraordinary risk? In Byrd's second expedition, hero almost died while wintering alone in a hut in the interior of Antarctica.

The low scores for the impact upon continuing exploration must have been worrisome also. Byrd's second expedition, from 1933-35 was the last to depend upon popular support and private donations alone. The U.S. Antarctic Expedition that Byrd led from 1939 to 1940 was financed partly by the United States government and partly from moneys that Byrd himself had raised. Byrd's expeditions heralded not only the era of technological exploration but also of exploration by the tax payer and by governmental bureaucracy.

Although the findings are tentative, this study has given voice to those who were relatively speechless in previous studies by historians. Because of the contest organized by G.P. Putnam's Sons, a body of documentation exists that was created by ordinary people, not by journalists and novelists. Even though these people spoke with many voices, it is possible through statistical sampling and content analysis, to discern meaningful messages.

Notes:

1. Papers of Admiral Richard E. Byrd, The Ohio State University Archives, Box 345, folders 8436-8469. (Hereinafter cited as BP: folder number).

2. Raimund E Goerler, ed. *To the Pole: The Diary and Notebook of Richard E. Byrd, 1925-1927* (Columbus, Ohio: The Ohio State University Press, 1998): 41-46.

3. Beau Riffenburgh, *The Myth of the Explorer: The Press, Sensationalism, and Geographical Discovery* (London: Belhaven Press/Scott Polar Research Institute, 1993).

4. Francis Spufford, *I May Be some Time: Ice and the English Imagination* (New York: St. Martin's Press, 1997).

5. Lisa Bloom, *Gender on Ice: American Ideology of Polar Exploration* (Minneapolis, Minnesota: University of Minnesota Press, 1993).

6. Richard Evelyn Byrd, *Little America: Aerial Exploration in the Antarctic: The Flight to the South Pole* (New York: GP Putnam's Sons, 1930).

7. Richard E Byrd, *Skyward* (New York: GP Putnam's Sons, 1928).

8. "Byrd Prize Letter Contest, 1931-32" BP: 8436.

9. The authors benefitted greatly from the technical expertise and guidance of Dr R Scott Moore, who developed the database in Access.

10. Katherine A Thomas to Admiral Richard Byrd, February 17, 1931, BP: 8462.

11. J L Gaisser to GP Putnam's sons, February 12, 1931, BP: 8445.

12. Jonah Goldberg, "The Value to the Civilized world of the Byrd Antarctic Expedition," undated, BP: 8445.

13. Grant Dibblee to Byrd Contest Letter Editor, February 25, 1931, BP: 8442.

14. Vincent Lindblom to Admiral E Byrd, February 25, 1931, BP: 8451.

15. Allison W Ind to Byrd Prize Letter Contest Editor, undated, BP: 8448.

16. Emily M Dunne to Admiral Byrd, February 29, 1931, BP: 8442.

17. Wilmetta Curtis to GP Putnam's Sons, February 19, 1931, BP: 8441.

18. Marion E Macdonald to GP Putnam's Sons, February 23, 1931, BP: 8452.

19. Dorothy Doane to GP Putnam's Sons, February 25, 1931, BP 8442.

20. Jonah Goldberg, "The Value to the Civilized world of the Byrd Antarctic Expedition," BP: 8445.

21. Harold M Crowther to GP Putnam's Sons, January 30, 1931, BP: 8441.

22. Alice G Fairbanks to GP Putnam's Sons, undated, BP: 8444.

23. Irvin S Dagen, "The Value, to the Civilized World, of the Byrd Antarctic Expedition," February 3, 1931 BP: 8442.

24. Alice G. Fairbanks to GP Putnam's Sons, undated, BP: 8444.

25. James L Duff to GP Putnam's Sons, January 16, 1931, BP: 8442.

26. Harold M Crowther to GP Putnam's Sons, January 30, 1931, BP: 8441.

27. Genevieve A Higgins, "The Value to the Civilized World of the Byrd Antarctic Expedition," BP: 8447.

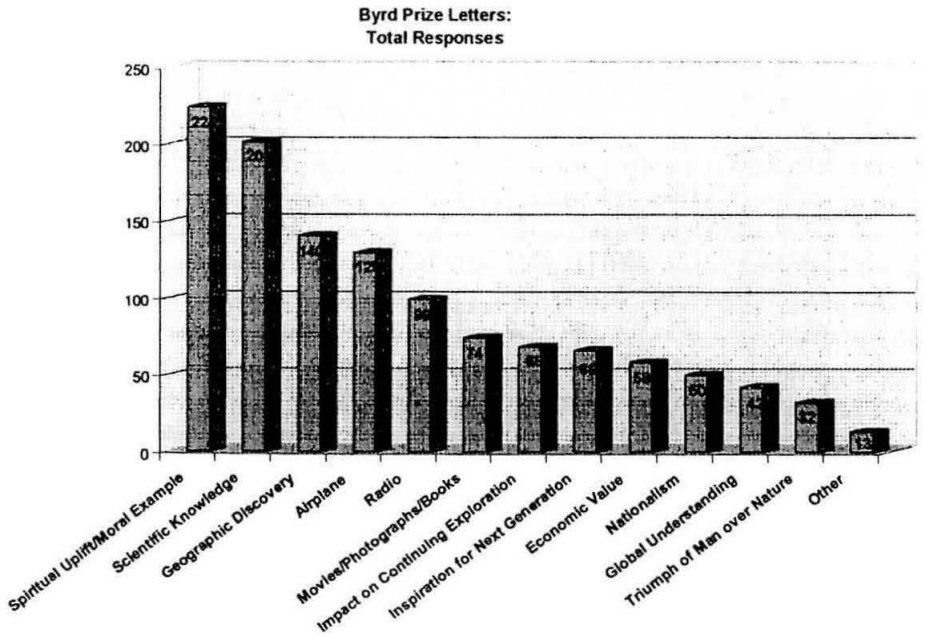
28. William Palmer Long to Rear Admiral Richard E Byrd, February 24, 1931, BP: 8451.

29. Stated in "Richard E Byrd: The Last Explorer," *Biography* (Arts and Entertainment Channel, 1996.)

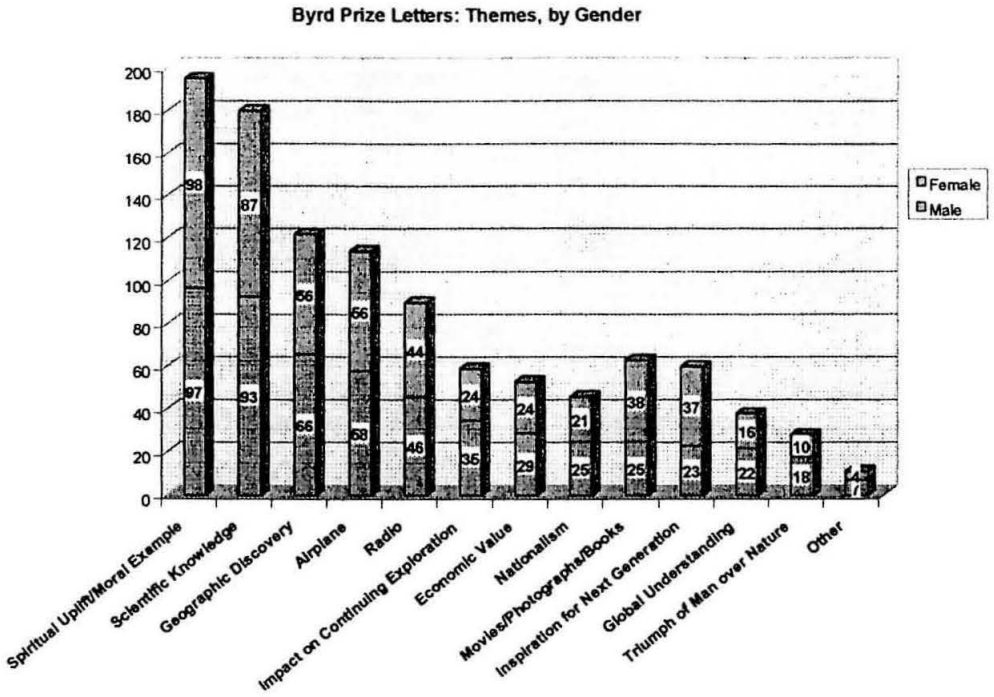
30. Richard E Byrd, Skyward (New York: GP Putnam's Sons, 1928): 207-221.

31. Richard Byrd, *Little America*, pp. 417,421.

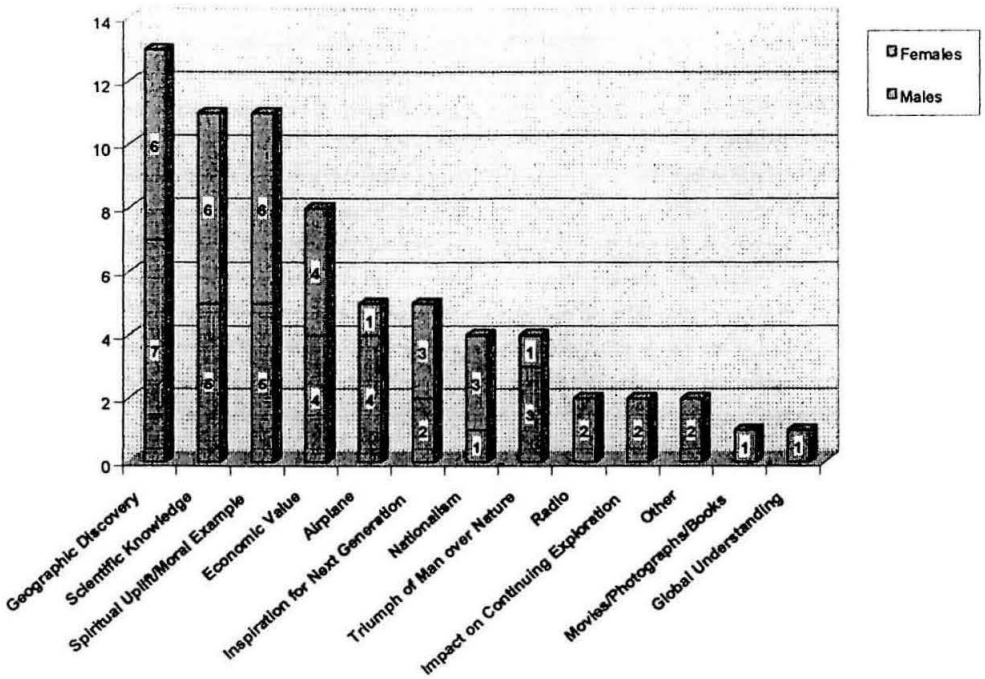
Appendix 1.



Appendix 2.



Appendix 3.



The Arctic Science and Technology Information System: Moving to the Web

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Abstract
The Arctic Science and Technology Information System (ASTIS) is an abstracting and indexing service that describes publications and research projects about northern Canada. During the past two years ASTIS, like many other information services, has moved to the World Wide Web for information distribution. The printed *ASTIS Current Awareness Bulletin* and CD-ROM *ASTIS Bibliography* have been discontinued, and the full ASTIS database is now available on the Web for free. ASTIS Web capabilities are described, including the ability to link from ASTIS records to the full text of publications that are available on the Web, and to make subsets of the ASTIS database available as specialized Web sites. During the next two years ASTIS will complete its coverage of research projects conducted in the three territories since 1984, increase its coverage of northern oil and gas industry reports, improve its coverage of Nunavik through a joint project with the Nunavik Research Centre, and, hopefully, add all *Arctic Bibliography* records about Canada to the database.

Introduction

The Arctic Science and Technology Information System (ASTIS) is an abstracting and indexing service that describes publications and research projects about northern Canada. ASTIS is a project of the Arctic Institute of North America at the University of Calgary, and has been in operation since 1978. The ASTIS database currently contains about 46,700 records

ASTIS has no core budget, and is financed entirely through contract work and small grants. As described elsewhere (Goodwin, 1997), this method of funding has both advantages and disadvantages. It ensures that most of the information entering the database is important enough that someone is willing to pay to have it entered. On the other hand, it means that a great deal of effort must be spent on fund raising, and that a significant amount of time is spent finding publications for specific contract bibliographic projects rather than indexing material of broad general interest.

Subject and Geographic Scope

ASTIS covers all subjects, including the earth sciences, the life sciences, engineering and technology, renewable and non-renewable resources, co-management, politics and government, economic and social conditions, land use, indigenous peoples, archaeology, history, art and literature.

ASTIS covers all of Canada's north of the southern limit of discontinuous permafrost, as well as adjacent marine areas. Our coverage therefore includes the northern parts of most of the provinces, the three territories (Yukon, the Northwest Territories and Nunavut), part of the Arctic Ocean, the Canadian part of the Beaufort Sea, the waters within the arctic archipelago, the Canadian half of Baffin Bay - Davis Strait, Hudson and James Bays, and much of the Labrador Sea. In practice, our coverage of the three territories is more complete than our coverage of the northern parts of the provinces. ASTIS contains only a small amount of information about non-Canadian polar regions.

Coverage of Publications

The coverage of publications in ASTIS emphasizes gray literature, including reports from government agencies, industry, indigenous peoples'

organizations, and universities. ASTIS also includes journal articles, conference papers, theses and books. Most of the citations in the database are to publications produced since 1978, but a small amount of older material is included.

ASTIS obtains publications through work on contract bibliographic projects, and from the Arctic Institute of North America Collection and the rest of the University of Calgary Library. ASTIS does not, therefore, cite only publications held by the University of Calgary Library. When working on contract bibliographies we often cite publications held in other libraries, and occasionally cite publications which are not known to be held in any library. If necessary, ASTIS can also cite publications that it has not actually examined, but always warns users of this fact with a note in the citation.

ASTIS's coverage of publications about northern Canada is far from comprehensive, and users are warned to consult other sources of information if they are doing an exhaustive search. Because ASTIS is funded through contracts to produce bibliographies and bibliographic databases, our database is close to comprehensive in some subjects and geographic areas and very incomplete in others.

The citations in ASTIS contain a complete bibliographic description, an abstract, detailed subject and geographic terms and, in most cases, a library symbol indicating where the document is available on interlibrary loan. Subject and geographic terms are chosen from our own subject and geographic thesauri that are maintained, with cross-references and scope notes, in accordance with international standards for thesaurus construction.

Coverage of Research Projects

The ASTIS database contains about 11,000 records describing research projects conducted in Canada's three northern territories the past 25 years. These records begin with the words "RESEARCH PROJECT" to distinguish them from citations to publications. Research project descriptions are prepared using information collected by the organizations that licence all northern field research. It is the cooperation of these eight organizations that makes our research project coverage possible. ASTIS will soon complete its retrospective coverage of research projects conducted in the three territories since 1984. The Canadian Polar Commission is using research project statistics from ASTIS as one of their indicators of the level and direction of research effort in northern Canada.

The amount of information in a research project record depends on the amount of information collected by the particular licensing organization in the year that the licence was issued. All records contain at least a project title, the name of the principal investigator, the investigator's affiliation, and ASTIS subject and geographic codes and terms. Many records also contain abstracts, the names of additional investigators, the names of organizations that funded the research, and the principal investigator's address, telephone number and e-mail address.

Moving ASTIS to the Web

The decision to move ASTIS to a new database management system that ran on a low-cost server and provided Web access was made in late 1997. The main reasons for that decision were requests for Web access from our contract clients and the knowledge that the IBM mainframe computer that we were then using was reaching the end of its usefulness to the University of Calgary's Division of Information Services.

After a six-month review of the available software we chose the MINISIS system, from the International Development Research Centre, a Canadian crown corporation based in Ottawa. MINISIS was chosen for its reasonable price, excellent programming flexibility, multilingual capabilities and thesaurus support. MINISIS runs under Windows NT (and now Windows 2000) on low-cost Intel-based servers.

We took delivery of MINISIS in July, 1998, were able to make a client's small subset of ASTIS available on the Web using MINISIS by the end of September, and moved the full ASTIS database to MINISIS by the end of the year. During early 1999 several additional ASTIS subsets were made available on the Web, but we hesitated to make the full ASTIS database available

on the Web for free because of the loss of revenue from our other products that would have resulted. ASTIS at that time was receiving about 10% of its gross revenues from sales of our printed *ASTIS Current Awareness Bulletin*, CD-ROM *ASTIS Bibliography* and royalties from National Information Services Corporation (NISC).

The Canadian Polar Commission allowed us to provide free Web access to ASTIS by offering to cover the anticipated loss in net revenue as well as some of the other costs of the ASTIS Web site. With the Commission's generous support the full ASTIS database was made available from a bilingual Web site at www.aina.ucalgary.ca/astis in December, 1999.

ASTIS Web Capabilities

The Web version of ASTIS provides both Simple Search and Advanced Search pages. The Simple Search page allows free-text searching of words in titles and abstracts, author searching using truncation, and drop-down lists for searching record-type (publications or research projects), subject and geographic codes, and year. The Advanced Search page allows full Boolean searching of a much larger number of fields. Although not all of its capabilities are described on the Web site, you can do anything on the Advanced Search page that you can do in the native MINISIS query language, except for the automatic storing and numbering of search sets.

The searching and documentation pages of the ASTIS Web site are available in both English and French. MINISIS's excellent language capabilities allow the French side of the site to use French field names, French logical operators and French error messages. When displaying records, field tags and the contents of some fields are displayed in the language that the user has chosen to search in. When searching in French, for example, French abstracts are displayed if available.

While viewing an ASTIS record you can click on personal and corporate author names, subject codes, subject terms, geographic codes and geographic terms to search for other records that have the same name, code or term. MINISIS has the capability to make the ASTIS subject and geographic thesauri available for browsing on the Web, although we have not yet had the time to implement this feature.

If a publication is available on the Web, the ASTIS record for that publication allows you to hyperlink directly to the full text of the publication. Currently only a small number of publications about northern Canada are available on the Web, but this number will grow rapidly with time. ASTIS could also use this capability to index Web sites, but we are not doing so at present.

ASTIS records could also link directly to records in other databases. We are currently exploring ways to link to specific records in the University of Calgary Library catalogue. This would allow the library symbol "ACU" in an ASTIS record to be a hyperlink to the corresponding catalogue record, allowing users to get the call number of a publication and to see whether it is on loan. The problem is trivial for publications with ISBNs and ISSNs. Unfortunately, the gray literature in ASTIS, which is most likely to be available only in the U of C Library, is least likely to have ISBNs and ISSNs.

Hyperlinks in other organizations' Web sites can contain predefined ASTIS searches. This Profile Search capability would allow, for example, a link on a research licensing agency's Web page to automatically do an ASTIS search for the last two years of research licences from that agency. The capability can also be used to obtain an individual ASTIS record based on its record number, which would allow links to ASTIS records from records in other databases.

The MINISIS software has several additional Web capabilities that we have not yet had reason to use, including the ability to let Web users input records directly into a database and the ability to restrict access to an ASTIS Web site with user names and passwords.

Some Subsets of ASTIS On the Web

The MINISIS software makes it very easy to make a subset of the ASTIS database available from its own Web site as if it were a separate database. These sites are "views" of the ASTIS database, not copies, so records changed or added in the main database are accessible automatically and

immediately in subset Web sites if they meet the criteria that have been specified for those sites. The subset sites can be uni-lingual or bilingual, can have simple or complex search capabilities and can be designed to stand alone or to look like part of another Web site. When creating a bibliographic Web site for a client we provide existing ASTIS records for free, and charge for the creation of new records and for the design and construction of the site. One of the major benefits to ASTIS of working on such bibliographic contracts is the opportunity to work with clients to identify and index publications that we would otherwise be unaware of.

The Mining and the Aquatic Environment site at www.aina.ucalgary.ca/mae is a stand-alone unilingual site that allows users to search a small ASTIS subset of about 430 records. This site, prepared for the Water Resources Division of Indian and Northern Affairs Canada, lists publications about the effect of hard rock mining on the fresh-water and marine environments of Canada's three northern territories.

The Northern Granular Resources Bibliographic Database at *www.aina.ucalgary.ca/ngr* is a stand-alone bilingual site prepared for the Land and Water Management Division of Indian and Northern Affairs Canada. It contains more than 1060 records describing publications about granular resources (gravel, sand and crushed rock for use in construction) in the three territories and adjacent waters.

The Nunavut Environmental Database, available from the Nunavut Planning Commission's Web site at www.npc.nunavut.ca, describes about 15,000 publications and recent research projects about Nunavut. The pages of the Nunavut Environmental Database site are designed to look like part of the Nunavut Planning Commission's site, although they are being served from the ASTIS server. One interesting feature of this site is that the library symbols in ASTIS records are translated into library names which are then presented as hyperlinks to library Web sites. MINISIS made it easy to provide this capability, using a small database of names and URLs for the 70 library symbols used in ASTIS.

Other ASTIS Services

ASTIS continues to be available as part of National Information Services Corporation's *Arctic & Antarctic Regions* database, which is available on CD-ROM and through NISC's web-based BiblioLine retrieval service. *Arctic & Antarctic Regions* is well worth the cost if you do a significant amount of polar regions bibliographic searching.

Because of the large amount of information in ASTIS about northern legal and regulatory issues, ASTIS is one of over 1450 databases available from QUICKLAW, Canada's largest online legal publisher. Most QUICKLAW searches are performed across large predefined groups of databases, so that legal researchers working on northern issues automatically retrieve relevant ASTIS records without even knowing that ASTIS exists.

Customers who have searches that can't easily be done using the ASTIS Web site, or who want the resulting records in a format other than HTML pages, can have the ASTIS staff do a Custom Search of the database. Results can be provided in a variety of formats.

For more information about these and other ASTIS services, please see the "Other Services" page of the ASTIS Web site.

Some Current ASTIS Projects

One of the areas in which ASTIS has specialized has been the research and engineering literature of the northern Canadian oil and gas industry. During the past five years this interest has become more formal with the creation of ASTIS's Arctic Technology Preservation Project (ATPP). The purpose of ATPP is to preserve and make accessible the tens of millions of dollars of northern Canadian petroleum and pipeline industry research and development that has been conducted since the 1970s. ATPP has received funding from industry, the National Energy Board and the National Research Council, and its activities are guided by an advisory committee of former industry employees. ATPP solicits the donation of industry reports to the Arctic Institute of North America's library collection, which is part of the

University of Calgary Library. Reports are then indexed and abstracted by ASTIS. The Institute library includes such collections as the Canadian Arctic Gas Study Limited library, the Canadian Marine Drilling library, all Arctic Petroleum Operators' Association reports, and major report collections from Polar Gas, Foothills Pipe Lines, Panarctic Oils, etc. Over 5000 of these reports have so far been added to the ASTIS database, but approximately 2000 reports await indexing and abstracting. With the recent surge in interest in northern gas pipelines we hope to be able to raise enough money to complete this work over the next two years.

Makivik Corporation's Nunavik Research Centre (NRC) and ASTIS have recently begun work on a project to improve the coverage of publications about Nunavik in the NRC Library and the ASTIS database. The NRC Library in Kuujjuaq contains a good collection of recent publications about Nunavik (all of Québec north of 55°), but wants to compare its coverage with that of other sources to identify and fill gaps. ASTIS cites more publications about northern Québec than about the northern part of any other province, but its coverage of northern Québec is far from comprehensive. By combining the coverage of the NRC Library with that of ASTIS, and then searching for publications that are not in either collection, both can be improved. ASTIS users will notice an increased number of publications about Nunavik entering the database over the months ahead.

Approximately 18,000 records from the *Arctic Bibliography*, covering all aspects of northern Canada from the beginning of European exploration until the early 1970s, will be added to ASTIS starting in late 2000. As part of the agreement under which the American Geological Institute digitized the Arctic Institute of North America's 16-volume *Arctic Bibliography* (Andrews and Tahirkheli, 1999), AINA has the right to add all *Arctic Bibliography* records about Canada and adjacent waters to the ASTIS database. Many months will be required to convert these records to use the ASTIS record format and ASTIS subject and geographic terms, but we expect to complete that work and begin adding the records to ASTIS late this year.

These projects, and others yet to be envisaged, should make the coming years as interesting for ASTIS as the past few years have been.

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Acknowledgments

I would like to thank the many organizations that have supported ASTIS financially over the years, especially the Canadian Polar Commission for making it possible for us to make ASTIS available on the Web free of charge. I would also like to thank the ASTIS staff, Lynne Howard and Lynda Howard, for their dedication and support.

The Northern Store Community Wall Project: A Return To The Source

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Ten years ago I was invited to collaborate on a project. The North West Company was opening a new Northern Store in Inuvik, Northwest Territories, and was looking for a means of personalizing the retail area in a way which would be culturally significant to the people of that community. My partner and I proposed a photographic exhibit that would depict both the history of the community and its current existence. Residents would be asked to submit photos and slides from their own family albums and journals. Photographs would be reproduced and originals would be returned to their owners. Additional photographs would be researched through archival collections such as the Hudson's Bay Company Archives.

The exhibit was a success. The community submitted literally hundreds of photographs and slides. Images were reproduced and enlarged as colour prints, black and white photographs and back lit duratrans. Oak columns were stained bright colours and the letters I N U V I K were affixed to them. Most importantly, the exhibit was enjoyed by local residents. The community had placed their personal stamp on the new Northern Store.

...And so began my journey into unchartered territory!

My background is in interior and graphic design. I embarked on this project from a visual and aesthetic foundation, rather than from that of a historian. Over the past few years working on these projects has provided me with a rich appreciation for northern and remote communities, and the geography, life style and culture which have played a pivotal role in shaping both their histories and their present identities.

The original North West Company was formed in 1779 by a partnership of Montreal - based entrepreneurial traders. In 1821 the North West Company and Hudson's Bay Company amalgamated under the Hudson's Bay Company name, creating a fur trading monopoly that covered 1/4 of North America. Throughout the 1800's and into this century, the enterprise continued as the Fur Trade Department, and then the Northern Stores Division, of the Hudson's Bay Company. In 1990,three years after restructuring as an independent entity, the company renewed its link to the past by changing its name to The North West Company, and the trading name of its retail operations to Northern.

Today The North West Company encompasses more than 150 retail outlets across the country and an additional 28 stores in Alaska. Operations also include an extensive Inuit Art Marketing Service. Carvings are purchased from local artists, and distributed to galleries and retail outlets around the world. Northern stores operate in markets with populations ranging from 500 to 5,000 offering everything from fresh produce to furniture, appliances, housewares and toys. To date over 35 northern and remote communities house Community Walls, where they have been received with enthusiasm by community members.

The North West Company's mandate for the Community Walls is to create an exhibit which will introduce to the Northern Store an element which is both unique and specific to its location. The concept of "source" is key to the Community Wall.

The idea of "a return to the source" is significant on several levels.

Source as history

Many of the photographs incorporated into these exhibits chronologically stem back to the roots of the community, whether early settlers, explorers or fur traders. It is through a return to the community's past that the researching of subject matter is initiated.

Source as process

The act of sourcing or researching of images is central to the Community Wall. The exhibits revolve around the revisiting of archival institutions and the collections housed within them

Source as origin.

Ultimately, the images are returned to the community to which they belong, in the form of a photographic exhibition. Whether it is Rankin Inlet's mine, Baker Lake's Sea Lift, Attawapiskat's flood of 1939, Inuvik's Northern Games, or Pangnirtung's whale hunting industry, each community has a unique history, in which geography, people and events have all played a central role. Community members, particularly the elders, are an invaluable resource in this respect. They are able to advise of people and happenings important in the history of the community, and of cultural events significant in its life cycle.

The exhibits are pictorial in nature. Titles may be included in the credits or in an accompanying booklet, but because the exhibit is primarily for the people of that community, images tend to be recognizable.

Typically, each exhibit follows a similar framework in terms of process:

Design

The area designated for the community wall is divided into modules which are in turn subdivided into a preliminary grid, in which each square represents a single photograph. Once it has been determined as to approximately how many photographs will be required, sourcing of images can begin. A logo incorporating the name of the community in Inuktitut, Ojibway, Cree or Dene, and English is designed.

Sourcing:

While researching images for these exhibits, the challenges I set for myself are to access the most diverse and significant collection possible and to bring photographs to the community previously unseen. My primary contact in the community is generally either the store manager or a long time resident whom he appoints. This person acts as a liaison, posting the request for submissions of photographs, and then collecting and mailing the collection to me.

While waiting for community albums I attempt to locate archival photographs. Generally, between the Hudson's Bay Company Archives, the various provincial archives and the National Archives, a number of images will be available. Occasionally, few or no photographs can be located. The challenge then becomes accessing some of the private collections.

Often it is a matter of determining which groups of people would historically have had reason to document life in these communities. Explorers and early settlers, store managers and clerks, and religious institutions and their missionaries are among these categories. One source leads to another until the photographs are located, either through word of mouth from one institution to the next or through directories published by the various archives associations.

Production

Selections of photographs are then made, based on subject matter, clarity, composition and diversity. In larger exhibits each panel or section might display a different subject. Examples include TOWN DEVELOPMENT, LAND & RESOURCES, PEOPLE & CULTURE, TRANSPORTATION and WILDLIFE. Instructions for cropping or scanning, digital touch ups and minor adjustments are sent with each photograph to the lab. Millwork is constructed and logos are typeset and silk screened onto pillars. Finally, photographs and credits are dry mounted and installed into panels. The exhibit is crated, shipped to its final destination, and installed on time for the grand opening. The final exhibit takes different forms depending on the designated location within the store: As a single continuous

installation, individual frames, or black and white historic photo panels around the store perimeter.

Occasionally the exhibit takes on a unique form to conform to specific on site requirements. In Barrow, Alaska, the panels were to be located under a vaulted ceiling directly across from a huge arched window. Photographs were scanned and overlaid with a template on screen to ensure that they would successfully crop to a slight arch. A series of panels was installed to fit the radius of the vaulted ceiling. Ultimately, the aim from a design stand point is to create a simple rather than elaborate end product, where the photos, history and character of the community becomes the focus, rather than the flashiness of the exhibit system itself. An exhibit is successful if the people of the community are drawn to it, and if they find within it some meaning on both a personal and a communal level.

On a personal scale, one of the most rewarding things is the occasional phone call made on behalf of a community resident who has recognized a family member and would like a copy of a print for themselves. Many times it is either a photo of one of the elders as a child, or of a deceased person of whom few or no photos exist in the family.

Several weeks ago I approached The North West Company, requesting access to their photo files for images of community wall installations for this presentation. When I arrived I was assigned a computer by which I could access files of digital images in order to download those that would be most relevant. I suppose this should not have surprised me. Over the past ten years I have been struck by the huge advances in technology. When I began working on the community walls, the most technical question I was asked was whether I would like a black and white photograph hand developed on fibre-based paper or machine printed on resin-coated paper. More recent questions have included ones such as "should weFedEx the disk of scanned images or e-mail the Zip file directly to you?" It is my conclusion that both ends of the technological spectrum have their place in the archiving and exhibiting of historic and contemporary photographs.

So far, I have not seen computer technology perfectly duplicate the quality of black and white prints hand developed on fibre-based paper. Yet when it comes to altering critical dimensions or proportions, adding a little more sky or extending the horizon by just enough to allow the rest of the composition to be used in its entirety, digital imaging is invaluable.

As a user of archival resources, I have found several factors to be key in facilitating access to collections. The first, which I have already touched upon, is the knowledge of the existence of a particular collection or institution. Subsequent factors include policies on retrieval and transmission of images for preliminary consideration. Accessing local collections is relatively straight forward. For example, when I visit the Hudson's Bay Company Archives, I search through a file of images available by location or subject matter, fill out a retrieval request form, and in a matter of minutes I am able to search through files of photographs to select images appropriate to the exhibit on which I am working. The only hurdle I have encountered is in the case of "first rights only" photographs where the photographer, or an immediate family member if the photographer is deceased, must be contacted for permission to duplicate an image. Often the person has moved since the last point of contact, and a search not unlike that of sourcing images across the country must be initiated. When the archival collection is out of town the retrieval process becomes more complicated.

Some institutions offer immediate retrieval of images, and can fax or courier photocopies within the span of a couple of days. Others may require a two week period simply to provide a list of descriptions of photographs.

Some offer scanning services so that the images can be viewed on the computer screen or down loaded to hard copy. Still others have strict policies barring the use of any photocopying of prints, in an attempt to preserve the condition of the originals. The speed at which duplicate prints can be generated also varies considerably between institutions, depending primarily on whether reproductions are done in-house or contracted out. Each of these factors plays an important part in facilitating access to collections, and in determining

feasibility in meeting critical time frames for the exhibit designer.

The most complicated long distance retrieval process I have coordinated is one where photocopying of prints was not permitted and, as is usually the case, originals could not leave the premises. I asked a colleague in Ottawa to visit Les Archives Dechatelets for the Community Wall in Attawapiskat, sift through boxes of photographs, phone me with detailed descriptions from which I made decisions as to which ones to order based on subject matter, clarity and composition. Until the reproductions arrived I had not seen any of the actual images to be used in the exhibit. Although there is always a way to meet the challenges presented by along distance situation, it would seem that a centralized system between locations, at least on a provincial level, would be a huge advantage to both administration and user.

Access to scanned images over the internet would be a tremendous resource and convenience. Although this could pose problems from a copyright perspective, perhaps if there were a way to access data bases on various archival collections from within local archival institutions, or by membership to an umbrella organization, the potential for violations in this regard could be reduced.

Record keeping is something intrinsic to our nature as human beings. The ancient Egyptians told the stories of their people through paintings and carvings on the walls of their temples. The Inuit and First Nations People have traditionally perfected the art of narrative as they pass stories from one generation to the next. In Western society, diary keeping and photo albums have become the norm. We preserve our past not only for the sake of our own memories, but also for the memories of future generations. Our record keeping maintains a continuum from one generation to the next, acting as a form of dialogue between elders and youth. Through the archiving and exhibiting of images we are able to contribute towards the preservation of the critical links that connect past to present.

Acknowledgments

I would like to acknowledge the many residents of northern and remote communities who have submitted photographs from their family albums over the years. A number of these have been selected for this presentation. As well, I would like to credit the Hudson's Bay Company Archives, Provincial Archives of Manitoba and photographer Paul Martens for many of the images viewed today. Finally, a special thank you is extended to Phil Marriott, Deborah Knispel and Rhonda Laxdal of The North West Company for facilitating access to the company's photo files.

Co-operation Is Imperative For Small Libraries

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Abstract
The Danish Polar Centre's library is a comparatively small research library, and as such one of the obstacles today is keeping up with the latest information technology. Advanced library systems which are able to handle all the necessary routines such as accession, cataloguing, searching, exporting and importing titles and periodical administration are expensive and far beyond the limited budget of a smaller institution. Other tasks such as keeping up with the latest developments in electronic publishing, handling on-line journal licenses are also time-consuming and difficult in a one-manned library

Library users in the next millennium will expect to be able to have access to the library's database regardless of their location or the time of day, and we will not survive if we are not visible in cyberspace.

The Danish Polar Library is a comparatively small research library, with approximately 30,000 titles. Actually, it is not one library but three smaller collections, which were united when the Danish Polar Centre, the Department of Eskimology of the University of Copenhagen and the Arctic Institute decided to share premises in 1993. Combining these collections created an all-round polar library covering all subjects within the social sciences, the humanities and the natural sciences. So co-operation started at that time with the quite big task of physically uniting three collections each with their own local classification system. This meant reclassification, adding subject headings and registering thousands of titles into the database. This proved to be a major job, and we still have a backlog of titles (about 1000), which are not yet recorded in our database. We hope to accomplish this within the next one or two years, but this still leaves us with the major part of the Arctic Institute's collection without new classification and without subject headings, although the titles are searchable in the database by author name and title which is our main concern.

We do not have room for the whole collection on site, so we have to keep the major part of the Arctic Institute's collection in a nearby storehouse, and we can therefore live with the somewhat simple registration of those books. However, we are now entering a phase of co-operation on a larger scale.

The Danish Polar Centre and the Department of Eskimology are both government funded, whereas the Arctic Institute is a non-governmental institution. Neither of these departments have big budgets for purchasing computer hardware and software. One of the big obstacles for us is to keep up with the latest developments in information technology. The task of keeping up-to-date on the latest interesting sites on the Internet, the latest news in electronic publishing and on-line journals, and sorting the interesting news from the unimportant takes a considerable part of our time. Taking part in the various developments within our own institution is important, and can be quite time-consuming. And then there are of course, all the daily library routines. All in all it does not leave a lot of excess time to spend on negotiating contracts or implementing a new computerized library system, especially when staff consists of one full-time librarian and one part-time (15 hours a week).

We are all facing the demands from library users who expect to be able to have access to the library database regardless of their location and the time of day. To be visible in cyberspace is imperative if we are to survive as a modern

library, and not end up as an outmoded museum. Furthermore users will soon expect only to have to search in a few databases to find the information they are looking for. It therefore became more and more evident that it would be an advantage for us if we could co-operate with one or more Danish research libraries on some of these matters. One of the more urgent needs was to upgrade the library's computer system in order to enable access to our library database from the Internet.

An advanced library system, which is able to handle all the necessary routines such as accession, cataloguing, searching, and periodical administration, is expensive and far beyond the limited budgets of institutions of our size. So it was imperative for us to find partners to share expenses and workloads. After investigating the possibilities it turned out that there were really only two realistic options. Either we could join MiniBib – which is a group of ministerial libraries, who share the expenses of a highly professional library system, or we could co-operate with the Royal Danish Library (Danish national library). The last option came up after we had had serious negotiations with the MiniBib organization for a while. In early 1999 the Royal Library had invested in a new library system (the same one as the MiniBib group and several other big research libraries are using), and had implemented the system in the spring of 1999. As the Royal Library also serves as library for the University of Copenhagen they decided to offer the university departmental libraries to serve as a database host as soon as they had got the project off the ground. And as one of our mother institutions happens to be a university department we qualified as "partner".

The price of joining the MiniBib system was relatively high because these libraries are more or less of a similar size and share the expenses on an even basis. The Royal Library is by far the largest library in the country and had purchased a large number of licenses for their new system. They also have a big information technology department to start with and they were therefore able to offer the much smaller university department libraries a very favourable deal. As an external library we get the benefit of allocating the administration of the database, the upgrading of new versions, and the negotiation of license contracts, for example, to a larger organization

So economy became the decisive factor, and in February 2000 we joined as an external library in the Royal Libraries database REX. We became a satellite database in the way that our data is not part of the REX database, but a separate unit. Before we got that far we had to convert the whole database from the old system to the new, and that was not an easy task; you must pay for any irregularities made in the past. Having overcome those obstacles we were finally out on the Internet.

There are initially three ways to access the Polar database. One is through the Danish Polar Centre's home page, the others are through the Department of Eskimology's home page and the Royal Libraries web site. The Arctic Institute does not at present have a home page of its own. This is the first step into the new millennium, and the next step will be for our library to become part of Denmark's Electronic Research Library. In order to join this new project it was necessary to have made the change to a new upgraded system.

The vision of Denmark's Electronic Research Library is to establish a virtual library for researchers, students, lecturers and other users at smaller Danish research institutions. The end user should be able to gain access from a single point. There should be a common user interface and a uniform and user friendly retrieval system.

The plan is to develop all Danish research libraries to function as one integrated library during a 5 year period (1998-2002). In co-operation with the Ministry of Research and the Ministry of Education, the Ministry of Culture has decided to invest 200 MDKK (25 M$) in the project. The project is part of the government's current initiative for research and information technology, and will make the libraries' collective information resources of digital and traditional materials available to users all over the country.

There are three types of materials in Denmark's Electronic Research Library to which a high priority is given in the project phase. They include full-text databases, mainly journals, made accessible through licenses with the large vendors, reference databases, and

National bibliographies, primarily the Danish Union Catalogue DanBib

The vision of Denmark's Electronic Research Library includes a platform where not only the users of the twelve largest research libraries will get access to an extended mass of electronic journals, but maximum benefit from national licenses will be offered to research libraries and libraries at smaller research and educational institutions. In the future, county libraries should have access via a 'pay per view' model - and in due course any library in Denmark should be connected to what will then be Denmark's Electronic Library.

To enable the individual library to become a component in this virtual library, it must be modernised with up-to-date information technology systems and organisational procedures. And this is exactly what the Danish Polar Center has now accomplished.

So far, all major research libraries are connected to the Danish research net, all the major and many of the smaller research libraries are upgrading their systems in order to enable them to participate, and subject gateways are under construction in six subject areas

As Denmark is a small nation, international co-operation has high priority. The relation to the other Nordic countries is important, and there is negotiation underway for Nordic licences and the development of the user interface and system architecture, for example. In the future international co-operation in a broader sense will become more and more important. The goal is to create libraries without walls, which includes libraries without national walls. Maybe we could imagine a Polar Library without walls in the future.

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Andrew Taylor's Index to the Arctic Blue Books: British Parliamentary Papers Relating to Exploration in the Canadian North 1818-1878.

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I would like to thank my colleagues on the Arctic Blue Books Project of Arctic/Subarctic Research who were instrumental in producing both annotated print and website copies of Andrew Taylor's Index to the Arctic Blue Books: Ruth May, MLS; Deborah Woodman, MA, Harpa Isfeld, MA, William O. Pruitt, Jr. PhD.; and Michael Angel, PhD. And I must include Andrew here, as he advised us on his unique method of indexing during the period 1990-1993.

The circumpolar north, while huge in area, is really a small community in numbers of people, and even smaller in numbers of researchers. It is also a community of scholarly relationships crossing disciplinary boundaries.

Dr Phillip Cronenwett has written about Vilhjalmur Stefansson and his Encyclopedia Arctica. Andrew Taylor and Stef were friends and colleagues in northern research and scholarship. Both were virtually unknown in the Province of Manitoba and Canada in general. I met Stef in1961 when he was the "eminence grise" of arctic studies at Dartmouth College. In the 30 years I have taught here, I have asked some 6000 students if they knew who Vilhjalmur Stefansson was. I have had three who figured that he was an Icelander, none that knew he was born here or what he had done. Andrew Taylor (1907-1993) was also virtually unknown here except to a handful of northern scholars such as Dr. William O Pruitt Jr.

I first met Andrew in 1990 when Bill Pruitt invited Dr Mike Angel (UofM Libraries) and me to visit with him. Little did we know at that time that we were to embark on the last, yet prolonged, effort to publish his Index to the Arctic Blue Books. (As a field anthropologist, I had never heard of the blue books and, at first mention, I conjured up "pornography in a cold climate"?)

The Arctic Blue Books are the British parliamentary papers on the exploration of the Canadian Arctic between 1818 and 1878. These were the "official" records of the British search for the northwest passage and the search for Franklin's lost expedition. Scattered through the 50,000 reports in parliamentary proceedings, these 47 papers (from 2-956 pages each) have never been fully utilized by students and scholars even though these papers are available in microprint and microfiche in university and public libraries throughout Canada and in world centres. Lacking tables of contents in most cases, and unindexed, the wealth of information they contain is extremely difficult to search with thoroughness. They remained in the same hopelessly disarranged condition in which they were bequeathed to us a century ago. Based on the scientific reports of explorations during the "Age of Darwin", The Arctic Blue Books are of great importance to our baseline knowledge of the Canadian North. The Blue Books cover subjects from anthropology to zoology - the social, natural, and medical sciences of the nineteenth century - which are still very important to us today as baseline data in everything from Canadian Arctic/Subarctic Ecology, Geography, History, Native Peoples, etc. Dr Andrew Taylor (OC, CD, Bsc, MA, PhD, DSc (hon).) has provided us with the key to this valuable resource. He produced a very comprehensive and the only index to the Blue Books. While Taylor's Index of these explorations

is the scholars' handbook, Pierre Berton's *The Arctic Grail* is a popular description of the British/Canadian exploration of the Canadian North. Scholarly literature, such as Dr Patricia Sutherland's edited volume on *The Franklin Era in Canadian Arctic History 1845-1859* re-iterates in numerous articles Andrew Taylor's contributions to northern Canadian research, especially his Index to the Arctic Blue Books. As the world's authority on the Blue Books, Taylor's expertise has been widely acknowledged and his publications, *Geographical Discovery and Exploration in the Queen Elizabeth Islands* (Ottawa: Department of Mines and Technical Surveys, Geographical Branch, Memoir 3, 1955) and *Physiography of the Queen Elizabeth Islands* (New York: American Geographical Society, 12 Vols. 1955) remain classics in northern research. The Index is unique and is contained on approximately 44,000 hand-written file cards (3x5) with 250,000 references. It is organized by subject, name, and geographical location, etc. Andrew Taylor completed this Index in 1959 under small grants from the Department of Northern Affairs and National Resources (Canada) and the American Geographical Society while preparing abstracts of the papers for the prestigious *Arctic Bibliography* (16 Vols.) edited by Dr.Marie Tremaine of the Toronto Public Library.

In the intervening 30 years, the Index had been housed in the Department of Indian Affairs, the Toronto Public Library, Scott Polar Research Institute, the Hochelaga Institute, and finally coming to rest in Andrew's garage before being shipped to my office in late 1990.

In 1991 I began preparing a number of "research" proposals to prepare the Index for publication. With a successful proposal to the University of Manitoba's Research Development Fund, we began by buying a small Mac Classic computer, levering a half a basement storage area for office space, and obtaining the assistance of Deborah Woodman, then an MA student in anthropology, to help enter the file card data into computer files. Dr. Penny Gilbert arranged the complex data entry and output programs of that era for us. In March 1991, I made the first of our applications to Social Sciences and Humanities Research Council of Canada (SSHRC). The application had been rushed and was not as tight as it could have been. Two reviewers viewed it favourably from its scientific merit. Two reviewers panned the proposal, saying that we should "scan the blue books" and create our own Index.(The Optical Character Recognition (OCR) of that era wouldn't even get us25% correct text.)

So, we continued while I went back to the drawing boards for another SSHRC proposal and began searching funding databases and soliciting"reactions" to a short three page prospectus on the project from foundations which might be interested. Deborah continued data input and Penny worked her magic to get the output. (Programs were evolving and we were learning.) Helen Osman, a University College secretary, had typed and entered Andrew's "Blue Books and Rat-Tails", "Preliminary Guide to the Blue Books", and the (Abstracts) from the Arctic Bibliography into MS Word files for us. We also learned from the University of Manitoba Press in early 1992 that the Social Science Federation of Canada would not be giving publication subventions to indexes and concordances.

In February 1992, we received good news from Audrey Kerr of the Neil John Maclean Health Sciences Library that Dr. Robert Ross had donated$2000. towards the project. This was to be most important, if not crucial, in later obtaining copies of the Blue Books through the good graces of Donald Curtin, a librarian in the National Capital Area, who liberated the Blue Books for us by photocopying two complete sets from the Library of Parliament. Through this period, Bill Pruitt was annotating and editing he scientific nomenclature and I was engaged in negotiations with Readex Microprint which had put the Blue Books on microprint many years before.

In June of 1992 I was in Ottawa following meetings in Montreal and spent several days searching for the Blue Books. On the last day I met Donald Curtain in the Library of Parliament and we set in motion a process for obtaining the photocopies so badly needed for editing and checking the Index and data entries. The Ross funds were to defray the expenses of photocopying and shipping. By mid October 92, I had completed

a local SSHRC grant proposal for $5000.and a federal SSHRC proposal for $69.000 for the production and printing of the Index.

Over the next several months, I received a number of rejection notices from private foundations and scientific organization. But one paid off and we received a substantial grant to allow us to carry on and pay Deborah and later Harpa Isfeld to complete the project. In the Spring of1993 we were informed that we had received a grant of $49,000 from SSHRC (there was to be no publication subvention). The local SSHRC, while approved, had to be returned in light of the federal one.

The addition of Ruth May, a retired archivist from the University of Manitoba and a friend of Andrew Taylor's, was of crucial importance to the production of a well annotated, checked and edited Index. By April, Deborah had entered all the file cards in the computer and we had begun the checking and annotating. I was able to visit Baker Library, Dartmouth College, that Spring, and through the good graces of Dr Phillip Cronenwett, was given the opportunity to actually see originals of the Blue Books and obtain several of the smaller papers which we did not have. If memory serves, I think we may have been able to reciprocate on some of these. After our second flooding, University College made available to us its Ladies Powder Room in the basement and we had larger and drier quarters from which to work. (This "Arctic/Subarctic Research Lab" was affectionately known as Lady Jane's Loo and Lab.) We had completed placing copies of the Blue Book photocopies with Archives and Government Documents.

In October 1993 we lost Andrew. In the intervening years we completed the final output in both print form and Chris Bunio digitized the Index so that it could be placed on a website. This was done by Libraries Electronic Technologies Services in 1998 minus the statement of"Acknowledgements and Introduction." That took another six months. It has now been twenty two months that the University of Manitoba's Libraries Administration has refused to acknowledge the intellectual property rights of the Arctic/Subarctic research team which edited. annotated and made available Andrew Taylor's Index to the Arctic Blue Books as well as photocopies of the Blue Books themselves.

The Index is available on-line through the anthropology web-site:
http://www.umanitoba.ca/faculties/arts/anthropology/bluebooks/index.html
or at the Hudson's Bay Company Archives in Winnipeg. There is also a complete set of Blue Book photocopies there dedicated in honour of Ruth May.

Arctic Environmental Impact Assessment, ARIA
http://www.urova.fi/aria/

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In the Arctic, many common features can be recognised in the climate, the ecosystems and the socio-cultural characteristics and these separate the Arctic from other regions of the world. The common features affect the type of investigation, the choice of method and approaches, and the time span of an Environmental Impact Assessment. The Arctic nations have become increasingly aware of the need to combat threats to the arctic environment.

About ARIA

Environmental Impact Assessment (EIA) is used around the world in project preparation. EIA is a process where you identify, communicate, predict and interpret information on the potential impacts of proposed activities on the environment, including humans. It also finds measures to address and mitigate these impacts, for example by examining alternatives. In many countries, including all Arctic countries, EIA is mandatory for specific, often large-scale activities.

In **1989**, the Finnish government invited representatives of all eight arctic countries to discuss co-operative measures for the protection of arctic environment (Rovaniemi-process) and in **1991** at Rovaniemi, Finland, ministers from all arctic countries approved an Arctic Environment Protection Strategy (AEPS). The following working groups function under the AEPS:

- The Arctic Monitoring and Assessment Programme (AMAP),
- Conservation of Arctic Flora and Fauna (CAFF),
- Protection of the Arctic Marine Environment (PAME),
- Emergency Prevention, Preparedness and Response (EPPR) and Sustainable Development and Utilization (SDU).

After the establishment of an Arctic Council in **1996** the AEPS programmes will continue as activities of the Arctic Council.

A circumpolar ad hoc group, whose task was to evaluate a proposal for an electronic information system supporting arctic EIAs, has recommended to the SAOs (Senior Arctic Officials) of the Arctic Council that an electronic network on the WWW should be established. The idea to set up an arctic electronic exchange of information on Arctic Environmental Impact Assessment, ARIA to support the guidelines was developed at the expert meeting on the EIA-guidelines in Rovaniemi, 1996.

It was important that the GUIDELINES FOR ENVIRONMENTAL IMPACT ASSESSMENT IN THE ARCTIC (see literature) became a living electronic document and remain open for regular revisions.

The purpose of the ARIA - web site and the associated links is to improve information exchange on arctic EIA's. The network enhances the implementation of the guidelines nationally. The first step in this four years project has now been taken at the Arctic Centre and some basic material from arctic countries EIA and environmental questions has been collected to ARIA - site. EIA procedures and projects in the eight Arctic countries and detailed description of the EIA procedures in different arctic countries can be found from the tables.

Traditional knowledge and EIA

Overriding issues are, however, the cumulative effects and the indigenous peoples of the Arctic. Several indigenous peoples live in the arctic region. Their culture, social system and economy depend

on the renewable resources and on extensive land areas. The indigenous peoples also hold accumulated knowledge on the arctic environment, and the management of its resources for present and future generations. There is a need to take into account the indigenous peoples and their knowledge in all phases of the EIA-process.

The information and links listed are selected to provide a comprehensive picture of ways in which Native people have come to understand and relate to the environment.

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Antarctic Aerial Photograph Collection in the Goldthwait Polar Library

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Abstract
In 1998 the Goldthwait Polar Library received a gift of 18,949 aerial photographs of the Antarctic region. Prior to this acquisition the library owned very few aerial photographs. These were not catalogued in any systematic way and were of limited use to potential users. With the acceptance of this major collection the Byrd Centre needed to establish a procedure for handling the photographs and make them accessible to users. A graduate student with an extensive background in photogrammetry was hired to produce a database of the photographs. To date, 4,271 aerial photos have been archived. This paper is an overview of the project and will discuss how the Centre has chosen to manage this collection.

The Donation of Photographs

In December of 1998 the Goldthwait Polar Library received a gift of 18,949 aerial photographs of the Antarctic region from Dr Wakefield Dort, a geology professor of the University of Kansas. These photographs were obtained from TMA flights dating from the 195's and later (Dort, personal communication). Some of the photographs were produced during Operation Highjump (1946-47). There were no duplicates in this donation. Prior to this acquisition the library owned very few aerial photographs. These were not catalogued in any systematic way and were of limited use to potential users. The scientific staff of the Byrd Centre acquires aerial photographs for their own research. There is no master list of what has been obtained over the years. With the acceptance of this major collection, the Byrd Centre needed to establish a procedure for handling the photographs and make them accessible to users. The second author of this paper, a graduate student with an extensive background in photogrammetry, was hired to produce an archive of the photographs.

Initial Control of the Collection

In order to gain initial control of the collection, each individual photograph and roll was numbered. Dr Dort cautioned that the photographs should be kept in the original order they were received because he separated the different photo groups. Some of what we received were actually rolls of prints that were produced at the lab at McMurdo Station. The US Geological Survey Antarctic Map Index on microfiche was used to identify geographic locations of the photographs from the TMA flight lines. The photographs were then plotted on the US Geological Survey topographic Antarctic map series (Scale 1:250,000). Three filing cabinets were purchased to house the collection.

Aerial Photograph Archive

To date, there are 4271 aerial photographs in the archive. Each photo carries 7 attributes of information: 1. TMA number; 2. Photo number; 3. Looking direction; 4. Latitude; 5. Longitude; 6. Drawer and; 7. Map number. The data are arranged in a tabi~lar form, in which each single photo makes one record in the table. Hence there are 4271 records in total. Table 1 is an excerpt of the photograph database. The first two columns together, the TMA number and the photo number, create a unique identification of a photograph. Both the TMA number and the photograph number

are printed on each individual photograph.

The looking direction column has three values, F3 1, F32 and F33, and they are also printed on the photograph. F32 refers to vertical photograph, while F3 1 and F33 means high oblique photographs. Depending upon the direction of the flight line, F3 1 is a photograph taken to the left of the aeroplane and F33 is to the right. Figure 1 is an example of the high oblique aerial photograph, in which the horizon appears at the top.

The fourth and fifth column of Table 1 are latitude and longitude of the centre of the photographs. The latitude is always negative as they are in the Southern Hemisphere. The longitude may be positive or negative, depending upon if is to the east or the west of the Greenwich meridian. The sixth column tells where the photograph is physically located in the cabinet. For example SF means the fifth drawer, at the front.

The last column refers to the map number of the US Geological Survey topographical map, scale 1:250,000, where the photograph is geographically located. This column can be used as a search key to find aerial photographs if the map number in which the working project area location is known.

The USGS topographical map series of Antarctica consists of 90 map sheets. The maps vary in size, but each map covers a rectangular area. Since the latitudes and longitudes of the two corners of each map, lower left and upper right, are known, it is possible to plot aerial photographs on the USGS maps. Table 2 is an example of some of the USGS maps where the latitude and longitude of the maps are shown in the last four columns.

An example of the USGS map with aerial photographs overlaid on it is shown in Figure 2. The crosses in Figure 2 are the positions of aerial photographs available in the archive. Finally, some statistical information is given in Figure 3. It tells how many photographs are in each USGS map.
Figure 3 Number of aerial photographs archived according to positions in the USGS maps.

Collaboration with the U.S. Antarctic Research Centre

By far, the most difficult task remaining for the completion of this project is the identification of the remaining 77 percent of tl~e photographs. The photographs that have been added to the archive were clearly marked with TMA flight lines. The remaining photographs do not have enough information to discern their locations. Bob Allen of the U.S. Antarctic Resource Centre of the US Geological Survey in Reston, Virginia (*http://usarc.usgs.gov/*) has agreed to help us. The Resource Centre has listings of the flights and the necessary background information to ascertain the geographic locations. For example, information found on the rolls of film, such as 4510, Roll #14, Flight #15, Run 1-6, 9 February 1947, is probably relevant information but without an exhaustive list of flights, it is useless to us. We will need to send this information along with photocopies of sections of the photographs to the Resource Centre. If there is not enough viable information on the photograph or the sleeves we might rely on what expertise we have at the Byrd Centre. Members of the Geology Group and the Glacier Dynamics Group might recognize the areas in the photographs. This is of course the less satisfying alternative because the information they give us may not be reliable and because of the enormous number of unidentified photographs.

Potential Users of the Collection

We have not advertised the existence of the Antarctic aerial photograph collection. When more of the project is complete we will notify members of the Centre of its availability. Several research groups within the Centre are potential users of the collection. The Glacier Dynamics Group and the Geology Group of the Centre may need to use these photos for their Antarctic field seasons.

The Remote Sensing Laboratory is currently participating in the RADARSAT Antarctic Mapping Mission. The laborat~)ry obtained declassified Corona satellite reconnaissance images from the USGS EROS Data C~nter in Sioux Falls, South Dakota. These images and the data they compiled from the RADARSAT-1 project were used to compare changes in Antarctic ice streams over periods of time (Jezek,

1999). The Antarctic aerial photographs in the archive supplements the new RADARSAT imagery and the Corona Mission imagery.

The U.S. Polar Rock Repository being constructed at the Byrd Centre is scheduled for completion near the end of the year 2001. This repository will house rock specimens from the Antarctic and the Arctic. Background information about the collecting areas and supporting documentation for the collections will be archived in the online Antarctic Geological Database (*http://agd.mps.ohio-state.edu*). Some of the collections already in the Centre's possession do include aerial photographs. Do these belong in the library or should they remain in the rock repository? If it is determined that they should remain with the rock collections, then we should at least note in our database that certain photographs are available there.

Integrity of the Collection

One major concern from the library's perspective is maintaining the integrity of the collection. Much time and effort has been spent organizing the photographs and producing the aerial photo archive database. The collection may be used in the library, but will not circulate. The photo archive (Table l) and the accompanying U.S.G.S. map index (Table 2) could be mounted on the Byrd Centre's home page for staff access only or available from the library's public access terminal.

If a user wants a particular image or group of images, he will need to decide what format is preferable, a scanned image or an actual photographic print. Both of these options would be available on an as requested basis. The scanned photograph would be copied to two CDs, one kept in the library and one given to the user. One aerial photo scanned at 200 dpi and stored in a compressed format such as Jpeg, will take about one megabyte of storage space. Therefore, one CD with a capacity of 650 megabytes should be able to hold approximately 650 photos. To scan one photo at a 200-dpi resolution, would take about 10 minutes, depending upon the scanning equipment. If the user wants a photographic print, this would require having a negative of the image and the print produced. The library would keep the negative for future requests. Two more columns need to be added to the database, one to indicate whether or not the photograph has been scanned, one to indicate whether or not a negative has been produced. The cost of the negative and the photographic print would be passed on to the user.

Conclusion

It is inevitable that the second author will not work on this project indefinitely and then the library will assume full responsibility for the collection. If all the photographs have been identified and added to the archive database, we expect that it will not be difficult to manage this collection. The research staff of the Centre should provide assistance to the library when needed.

The Antarctic Aerial Photograph Archive is intended to be an in-house resource to benefit members of the Centre and visiting scientists. The EROS Data Centre provides aerial photographs to the Antarctic scientific community for a nominal fee. Therefore, we should not necessarily consider this collection to be unique, but one that enhances the research capability of the scientific staff of the Centre, now and in the future.

References:

Jezek, KC. "Glaciological Properties of the Antarctic Ice Sheet from RADARSAT-l Synthetic Aperture Radar Imagery. *Annals of Glaciology*, 29, (1999), 286-90.

TMA no	Photo no	looking Direction	Latitude (deg)	Longitude (deg)	Drawer	Map no
886	9	F31	-84.7150	-112.6900	5F	9
888	46	F31	-84.7033	-112.0000	5F	9
888	47	F31	-84.7283	-112.2267	5F	9
279	79	F31	-76.9575	159.3921	10B	13
279	80	F31	-76.9467	159.3700	10B	13
353	239	F31	-76.5192	161.5375	10B	13
353	240	F31	-76.5007	161.5129	10B	13
539	92	F33	-76.7483	161.3696	10B	13
539	93	F33	-76.7250	161.3300	10B	13
539	100	F33	-76.5617	161.0729	10B	13
539	101	F33	-76.5383	161.0400	10B	13
539	106	F31	-76.4217	160.8817	10B	13
539	107	F31	-76.3983	160.8500	10B	13
539	109	F31	-76.3513	160.7858	10B	13
539	110	F31	-76.3277	160.7538	10B	13
539	119	F33	-76.1022	160.4511	10B	13
540	157	F33	-76.0050	159.7067	10B	13
540	158	F33	-76.0227	159.7302	10B	13
540	201	F33	-76.8032	160.7300	10B	13

Table 1. Database of Antarctica aerial photographs

Map no	Name	Lower Left		Upper Right	
		Lat	Long	Lat	Long
1	Newcomer Glacier	-78	-88	-77	-82
2	Vinson Massif	-79	-88	-78	-82
3	Havola Escarpment	-85	-110	-84	-95
4	Long Hills	-86	-125	-85	-110
5	Moulton Escarpment	-86	-110	-85	-95
6	Mount Galla	-76	-129.25	-75	-124.50
7	Mount Hampton	-77	-130	-76	-124
8	Mount Sidley	-78	-130	-77	-124
9	Ohio Range	-85	-125	-84	-110
10	Pagano Nunatak	-84	-96.33	-83	-85.66
11	Stewart Hills	-85	-95	-84	-80
12	Thiel Mountains	-86	-80	-85	-95
13	Convoy Range	-77	156	-76	162
14	Franklin Island	-77	162	-76	169
15	Mount Discovery	-79	162	-78	168
16	Mount Harmsworth	-79	156	-78	162

Table 2. USGS maps of Antarctica and their area coverage

Figure 1 High oblique aerial photograph

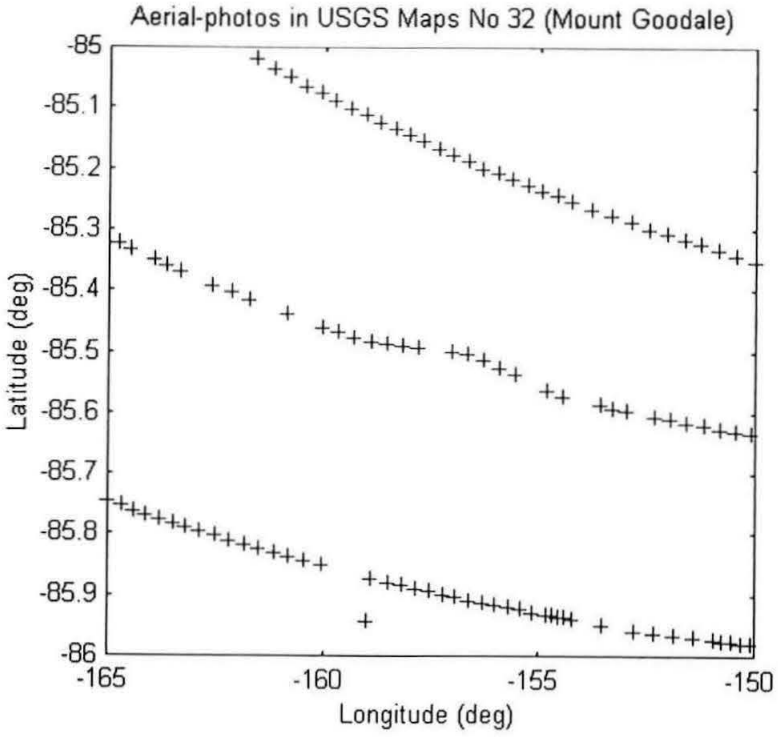

Figure 2 Example of the number of aerial photographs on a USGS map

Russian Science in Transition: A Bibliometric Study

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Introduction

With the breakup of the Soviet Union and consequent economic instabilities following its aftermath, the state of Russian science which was once predominant, is now in disarray. Government support which was the focal point for basic research has been drastically reduced. Since 1992, however, there have been major reforms to funding allocations. In addition, in 1992 the government of Russia created the Russian Foundation for Basic Research (RFBR) to implement the principles and standards of the world scientific community. This policy is new to Russia. At the same time, opportunities to submit applications for grants to foreign funding organizations were opened.

An unprecedented event in the life of the scientific community of the former Soviet Union (FSU) was the allocation, (by American businessman George Soros), of US$200 million to support basic research in the FSU. The International Science Foundation (The ISF) was created in Moscow to organize the distribution of grants funded by Soros. During the period 1993-96 US$66.5 million was distributed by the the ISF and US$121.1 million by the RFBR were distributed to support research projects.

The support to Russian science by different funding agencies is displayed in Figure 1.

The new funding policy and especially the Soros Foundation's support of basic research in Russia provoked heated discussion in the Russian Parliament – the State Duma. The State Duma holds special hearings annually on the activities of foreign agencies. The Minister of Science and Technology Policy of the Russian Federation academician MP Kirpichnikov at the last hearing on 11 November 1999 had to defend again the activities of Soros in Russia, particularly the ISF telecommunication program and Open Society Institute (also part of the Soros Foundation) grant program.

This paper is part of the project entitled "Russian science in Transition", the main goal of which is to analyse the impact of new funding policies on research being done in Russia; the distribution of funding among individual scientists, institutions and geographic regions; the impact of projects funded by the ISF and the RFBR, and the level of collaboration between Russian and western scientists.

Methods

During the last ten years, there has been some research devoted to the evaluation and contribution of Soviet and Russian science to world science (Garfield, 1990; Mashakova-Shaikevich, 1995). The *Science Citation Index* (SCI) database has been used for all these investigations. However, the SCI database then covered only a small proportion (only 95 titles, or 20 %) of Russian journals. For some reason, this figure was dropped to 71 titles in 1995. In our opinion, the SCI database does not provide enough material to allow an evaluation of Russian science. As far as we know, no Russian database has ever been used for the bibliometric evaluation of science.

The ISF and RFBR database, which

includes information about grant recipients in 1993-96, provides a unique opportunity for a bibliometric study of science in Russia. The primary source of the database were the various documents created by grant recipients. The database contains information about the funded project, name and address of the research organization, the funding agency and the type of the organization (research institute or educational organization). To achieve the goals of the project, we designed the database "GRANT" to include data on 16028 research projects funded by the RFBR and the ISF (among them are 2865 research projects funded by the ISF).

The distribution policy of both agencies was analysed. At first glance, it seems that grant support covers too small a part of Russian science to draw any conclusions on the basis of the project competition. According to the statistical directory for 1995, there were about 525 thousand specialists involved in research. About 115,000 have a scientific degree, and are therefore potential principal investigators. Research teams consisted usually of 4-5 participants. If we also consider the number of grant applications (about 10% of distributed grants) which were supported by experts (but did not receive financing due to the shortage of money) we can assume that a considerable part of the scientific community in Russia was involved in this competition.

Furthermore, if we take into account all rejected projects (according to the RFBR statistics every fourth application was awarded a grant), then we could state that the number of people (approximately 80,000-100,000 researchers) who were reviewed is comparable to the number of researchers in the country according to official statistics. We can state that no large scale mechanism for the evaluation of researchers other than the grant competition has been performed in Russia.

The database "GRANT" consists of three parts: (1) the file of grant holders supported by the ISF in 1993-94 and by the RFBR in 1993-96; (2) the file of all projects supported by the ISF in 1993-1994 and by the RFBR in 1993-1996; (3) the file of organizations supported by the ISF in 1993-1994 and by the RFBR in 1993 -1996.

The main problem was that in ISF reports, all information was written in English and the same institution, city or author name might be named differently in 1993 and 1994. The names of institutions were not completely standardized even in the RFBR reports, which are written in Russian. Users of the SCI know how hard it is to collect information about the publications of a researcher who writes using the Russian alphabet: the author's last name may be transliterated in many ways. The obstacles are discussed in this paper.

Discussion and Results.

The First Russian Funding Agency.

The Russian Foundation for Basic Research is a government organization whose primary goal is to support the most promising research initiatives in all fields of fundamental science on a competitive basis. The RFBR budget consists of about 6% of the total sum in the annual Federal Budget awarded to science in Russia. Nearly 70% of the RFBR budget is earmarked for support of research projects carried out by individual scientists. The duration of any such project cannot exceed three years .The Foundation gives annual support to several thousand new research projects and continues to finance up to 8,500 projects. Unfortunately, we are not able to calculate accurately the average amount of a research grant awarded by the RFBR in 1993-95 because of shifting inflation rates and the consequences of "black Tuesday" in October of 1995. In 1996, the average grant was about US$10,000. This money covered overhead (20 %), salary, equipment, and travel inside the country. The RFBR has a special program to cover a purchase of expensive equipment.

The International Science Foundation (ISF) had the same policy. Tthe research grant covered overhead (20%), salary, equipment and travel. Since 1995, The ISF has not supported individual research projects and runs only a Telecommunication Program.

We want to emphasize that government support of research organizations covers only office expenses (including utilities) and partial salary costs. Grant money is essential for support of a scientist's family, but salaries of scientists are

often not paid on time,.

Database "GRANT" structure

The database "GRANT" contains information about the funded project, address and name of the organization where the research was done, the name of the funding agency and the type of the organization (research institute or educational organization). Database "GRANT" includes information on 16028 research projects. Among them are 2865 funded by the ISF in 1993-1994 (since 1995 the ISF stopped supporting research projects), and 13163 projects funded by the RFBR in 1993-96.

The database covers information on 11651 researchers affiliated with 1406 organizations which were supported during 1993-1996. Grant distribution to individual researchers was as follows: 69.4% of them received one grant; 23.1 % - two grants; 7.3% - three grants. The file of principal investigators with funded projects includes a small but very important part of Russian science - its *corps d'elite.*

Grant distribution by field of science.

The distribution policy by agency was analysed. The two funding agencies together funded 963 organizations in Russia in 1993-1994. The classification by fields of science was used. This was the same classification as in the INTAS program.

M - mathematics, mechanics and computer science;
P - physics and astronomy;
C - chemistry;
LS - life sciences including bio-medicine;
ES - earth and environment science.

There was a difference in the number of grants distributed. The number of grants funded by the ISF was only 57 % of the number of grants funded by the RFBR in 1993-1994, meaning there were 1.7 more RFBR grants awarded.

Our goal was to find the similarities and differences according to the evaluation of international and domestic evaluation of Russian research institutions, different trends in science, and so on. From there, it made sense to compare not the number of grants allocated by each funding agency to a given institution (field of science, region and so on), but the proportion of grants given by each agency to institutions in the pool. The distribution of grants by the field of science by the two funding agencies is presented at Figure 2.

In 1993-94, the policy of both funding agencies was quite similar in their evaluation of projects by field. However, the RFBR policy between 1993-96 was to increase support of projects in life science and earth sciences. There was a decline in the number of grants given to projects on physics and astronomy (25.1 % in 1993 and 22.1% in 1997) and mathematics (Figure 3). In 1997, the RFBR funded more than two hundred projects on Arctic studies. About 50 % of grants have been given to projects on earth sciences and environment and about 40% to projects on life sciences. About 65% (136) of grant-holders who were engaged in these research projects work in the northern regions. Among them about 50% were involved in earth sciences and environmental projects and 30% in life sciences. The distribution of the projects on Arctic studies is displayed at Figure 3a.

Grant distribution policy by organizations and regions.

Both agencies awarded the greatest number of grants to organizations involved exclusively in basic research. In second place, after a large gap, are organizations connected, at least formally, with education, followed by those that can be considered industrial. We found this trend to be the same for both funding agencies. We want to emphasize that the ISF used international panels (including Russian scientists) for evaluating proposals, and the RFBR invited only Russian scientists for its panel. The analysis shows that the ISF policy was concentrated more on supporting small leading groups of research institutes of theRAS; for other types of organizations support was lower than the RFBR.

We found that the top 67 organizations (7 %) received 50 % of the grants distributed by both agencies. Twenty organizations (about 2.5 %) received 25.6 % of all grants distributed by both funding agencies. Only four of them did not belong to the Russian Academy of Sciences. It must be emphasized that 409 organizations (only

10 % of all those organizations involved in R&D in Russia) belong to the Russian Academy of Sciences. They conduct about 80 % of all R&D in Russia. The list of leading organizations by number of grants from the ISF and the RFBR is represented in Table 1.

Unlike in 1993, the RFBR changed the way it distributed grants in 1996. A number of organizations affiliated with the Ministry of Higher Education (universities and high education institutes) was increased from 3% in 1993 to 4% in 1996. (Table 2). The same trend to concentrate limited resources for supporting leaders was traced in the distribution by economic region. The regional policy for distribution by funding agency in 1993-94 is shown in Figure 4. We can state that RFBR activity was aimed, to a certain degree, to diminish disproportion in the concentration of scientific resources, and to stimulate scientific activity in the regions.

Comparison of the Policies of Two Funding Agencies:

The main results of the analysis of ISF and RFBR activities allow us to state:

- *Both funding agencies played a major role in research in Russia in 1993-94. Science in Russia continues to have non-homogeneous structure and a strong concentration in certain regions.*
- *Both funding agencies have equally evaluated the research institutes in physics and life sciences, but in other fields of science the evaluation by peers was slightly different.*
- *Both funding agencies gave similar support to leading organizations. However, the ISF support went mainly to the Research Institute the Russian Academy of Science. We can state that RFBR policy was directed to support research institutes as well as other organizations. About 5 % of grants were given to new small enterprises and companies which appeared during "perestroika". The RFBR paid special attention to promoting research in the regions situated far away from Moscow. Among the universities awarded RFBR grants were universities in Central-Chernozemye (Samara, Voronezh and Belgorod).*
- *Additional support from local governments had an important impact on the future activity of a researcher*

Demographic data on RFBR recipients supported in 1994-97 was collected. The distribution by age and by field of science of all participants is displayed at Figure 5. About 10% of grant holders in mathematics, mechanics and computer science are under the age of 25. The distribution by age and by field of science is different. The largest number of grant holders were aged between 46 and 60. The cumulative distribution of grant holders by age and by field of science is displayed in Figure 6. The sharp fall in the graph is related to a low birthrate after the World War II. When competitive funding was introduced in Russia some scientists believed that the new approach could be difficult for older scientists . However, the results of our survey show that older scientists embraced the new system well. A special mark for "gender" was introduced in the preliminary and final report form only in 1996. In 1993, the number of women scientific employees reached 53.8% of the total number of science employees. Our analysis had shown that among grant holders, 12 % were women in 1996. Their distribution by field of science between 1994-96 is displayed in Figure 7. The lowest percentage (about 4.1 %) was observed in physics; the highest (about 30%) among researchers engaged in life sciences.

The output of RFBR grant holders.

Scientific papers provide the most relevant measure for the success of funded research. The statistics on output were collected from the preliminary and final reports submitted by grant holders to the RFBR in 1997. On average , the output of each project was reflected in 3.1 papers. The total output was reflected in 27,251 papers published in different journals. Of 76.5 % of the papers published, 32.7% or 8926 papers appeared in western journals, and 43.8% or 11937 papers in Russian journals covered by the SCI in 1997. The geographic distribution represented 121 cities.

It was well-known that Russian science

was centralized, and it is not surprising that the output of eight cities – Moscow, Saint-Petersburg, Novosibirsk, Nizhnyi Novgorod, Ekaterinburg and three satellite science centers – Chernogolovka, Troitsk and Pushchino - included 81.5 % of all papers. The output from those cities represented about 84.7 % of the total number of Russian publications covered by the SCI database in 1997. It is known that the SCI database does not cover East European literature well. This is one of the reasons that the results of research done outside of mega-cities (like Moscow or St-Petersburg) are not available for the world scientific community.

A list of all the cities situated away from the central area was compared with the share of grants awarded, and the share of publications produced. These cities were Volgograd, Boronezh, Vladivostok, Irkutsk, Izhevsk, Ufa, and Ivanovo and were chosen because research productivity was higher than their rank by grant numbers. We can state that the RFBR funding policy to promote research in the provinces appears to have borne fruit.

International Collaboration.

International collaboration through co-authorship is a topic to which many recent studies have been directed. Before the disintegration of the FSU, collaboration with western countries was regulated by the government. Dramatic changes in the 1990s and the influence of perestrioka have made a strong impact on the development of science since in Russia. To evaluate the size and scope of Russian collaboration with scientific colleagues in the USA, England and the Netherlands, data was retrieved from the SCI database on CD-ROM in 1993-97.

1403 joint papers for 1993, and 2499 joint papers for 1997 were analyzed. The growth of collaboration by country is presented in Figure 8. Among co-authors of joint papers, there were about 60 % of RFBR grant holders. The organizations affiliated with the RAS are leaders in collaboration. Physics was, and continues to be, a leading field for collaboration. Approximately 50 % of the co-authored papers were in the field of physics. The distribution of joint papers by field of science within any studied country is shown in Figure 9. A small group of Russian institutions affiliated with the Russian Academy of Sciences collaborates in physics with all studied countries. Among other scientific fields we did not observe the same trend. In 1997, the champion of Russian-Dutch collaboration in chemistry was the Institute of Organic Chemistry of the Siberian Branch of RAS with 19 papers. The leader in English-Russian collaboration in chemistry was the chemistry faculty of Moscow State University with 20 papers. However, there was an increase in the number of institutions engaged in collaborative work. In 1997, there was a slight increase in collaboration by American and Russian researchers from organizations which were strongly involved in military research. For example, six papers have been published by scientists affiliated with organizations situated in Arzamas 16 (or Sarov), Chelyabinsk -70 (or Snezhinsk). Ordinary Russian citizens have are not yet allowed to visit these cities.

Papers related to the study of dangerous viruses were published by Russian scientists from "Vector", an organization involved previously in the development of biological weapons. One paper in 1993, three joint Russian-American papers in 1997, and one English-Russian joint paper in 1997 represent a very positive sign because collaborative work provides an impetus for the prevention of mutual distrust and the spread of this kind of research in terrorist countries. Last year, collaboration between Russia and the USA attracted researchers from different regional universities in all fields of science.

The Survey.

This survey was undertaken to supplement statistical analyses of data on grants and grantees stored in the RFBR database, and helps to interpret these data. A questionnaire to evaluate the impact of funding agency policies on the Russian scientific community has been developed. The name of recipients has been obtained from the database GRANT .

A preliminary questionnaire was tested in 45 interviews. The combination of interview and questionnaire gave a fair picture of what scientists think about the new funding system. The questionnaires were distributed by mail to two group of scientists. One group of one thousand

grant holders were *randomly* selected from database GRANT. The other group was made up of 430 "experts" chosen from a selective dissemination of the information service department of VINITI. The members of this expert group are outstanding scientists, and members of the Russian Academy of Sciences who have served as peer reviewers on different committees, and who have refereed under a number of circumstances. The questions were targeted to gather information about the following: (a) the sources and scope of the respondent's knowledge about the activities of domestic and foreign agencies; (b) personal experience from interaction with the organizations, and (c) the respondent's opinion on the merits of competitive funding and its impact on Russian science. The response rate was 31.8%.

To encourage respondents to answer the questionnaire, we promised to inform them of how often each of respondents was cited in 1997. This kind of information is very difficult to get in Russia because the SCI is available only in three libraries. Two of them are situated in Moscow and one in St. Petersburg. All returned questionnaires were processed by MC ACCESS and analyzed.

Demographic data about respondents was collected. Both groups of respondents were older than the total pool of grant-holders. Among the first group, about 6.2 % of respondents were below the age of 40, 44% of them were between 41 and 60, and 46.6 % were between 61 and 70. About 58.5 % of the expert group were between 51 and 70, and about 39.3% were older than 70. When competitive funding was introduced in Russia some scientists believed that the new approach could be difficult for older scientists, however, the results of our survey show that older scientists embraced the new system pretty well. The respondents were highly qualified scientists. 23.0% of them had a doctor of science, and 74.1% a professorial degree. The distribution by scientific field is slightly different from the total number of of RFBR grant holders. The distribution by organization is similar to the distribution in the total pool of RFBR grant holders. About 54.3 % of respondents of both group were affiliated with the RAS. Another large group of respondents - 35.2 %, work in organizations affiliated with universities and higher education institutes. About 35% of respondents emphasized that they work in two organizations: at a research institute, and part-time at the higher education organization. Only a few respondents from the first group work in private companies or at universities part time. The geographic distribution of respondents was wide and covered thirty-five cities situated in the north of Russia, Central Chernozemye, South Siberia, the Far East, the North Caucasus and all the main cities along the Volga River. About 42.4 % of respondents worked in Moscow and surrounding region, and their share in the RFBR grant pool was about 49.8%. 15.1 % were from St. Petersburg and surrounding region with a share in the RFBR grant pool of about 12.9 %.

The survey gathered valuable information about their personal experience with funding agencies and the scope of knowledge about activities of domestic and foreign agencies. All respondents were well aware of opportunities to submit proposals to various domestic and foreign funding agencies. During the last five years, respondents from both groups have been awarded grants from the RFBR. On average each respondent received more than five grants between 1993 and 1998. Besides the grant from the the RFBR about 66.5 % of the respondents belonging to the first group, and about 70 % of respondents belonging to the expert group were awarded grants from different foreign agencies. In 1993-94, grants were awarded mainly by the ISF (about 25.5 % of respondents). Between 1995 and 1998, research projects were supported by INTAS (20 %), and the Civilian Research and Development Foundation (CRDF) (about 10.5 %). Five respondents (less than 1 %) received grants from the International Science and Technology Center (ISTC). The ISTC as a funding agency is directed to the proliferation of military research. A few Russian foundations, such as the VI Vernadsky Foundation, and the Russian Foundation for the Promotion of Small Business are unknown by the majority of respondents of both group. Among the respondents affiliated with higher education organizations about 25.5% were awarded a grant as "Soros' Professor". This is a special program financed by the Open Society Institute (OSI). However, respondents pointed out a few dozen foreign agencies who supported their research.

The activities of these agencies are largely

unknown to the domestic scientific community. Since 1993, the Ministry of Higher Education of Russia (MHER) has run a special program to support basic research conducted at the universities. A dozen of the RFBR grant holders who are affiliated with universities were awarded grants by the MHER. Many respondents emphasized in their comments that travel grants helped them to improve their chance for successful collaboration with western scientists.

In both groups there were disparities related to an unsuccessful application. "Experts" never applied to the same agency again. If respondents in the other group were unsuccessful, they could resubmit a proposal and get funding from the same agency. There are a number of reasons for this attitude, tied into ambition, the need to improve status and the poor economic situation. Many respondents emphasized that grant money (especially grants awarded by a foreign agency) are essential income for the family budget.

One of the objectives of the survey was to find out the sources of information on competitive funding. We asked respondents to rate sources of information (from 1 to 5 with "5" being the highest rating) which they used to get information about a funding agency. Despite the access to Internet (rank 1.0), the overwhelming majority of respondents from both groups has given a priority to press (rank 3.7) as a source of information about funding opportunity. About 45 % of respondents underlined in their comments that the newspaper for scientists *Poisk* (The Search) is the best source of information about competitive funding. Second place among the source of information was given to colleagues. Third place belongs to Internet. The evaluation of sources of information by respondents did not show dependence on age, specialty or institutions of affiliation.

No significant differences in attitude to the competitive funding system was observed among respondents from both groups. Opinion prevails that the competitive funding system gives a researcher greater flexibility to research new areas, and the old idea from the Soviet era to concentrate financial resources on promising trends of science was rejected by 60% of the respondents. The respondents emphasized that they believed that peer evaluation is fair, but some mistakes occur. About 93.9 % of respondents agreed that the state of science could be much worse if funding agencies did not operate in Russia. 88.2 % of respondents stated that the competitive grant system promotes the integration of Russian science into world science. Respondents overwhelmingly (92.2%) rejected the idea that the scientific community in Russia must be self-contained.

Conclusion

The main results of the project follow:

- The competitive funding which was introduced in 1992 is accepted on the individual level in practice. However, it has vigorous opponents in the legislature or the State Duma (Russian Parliament).
- Between 1993 and 1996 RFBR grants have been given to 11651 researchers. 69.4% of them received one grant, 23.1 % received two grants, and 7.3% were awarded three grants.
- Both funding agencies apparently evaluated the same way in physics and life sciences, but in other fields of science the evaluation by peers was slightly different.
- Between 1993 and 1996 awards from the RFBR declined in physics and mathematics, and increased in life science and earth sciences, particularly in research on the Arctic;
- Both funding agencies were similar in their support of leading organisations. However, the ISF mainly supported the research institutes of the Russian Academy of Science. Special attention was paid by the RFBR to promote research in the regions situated far away from Moscow.
- Collaboration with western scientists has flourished. A tendency to a significant diversity in the institutions producing joint publications was observed. An important impact of grants for a researcher was additional support from local government.
- The sociological survey among 1400 grant-holders (response rate 31.8 %) shows that Russian scientists were equally evaluated by different foreign funding agencies. About 70 % of respondents were awarded grants;
- The results of project are being used to

guide and inform the Ministry of Science and Technology Policy of the Russian Federation which is responsible for the promotion of R&D and training students and post docs on proposal writing .

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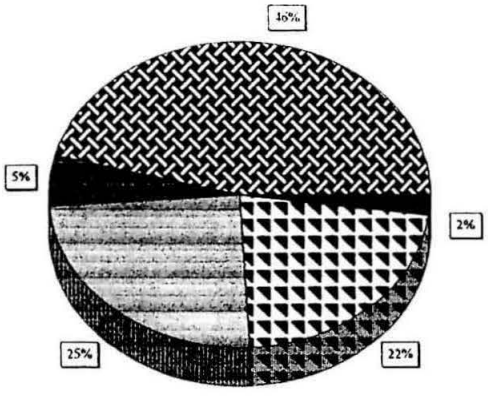
Table 1. Distribution of Grants by the ISF and RFBR -- Leading Recipients

	Organization	Number of Grants	Funding Agency ISF	RFBR
1	Moscow State University, chemistry faculty	186	48	52.4
2	A Ioffe Phys-Tech Institute of the RAS	131	34	65.7
3	Joint Institute of Nuclear Research	117	56	44.4
4	Moscow Sate University - biology faculty	102	35	64.7
5	Institute of Physics, RAS	102	42	57.8
6	Oceanography Institute, RAS	99	37	62.6
7	Moscow State University - physics faculty	97	46	53.6
8	Institute of Chemistry and Physics, RAS	96	46	53.6
9	Institute of Applied Chemistry, RAS	93	44	55.9
10	A Nesmeynov Institute of Organometallic Chemistry, RAS	85	42	57.8
11	Joint Institute of Physics of Earth, RAS	81	33	66.7
12	Moscow State University - mathematics faculty	79	39	60.8
13	Institute of Evolutionary Morthology and Ecology	78	38	62.3
14	Research Institute of Physical and Chemical Biology	76	52	48
15	Institute of Radiotherapy and Electronics, RAS	76	47	52.6
16	Institute of Chemical Physics in Chernogolovka, RAS	75	28	71.6
17	Research Chemistry and Physics Institute	73	49	50.7
18	Institute of General Physics, RAS	73	67	32.9
19	Research Institute of Physics, St Petersburg University	71	37	63.4
20	Institute of Catalysis, Siberian Branch, RAS	67	42	57.6

Table 2. Distribution of Grants by Agency, 1993-97

Agency	RFBR Grants				
	1993 (%)	**1994 (%)**	**1995 (%0**	**1996 (%)**	**1997 (%)**
RAS	65	45.0	45.2	46.0	44.0
Siberian Branch, RAS		10.0	9.9	8.0	10.0
Ural Branch, RAS		2.0	1.9	2.0	2.0
Far East Branch, RAS		2.0	1.7	2.0	2.0
Moscow State University	8.2	9	11	11	10
Other Universities	10	8	12	14	15
Russian Academy of Agriculture	0.6	1	0.4	<1.0	<1.0
Russian Academy of Medical Science	14	21	15	15	15
Others	14	21	15	15	15
Total	100%	100%	100%	100%	100%

Figure 1. Support of Russian Science by Different Funding Agencies



Russian Foundation for Basic Sience since 1993
Russian Foundation for Social & Humanities Research since 1995
International Science Foundation since 1993
Int Assn for the Promotion of o-Operation with NIS Scientists since 1993
International Scientific & Technial Centre since 1994

Figure 2. Distribution of Grants by Field of Science
of Science 1993-1997

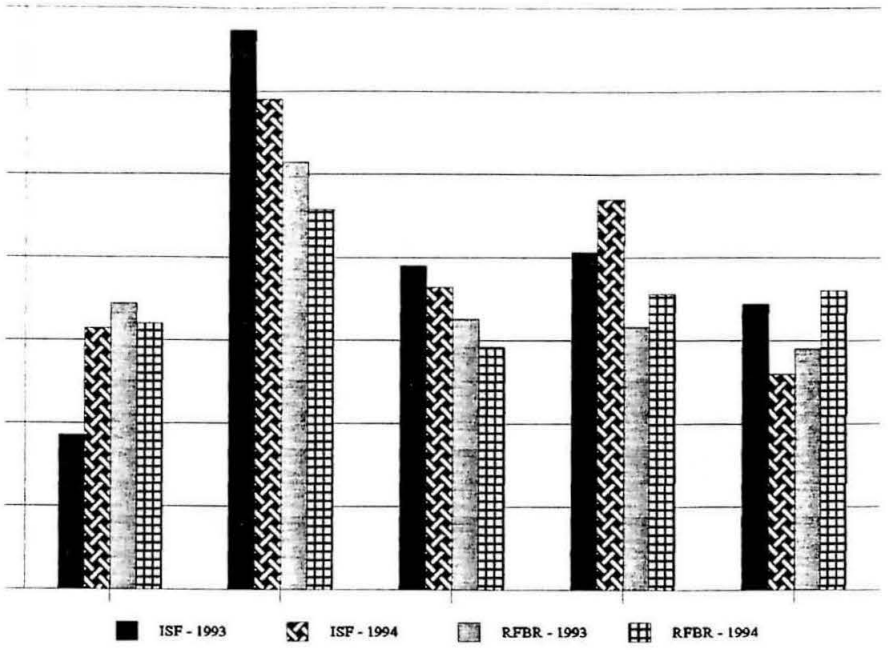


Figure 3. RFBR Grants by Field of Science

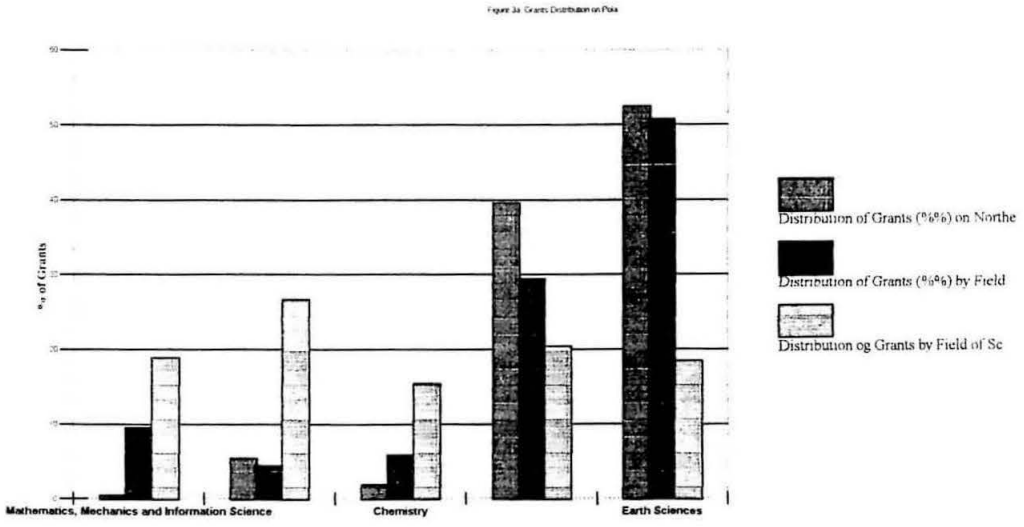


Figure 4. Regional Policy in Distribution of ISF and RFBR Grants

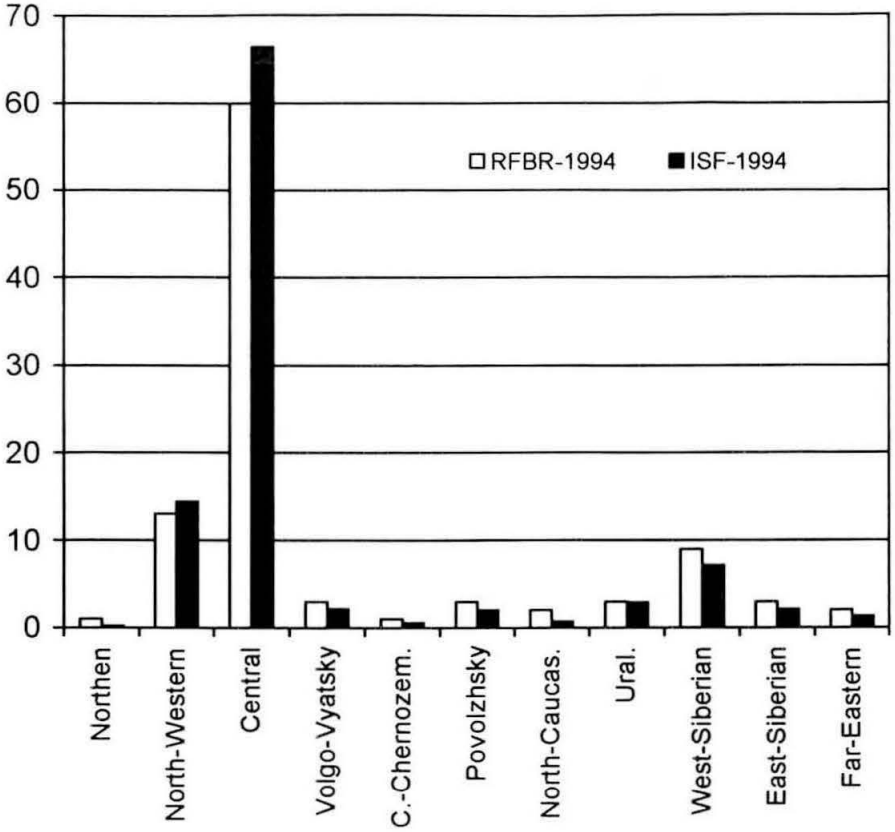


Figure 5. Distribution by Age and by Field of Science, All Participants

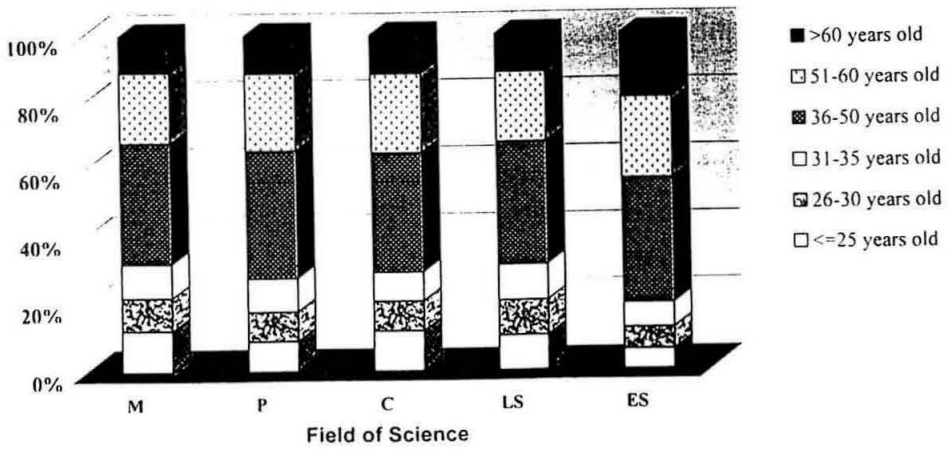


Figure 6. Cumulative Distribution of the RFBR Grant Holders by Age and Field of Science, 1996

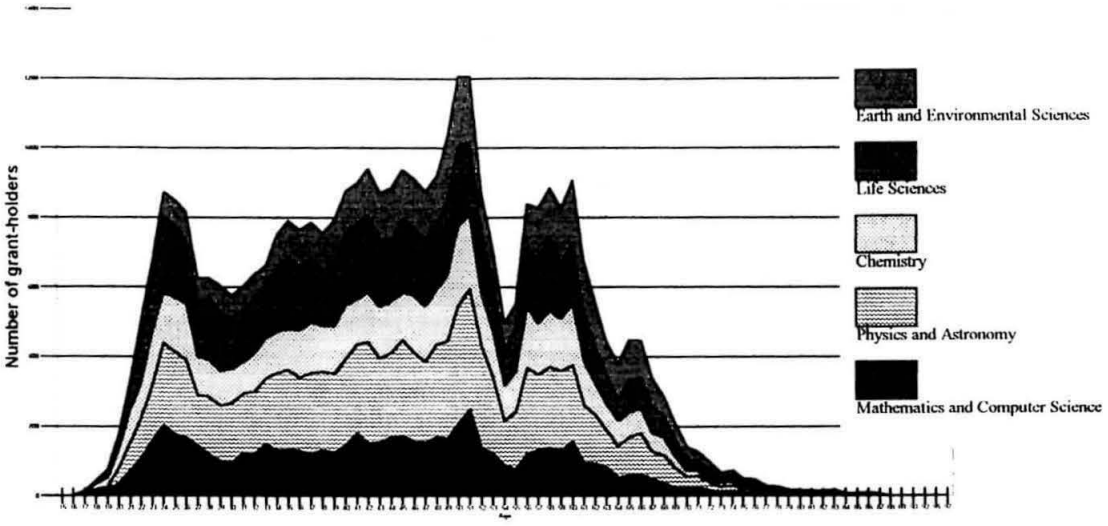


Figure 7. Distribution of Grants to Women by Field of Science

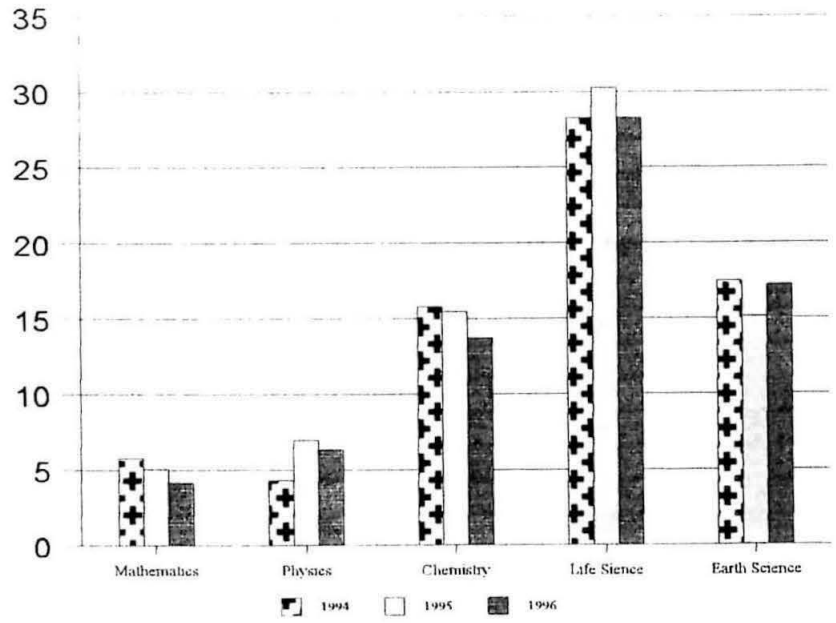


Figure 8. Collaboration Between Russia, Netherlands, England & USA 1993 and 1997

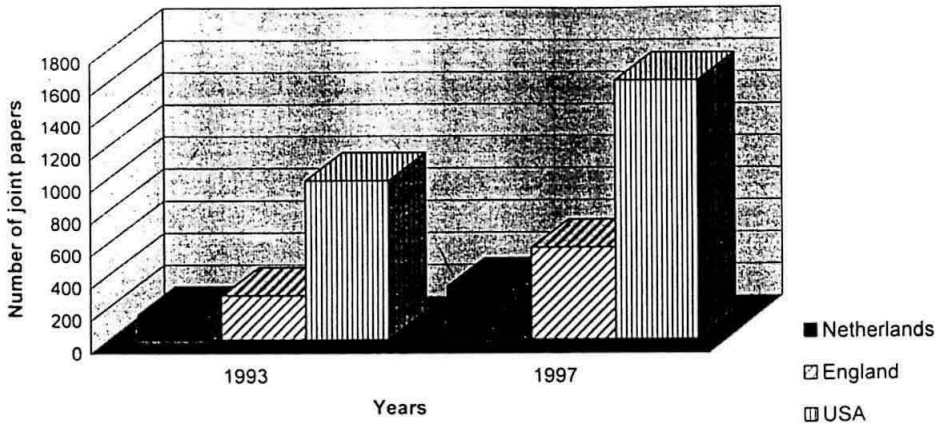
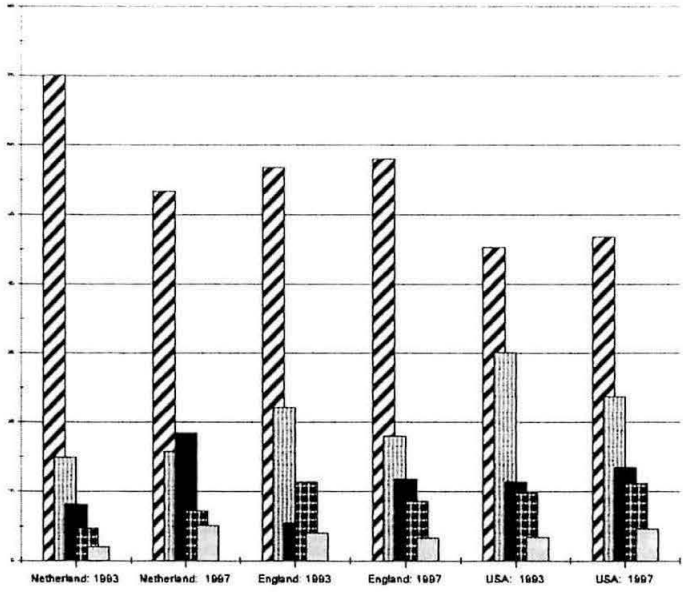


Figure 9. Distribution of Joint Papers by Field of Study 1993 and 1997



Library and Archives of the Arctic and Antarctic Research Institute: the Routes for the Future.

Nick Meschersky
Arctic and Antarctic Research Institute
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The AARI library is participating in the PLC for the first time in its eighty years. St Petersburg is famous not only for its marvellous palaces and museums, but it is also the cradle of Russian science. Here the first University, the Russian Academy of Science, and a wide range of other scientific research centres were founded including the AARI.

One can hardly find a scientific centre with such a long and interesting history and with its own museum -- now an independent institution, and Russia's new president VV Putin congratulated AARI officials and highly estimated their work on the occasion of this year's anniversary and because the AARI is part of the Russian Scientific Centre and it means that the Institute has a considerable potential for development and further research. The AARI library stores its history, sharing both the Institute's achievements and difficulties. Every work written by AARI research assistants through this eigthy-year year period can be found on the shelves of our library. Archives, library and AAIU workers - these are the three pillars that support scientific investigation and form the heart, soul and brain of AARI, but the 20th century was a hard time for Russia, and the AARI library reflected all the drastic changes that took place in the country.

In three years after its appearance in 1920, the young Soviet Republic attached great importance to the studies of the northern regions, and in particular the Arctic, and so organized the Northern scientific, hunting and fishing expedition. In the following years it changed its name first to the Institute of the Northern Studies, then to the All-Union Research Institute and finally to the Arctic Research Institute. Since 1959 it has been using the name ARRI. The changes to the name reflect the scope of the Institute's interests, and the problems studied by its scholars.

During the 1920s, the only publishing organ of the Institute were the *Proceedings of the Northern Scientific, Hunting and Fishing Expedition,* and the *Proceedings of Northern Research Institute.* There were 50 issues. After the reorganization of the Institution in 1930, its publishing activity broadened. Publication of the *All-Union Research Institute* was sporadic, and the annual number of volumes is not clear nor are numbers chronologically consecutive. Today the *Works* are also in print. The All-Union Research Institute also published an informational edition or "Bulletin", which gave a sketch of the Institutional activity and comprised small scientific articles and surveys of national and foreign literature and a bibliography. There was also a scientific collection entitled *Arctica* which became *Problems of Arctica* and then *Problems of Arctic and Antarctic.* In 1959 the Institution started to publish the works of Soviet expeditions.

Nowadays, the Institute's publications consist of the *Works of AARP, Proceedings of the Arctic Expedition, Problems of Arctic and Antarctic* and the *Informational Bulletin of the Arctic Research Institute.* (Editor's note: translations of titles were provided by the author.)

The archives were compiled from the published works of researchers as well as research material. Some of the collection was purchased from antiquarian bookshops, and some was received as a gift. This gift consisted of all classical works on all major scientific disciplines, including medicine, photography and various manuals - anything a scholar might need during his expedition. There was a collection of *belles lettres* - mostly the favourite literature of researchers, and of course, there was a range of Party editions.

The book acquisition reflects not only the historical events of the 20th century, but also sheds light on the personalities of the librarians who worked in AARI. Once a librarian at the AARI it seems, a person devotes all her life to the library. It becomes home and destiny, so it is no surprise that during the Leningrad siege librarians managed to keep the AARI archive intact despite unbearable circumstances.

The 1960s and 1970s can be called the Golden Age of AARI book acquisition. In those years every department sent its own assessor to purchase required literature from different publishing houses. The quality of service, and especially the differentiated bibliographical servicing of famous scholars and directors of scientific projects was very high. Additional books were received with the help of special cards from the All-Union Acquisition Assembly (*Vsesouznaia kniznaia palata*). Librarians surveyed a myriad of periodical editions and kept in touch with all relevant institutions.

Since then the archive has grown, and it now contains monographs, miscellanies, reports and other works on polar regions, oceanography, geophysics, hydrology, hydrometeorology, geography and other related disciplines. Now the archives are replenished by data on both theoretical and applied studies. Every year librarans expanded plans for subject matter, and centralization was one of the features of the Soviet epoch. It is no wonder that the AARI library also had an effective system of accountability and transferring of data.

The AARI library also maintained the archive of ship's logs of expeditions to polar stations, taking into consideration the necessities and personal claims of research. The AARI later had access to the plans for forthcoming publications, and were able to order any data they wished. Apart from the principle archive, there was an exchange archive to meet the needs of subsidiaries and mobile libraries. It had a collection of scientific and reference literature, guides, *belles lettres*, dictionaries and social and political journals. Because the objectives and themes of research changed every several years, these local archives developed quickly.

The collection at the AARI library consists of over 90,000 items, some of them rare editions both in Russian and foreign languages. The file on the geography of polar regions contains the most precious editions. The book stock of the AARI Museum was established in 1937 and includes the collection of polar explorers. This collection contains more than 5,000 items including books, maps, prints and drawings.

Scientific libraries did not have any serious problems in providing users with modern national literature before the disintegration of the USSR. The AARI library used its own resources as well as the books of the larger national libraries through a mail-based book exchange system. The main sources of new journals and data for researchers were national and international journals issued by central publishing houses. In Soviet times, the professional scientists, especially those who worked in severe weather conditions, were very prestigious.

Today things are different, and today, people who work in the AARI are either zealots, utterly devoted to science, or saints. None of AARI directors had to face as many difficulties as IE Frolov, who has been the head of the Institute since 1992. Changes in the economic situation compelled AARI to reorganize the manner and ways of work, but still it continues to support outstanding scholars and a good library. Institutional research is conducted under the auspices of the international organizations of the Ministry of Science. AARI draws up draft along with Russian and foreign institutions and directs its work within the limits of specified target programs.

The introduction of an adversarial approach, as well as other market levers in managing the Institute have brought some advantages to the AARI library, but in most cases they present difficulties, usually impossible to surmount. The lag in new information technologies and poor financing means that the AARI library has been at a disadvantage, and its future direction is even more vague. Its traditional role is changing, but it does not meet modem requirements, for example, so it needs to create radical measures to adapt to the new circumstances.

AARI is mainly financed by the federal government and the place of science in the modern federal budget is quite modest. The sum allotted to the library scarcely covers the expenses of salaries and primitive library services. Book acquisition has nearly ceased and new entries are mostly gifts and works of

AARI researchers. We still use the interlibrary book exchange with some luckier libraries, but unfortunately only within the limits of Saint-Petersburg. Given all this, it might seem surprising that the library and archives survive and develop.

Our library is a circulation library and one of the measures instituted to improve things is to limit how many books circulate. For many years there have been dozens of defaulters, but respect toward the credentials of famous scholars kept librarians from taking corrective and restrictive measures. Turning a blind eye to these breaches resulted in even greater violations and today the AARI library lacks a whole range of unique editions. Those taken by scholars who went abroad with the "brain drain" will be never returned or restored. The same problem occurs with retiring workers. We plan to create a special database together with the personnel department. The Institute's status weak current status and the regular violation of laws in the whole country makes it hard to institute criminal proceedings aginst former employees of AARI.

During the economic forum in Davos, Umberto Eco, a well-known Italian philosopher and writer, said that the modern world is unthinkable without Internet or new information technologies. It is hard to foresee how much our library will technologically progress because this depends not only on us, but also on the financial situation in the AARI and on our relations with Russian and especially foreign colleagues.

Our immediate goal is to transfer paper card files into digital files. Unfortunately, and as usual due to insufficient financing and poor technical equipment, the progress is very slow and painful. Still, our librarians hope for the best, especially because our officials have promised to give us a new computer. We must be careful to do this job properly and as soon as possible because in our times any data becomes obsolete very quickly, and outdated information is not in demand.

The creation of the archive database (non-published materials) has been our only success so far, and it has been approved by Moscow. The archive database was started in 1996 by the members of the Institute computer lab and archive centre. At first, the main purpose of the database was to transfer archives documentation from old (card) types of classification to modern (electronic). This was important. First of all, scientists and other users of the archives could have an efficient way way to search for the needed documents and second, the personnel of the library and archives can find the needed documents immediately, and they can easily classify them. They can also see which document is already in use and which is not.

About 70% of documents were integrated into the database and then a decision was made to use this database via LAN and Internet. (It took 3 years to add this amount of data to the database). The database was transformed to Access 97 format because the computer was upgraded from a 486 to aPentium 120 with the Windows 98 database. The server is *Tatung* and the operating system PostgreSQL on Solaris Sparc 2.5. The data on the server is periodically updated from the Access database by means of ODBC and SQL. The Internet server (Windows NT) connects to the database (ODBC connection) using VBScript ASP so any Internet browser is compatible with the database Internet site at *http://www.aari.nw.ru/projects/fonds/default.asp.*

The data in the database is classified by 10 main subjects:

1. Polar station observatories documents
2. Expedition documents
3. Arctic and Antarctic expedition documents
4. Ice investigation and research documents
5. Science vessels expedition documents
6. Polar station documents
7. North pole documents
8. Arctic and Antarctic documents classified by indexes and themes
9. Alphabetical catalogue of scientists works
10. Catalogue of scientists -- classified by themes

Each document has a specified identification number. The documents are classified and defined by year, date, author, identification number, number in the database, theme, district, publisher, place of publishing etc.

Plans for the future include:

1. To link the documents to the information to the database so that any user could get available documents via LAN or Internet (now the user can only get the information on documents - not the

documents). This will take a lot of time and money because we will have to scan, retype and survey all documents that are not electronic -- about 99%.
2. To evaluate the documents and decide which we can offer for free of charge and which we cannot.
3. To create an Internet site by means of which users could download documents (for money or free of charge).

In the future, when the wages of workers engaged in scientific studies are fair, and young people will be ready to devote themselves to their work, and when AARI will be able to work efficiently in the new market situation our library will develop much more quickly and attract new partners. I would like to thank the Administration of AARI and the head of archives and library department for letting me take part in this fine colloquy and represent our Institute even though I am the youngest worker.

During this colloquy I hope to share our knowledge with our foreign colleagues and to acquire as much as possible from their experience. We seek new contacts and possibilities to cooperate in different spheres as once Peter the Great (the founder of our city) did when he tried to integrate Russia with the rest of the world. I would like to express my gratitude to William Mills and Barbara Kelcey for their help in seeking travel and registration grants and other support - without these my participation would not be possible.

Expedition Indexing and the Organization of Polar Materials

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Abstract
Whilst the line between an "expedition" and a tourist/adventure "trip" may today seem increasingly finely drawn, this paper will seek to demonstrate the utility of indexing by expedition for the organization of Antarctic and historic Arctic materials. For such materials, the expedition provides an identifiable and meaningful unit during which research of various kinds is made possible by means of a shared logistical base. Ideally, expedition indexing should permit retrieval of all publications relating to, or resulting from, a particular expedition; but also of all relevant archives and artefacts. Carried out systematically, such indexing offers the possibility of creating Internet-based virtual archives and museums for each of the major expeditions.

In my two most recent presentations to the Polar Libraries Colloquy (Mills, 1997, 1999), I have spoken about the special opportunities presented by working in a research establishment, the Scott Polar Research Institute (SPRI), whose collections span a particularly wide variety of materials, ranging from publications, manuscripts, photographs, paintings, through to artefacts. Whilst it is a conjunction of materials that might sometimes be found in a museum, SPRI is perhaps unusual in that here it is the library rather than the museum which is the central facility, and thus bears special responsibility for linking the collections together. Indexing all materials wherever possible by expedition has traditionally been the main means chosen for doing this.

The Shorter Oxford English Dictionary defines an expedition as "A sending or setting forth for some definite purpose; esp. a warlike enterprise". This usage dates from Middle English (c1150-1350). That the term's origin should be essentially military should come as no surprise and indeed is not inappropriate given the prominent role taken by the armed forces of many countries in launching expeditions and the consequent influence upon them of prevailing military practice. What legitimately should count as 'an expedition' today arouses some controversy with some seeking to distinguish between 'real' expeditions, whose aims may include the scientific and offer prospects of doing something new, and those to be classed as 'adventure travel', 'trips' or simply 'tourism'. The perspective on this may differ nationally. Thus, in the United Kingdom, a visit to northern Canada for example, particularly if venturing beyond the reach of orthodox means of transport and involving some hardship, certainly appears legitimately termed an expedition, whilst to Canadians such trips may seem routine and unworthy of such designation. In this paper, I shall seek to circumvent this debate by concentrating primarily on the Antarctic, though with some reference to the High Arctic, and my focus will be on the utility of 'expeditions' as a means of unifying a variety of materials generated by, or relating to, a specific expeditionary undertaking.

The issues involved may be made clearer by considering one particular expedition and here we take as our example the famous Imperial Trans-Antarctic Expedition of Sir Ernest Shackleton. The story of this expedition is well-known. With the South Pole reached by both Amundsen and Scott, Shackleton's aim was to cross from one side of Antarctica to the other via the South Pole. His expedition was therefore divided into two parties, one sailing with him in

the *Endurance* to the Weddell Sea, where a landing was to be effected close to Filchner's landing in 1912 and the other, under the command of AE Mackintosh, sailing in the *Aurora* to the Ross Sea. The Ross Sea Party was then to lay depots across the Ross Ice Shelf to provision a crossing group, led by Shackleton, as it made its way to the coast after reaching the South Pole. The method of organization was essentially identical to that later successfully employed by Sir Vivian Fuchs, in his first crossing of Antarctica in 1955-58, but Shackleton's fate was to be otherwise as numerous books and, soon, National Geographic, Hollywood and UKTV films, will remind us.

Because of its fate, this expedition did not generate a vast quantity of archives or artefacts but much of what there is may be found at SPRI. What could be brought back from Shackleton's ship *Endurance*, in particular, suffered a successive winnowing process, with items abandoned first on the ship, then on the ice and then at Elephant Island. In the circumstances, it is amazing what was recovered including indeed the jack staff spar from *Endurance*. This last has only recently reached the Institute and from an unlikely source - the Head Gardener of St. Johns College - after being brought back at the last moment from Elephant Island by James Wordie, Head of Scientific Staff, where it had served as the distress signal flag pole, and before that as the mast of *Dudley Docker*, one of the three small boats in which the party made their way from their camp on an ice floe. Thus at the Institute, in relation to materials directly deriving from just this one expedition, we have manuscripts (diaries, correspondence, maps, etc.), artefacts (jack staff, chronometers, etc.), and illustrative material (photographs including Hurley's own album, paintings by George Marston, and a model of *Endurance* made by Walter How). This material is more disparate than particularly extensive. Secondary materials, relating to the expedition rather than directly produced by it, are very much more substantial and growing at a currently rapid rate. These chiefly consist of published literature (books, academic journal, magazine and newspaper articles, and exhibition catalogues), but also now of film and videos including the projects mentioned above. The enthusiasm for all things Shackletonian was sparked off by an exhibition at the American Museum of Natural History (New York) and has now become something of a world-wide cultural phenomenon. The Institute is not the least beneficiary of this widespread interest, and it clearly chose a propitious time to raise funds for the building of a major library extension, the Shackleton Memorial Library. Indeed, the initiatives described later in this paper form part of 'The Shackleton Initiative', the central objective of which is to improve access by all possible means to the Institute's unrivalled holdings.

All materials held by the Institute are classified using the Universal Decimal Classification (UDC) system. Although today primarily familiar through its use in libraries, its originators ambitiously intended to provide an indexing system capable of application to all subjects and all types of material. For example, when I arrived at the Institute some eleven years ago, I found that even the correspondence files in my office use were organized by UDC, though the system had progressively broken down as successive librarians found it too complicated to apply (a frequent criticism of UDC, incidentally). For 'expeditions' , UDC supplies the number 91(08) and 91(091) for 'history of exploration'. Both are intensively used with 91(08) additionally being combined with dates of setting out and return together with the name of the expedition leader, or, less commonly, the expedition's official title if leadership is shared or in some other way not easily specified. Thus, for our present example, we have '91(08)[1914-17 Shackleton]' as the code used to identify all items relating in any way to this expedition.

The **Index to Antarctic Expeditions** (*http://www.spri.cam.ac.uk/lib/Antexped.htm*) is a new facility recently made available on the SPRI website. Through this index, for all major Antarctic expeditions, one-touch access is provided to a good summary of the expedition's aims and achievements (assuming one is available

on the Internet), a comprehensive bibliography of publications about or generated by each expedition, and a list of all photographs held in the extensive collections of the SPRI Picture Library (see Figure 1). For Shackleton, three entries are provided with one for each of his expeditions. In each case, the summaries are those posted on the *Antarctic Philatelic* site (*http://www.south-pole.com*), whilst clicking on 'Related literature' and 'Photographs in SPRI' runs rapid searches of the *SPRILIB Antarctica* (*http://www.spri.cam.ac.uk/lib/spriant.htm*) and *Polar Pictures* (*http://www.spri.cam.ac.uk/lib/spripic.htm*) databases, each of which is also available for separate searching (i.e. not through the *Index*). The *Index to Antarctic Expeditions* is still at an early stage in its development and we plan eventually to extend it to manuscripts, artefacts, and biographical profiles of expedition members (see Mills, 1999). Having done this for the Antarctic, we should clearly do the same for the Arctic also for which our collections are at least equally large.

Progress in these ambitious projects will however depend on our success in attracting funding. Thus, the listing of the photographic collection is thanks entirely to the generous support of the Gladys Krieble Delmas Foundation, a grant from which enabled us to set up the Picture Library database *Polar Pictures*. A start is shortly to be made on the Museum's collections of artefacts and paintings funded by the United Kingdom Antarctic Heritage Trust.

Alongside the *Index to Antarctic Expeditions* has been posted the *Index to Antarctic Programmes*. This index functions in an essentially similar manner to the former but with entries for each country maintaining an active scientific programme in Antarctica (see Figure 2) rather than each expedition. Here one-touch access is provided to the websites of the national operating agencies, whilst clicking on 'Related literature' and 'Photographs in SPRI' runs rapid searches of the *SPRILIB Antarctica* and *Polar Pictures* databases, as for the Expeditions Index. Again, the means of making this possible is provided by expedition indexing with each national programme indexed as a continuing expeditionary effort. Thus, material relating to the Australian Antarctic programme is indexed '91(08)[1947- Australian National Antarctic Research Expeditions]', and all material about or generated by this programme is so indexed.

Clearly, the *Index to Antarctic Programmes* is intended to provide a facility of use to contemporary scientists and programme administrators, and in particular may serve to save scarce funds which might otherwise be spent in compiling specially commissioned bibliographies. However, by providing a much needed service to the national programmes, the Index is also intended to ensure that these programmes supply the Institute Library with all copies of their publications, especially those published in only small quantities. It is thus from the perspective of SPRI, as much a tool for assisting acquisition of materials as a research facility.

This leads me to the final project which I wish to describe today, the *Antarctic Virtual Museum*, another project only made possible by expedition indexing. The concept was originated by David Yelverton, a Friend of the Scott Polar, and the author of *Antarctica Unveiled*, a book to be published later this year embodying a mass of original research on Scott's first Antarctic expedition. David's idea was that whilst it would seldom if ever be practicable to bring together large collections of materials surviving from the 'Heroic Age' expeditions of the last decade of the nineteenth and the first two decades of the twentieth centuries, new technology does make this at least a 'virtual' possibility on the Internet. This is the project for which the UK Antarctic Heritage Trust has provided pump-priming funding, one spin-off of which will be the possibility - referred to above - of extending the *Index to Antarctic Expeditions* to the Institute's collections of artefacts. The *Antarctic Virtual Museum* will begin with the photography and digital display on the Internet of the Institute's own collections. Collaboration will then be sought with

other organizations and individuals holding relevant materials, which will then be similarly displayed so as to be retrievable not only by expedition but also by subject, geographic and biographical terms. Thus, in time, it should be possible to display a range of primus stoves, for example, taken south on Antarctic expeditions, or all surviving artefacts associated with a specific individual, or, of course, all materials deriving from one particular expedition.

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Mills, W.J. 1999. "SPRILIB Multimedia: New Databases at the Scott Polar Research Institute." J Markham, AL Duda and M Andrews, (editors), *Electronic Information and Publications: Looking to the Electronic future, Let's Not Forget the Archival Past. Proceedings of the 17th Polar Libraries Colloquy* Fort Pierce, FL: IAMSLIC, 1999, 167-90.

Figure 1. Twentieth Century Expeditions.

Expedition	Summary	Related Literature	Photographs in SPRI
1901-03 German Antarctic Expedition (Leader E von Drygalski	√	√	
1901-04 Swedish Antarctic Expedition (Leader NOG Nordenskjold)	√	√	√
1901-04 British Antarctic Expedition (Leader RF Scott)	√	√	√
1902-04 Scottish National Antarctic Expedition (Leader W Bruce)	√	√	√
1902-04 British Relief Expedition *(Morning)*		√	√
1903-04 British Relief Expedition *(Terra Nova)*		√	√
1903-05 French Antarctic Expedition (Leader J-B Charcot)	√	√	√
1907-09 British Antarctic Expedition (Leader EH Shackleton)	√	√	√
1908-10 French Antarctic Expedition (Leader J-B Charcot)	√	√	√
1910-12 Norwegian Antarctic Expedition (Leader R Amundsen)	√	√	√
1910-12 Japanese Antarctic Expedition (Leader N Sharise)	√	√	√
1910-13 British Antarctic Expedition (Leader RF Scott)	√	√	√
1911-12 German Antarctic Expedition (Leader W Filchner)	√	√	√
1911-14 Australasian Antarctic Expedition (Leader D Mawson	√	√	√
1914-17 Imperial Transarctic Expedition (Leader EH Shackleton)	√	√	√

Figure 2. Index to Antarctic Programmes

Country	National Operating Agency Web Page	Related Literature	Photographs in SPRI
Argentina	√	√	√
Australia	√	√	
Belgium	√	√	
Brazil	√	√	
Bulgaria	√	√	
Canada	√	√	
Chile	√	√	√
China (People's Republic)		√	
Czech Republic		√	
Ecuador		√	
Finland	√	√	
France	√	√	√
Germany	√	√	
German Democratic Republic (1959-89)		√	
Great Britain	√	√	√
India		√	
Italy	√	√	
Japan	√	√	√

A New Home for the Hudson's Bay Company Archives Records: Lessons Learned in Vault Design, Construction and Operation

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Introduction:
Over the past 15 years, Conservators at the Provincial Archives of Manitoba have been involved in several construction or renovation projects. Today, we will look mainly on our involvement in the Hudson's Bay Company Archives (HBCA) Storage Vault Expansion and Renovation Project, the lessons we've learned in vault design, construction and how we'd apply these lessons to new projects as they arise.

Some background on HBCA holdings:
The HBCA was transferred from the Company's headquarters in London to the Provincial Archives in 1974. In 1994, the Company made a gift of the Archives to the Province and provided funds to build new storage vaults. Planning on the HBCA Storage Vaults Expansion and Renovation Project began in 1994; the construction phase was more or less complete by November 1998. These vaults have the capacity to house nearly 5 linear Km of records in a redeveloped area within the Manitoba Archives Building.

Construction Renovation:
It is probably safe to say that most conservators, librarians and archivists have limited involvement in construction projects. The Canadian Council of Archives 1995 publication, *Conservation Environment Guidelines for Libraries and Archives*, by William Lull, identifies five stages in a construction or renovation project (I. Planning and the Design Program, II. The Design Process, III. The Construction Process, IV. Occupancy, V. Operation and Maintenance). Historically, conservators may have been asked to provide only environmental parameters for Stage I and possibly to review a confusing stack of drawings and specifications at the end of Stage II, just before the construction process starts. Where there is no conservator on staff, librarians and archivists may be called upon for these reviews. Disaster response, or hopefully preparedness, may occur during Stage III. However, experience has shown that most of our time seems to be spent in Stage V - Operation and Maintenance - struggling with environmental, security and storage systems which may not work to expectations. We have found it critical to be involved in the earliest stages to head off problems in long-term operation and maintenance.

Design:
There is an assumption that an archives is simply a warehouse; while this may be true is some cases, we required state-of-the-art storage for records of significant artifactual value. The design requirements that the architect must meet are detailed in a functional program, which is written before the architect is hired, or shortly after the architect begins work on the project. As we have become involved in more construction projects, we have increased the scope and detail of the preservation-related requirements in the functional program. I will discuss some specific examples shortly.

A project architect can be selected on the basis of previous experience, or through a competition. However, in Winnipeg - a relatively small centre - architects have not had extensive experience in museum or archives design, so in choosing one, we considered their success in designing facilities with specialized detailing requirements, such as hospitals or food processing plants, to be a significant asset.

Conservation staff were members of the project Design Team and involved in every meeting and discussion whether there was an obvious conservation issue or not. For instance, we analysed the detailing under doorways, and choice of lighting fixtures and floor coverings to ensure that these aspects of the design served the preservation function of the facility. We discussed the required end result and its importance so the architects and engineers could develop an understanding of what range of options might be reasonable for us. The input of our Facility Manager, the person ultimately responsible for the maintenance of the building systems and equipment, provided valuable and practical insights into long-term performance issues.

The Design Team met weekly for two months to work out basic layout, sizes and placement of rooms. The resulting Preliminary designs included plans of all floors with basic plumbing, security layout, heating, ventilation and air-conditioning equipment, division of space for public and collections, and a preliminary description of construction materials. A cost estimate based on this information provided a clearer picture of what was possible within the project budgets.

Conservation Scientist Paul Marcon of the Canadian Conservation Institute (CCI) commented in detail on the Preliminary Designs and visited Winnipeg to meet with the design consultants. Paul also had input from his CCI colleagues for pest management, fire prevention, security and choice in construction materials.

Client Preparation

Armed with the statistic that 31% of museum fires begin during construction or renovation projects[1], we drew up guidelines for security during construction, with a strong emphasis on fire prevention, and updated our Disaster Response Plan in preparedness for the increased risk.

Information from the Canadian Conservation Institute was prepared in a table format, and included in the Specifications, in order to provide direction for choosing materials at the design and construction stages. The Contractor was required to provide Material Safety Data Sheets or other product information for our approval throughout the construction phase, and in several cases we did require substitutions of alternate materials.

We also drafted a document describing our requirements for satisfactory commissioning, based on technical information from the Northeast Document Conservation Centre and Public Works Canada. We required that the systems not only perform, but that they perform together to meet the specified criteria. Conservation requested a two-stage commissioning process to take into account Winnipeg's two temperature extremes, from +37°C to -37°C.

The end of the Design Development phase for the HBCA project brought us approximately 150 pages of specifications and about 30 pages of plans to review. We came up with 4 pages of items requiring clarification, correction or action.

Contract Documents:

The final set of documents, or contract documents, contain the full details of a project, from what kinds of paint are required, to how surfaces are to be prepared, to where the contractors can park their trailer. All the thousands of small details are tied up prior to the tendering of the documents.

Thorough internal review of the contract documents is vital, and there may be several hundred pages of information to review. On several projects we have found that details which had been agreed upon earlier may still be missing. Fortunately, since so much time had been spent in review and discussion in earlier stages, these oversights have been relatively small, and were caught early enough for changes to be made before the projects went to tender. Revisions can be added as addendums during the tendering stage, but once the contract is tendered almost every change will increase the price of the project and as these changes have not been planned in detail, there may be broader repercussions than anticipated.

We felt it was important for contractors to be aware that they are an integral part of the team. First contact with contractors bidding for tender was made at their site inspection meeting. We took a few minutes to introduce them to what an archives is, how preservation has been integrated into various aspects of the design, and how the quality of their work could influence the success or failure of the project. We said

we would be fussy with the quality of the work, and we were.

After the contract was awarded, there were weekly meetings between members of the design team, the general contractor and the subcontractors; the meetings were generally followed by a site tour.

One of the biggest lessons learned during construction is to never underestimate the importance of the contract documents. They are the Bible for the project. Contractors are paid to do what's called for in the documents – and no more. But sometimes they apply the same methods to every job regardless of what is actually called for, so don't assume that just because it's in the contract it's being done the way you want it to be done.

Project management, the co-ordination of the design and construction elements, timetables, money, and conflict resolution, can be carried out by the architect or independently. We have only worked with overburdened government project managers, so can't say if another scenario is more or less positive.

Once the bulk of work was completed and the General Contractor moved off site, the remaining work slowed to a crawl. They left the site in September, and the work was not complete enough and operating consistently enough to feel we could safely move in collections until Jan. This summer will show whether the dehumidification problems discovered last summer have been solved or not. Other projects, where the architect has show greater commitment and where the project manager has been more assertive, have gone much more smoothly.

Design Feature: Perimeter Zones:

Many of the most important features of the design were developed early on. A good example is the perimeter zones on both the interior and the exterior of the vaults. These zones facilitate cleaning, maintenance, and inspection. The Archives building landscaping has a similar role. A distance of at least two metres between the building and the vegetation improves security and reduces the risk of pest penetration.

The space between the building walls and the vault walls provides a buffer for a stable vault environment and another layer of security against humans and smaller pests. The presence of the sloping theatre floor and the former stage make it relatively easy to inspect the membrane on the underside of the vault.

The perimeter zone inside the vaults keeps the shelving away from the walls, keeps the records out of the path pests and water are most likely to follow, and provides a clear corridor for motion detection.

The location of upper rows of lights in the zone between the vault walls and the walls of the outer structure does not permit easy access to the lights so scaffolding will be required to change tubes. We pointed out this problem early in the construction phase, but a more efficient resolution was postponed until any other alternative was impossible. Granted, the energy efficient, long-life tubes will require little service, but in future, we shall strive to be more vigilant about solving potential maintenance details while effective solutions are still possible.

The roof of the vault was to be accessible for inspection and maintenance, which it is, but with some difficulty. A catwalk, above the ceiling of the top level of the vault, doesn't provide complete access, and interference with the beams, joists and ceiling of the outer building necessitates crawling on hands and knees. Rubber mats were placed on the roof of the vault to permit access to all lights and sprinkler heads and to protect the membrane. Next time we would specify that fixtures requiring regular maintenance, such as smoke detectors, sprinklers and lights, are placed so that they can accessed easily and safely.

Construction Issue: On Site Security:

We decided we needed on-site security to control access to other areas of the building, and to monitor compliance with our on-site rules and safety requirements. While there were no really major security problems, this is an area that did not work as well as we had hoped. The guards were contracted for this project though another branch of government and in spite of our efforts at the management level, there seemed to be little understanding from the individual guards that our needs extended beyond access control. Random checks by our staff indicated that the quality of service varied greatly between individual guards. Workers were observed smoking and eating on site,

doors were found open after hours, and hot quartz lights were left on at night.

Next time we would a draft job description for security guards with responsibilities, procedures, and a reporting structure clearly outlined well in advance. We would expect guards to be familiar with our "rules", to enforce them and to report violations directly to us, with a copy to their usual supervisors.

Next time we would also outline our requirements for confining all food and beverages to one frequently cleaned area as part of the specifications. A copy of all unusual requirements in an easy to read and duplicate format would be sent to the general contractor for distribution to the subcontractors and for posting on site.

Design, Occupancy, Operation and Maintenance Issue:

A/V Barrier:

Problems can manifest themselves in several ways: Staff suddenly had difficulty opening one of the vault doors. The security consultant reviewed the situation and suggested the door installation was faulty. The general contractor and architectural consultant inspected the door and found it to be fine. They suggested excessive air pressure inside the vault was preventing the door from shutting properly. Around the same time the black bituthene air/vapour barrier membrane on the outside of the vault started to balloon out in places, the vault RH was too high and design team interpretation of environmental data suggested vault conditions were being affected by outside weather conditions. We were surprised, because results of dozens of local and overall pressure tests and an initial test and balance of the air systems suggested the vault was well sealed and the air supplied by fans was being distributed to vault spaces in the quantities and proportions specified in the design. These seemingly unrelated incidents and conditions were all symptoms of the same problem: uncontrolled air was entering the vault

The bubbles in the membrane were repaired but came back because the underlying air pressure problems had not been solved. After we complained about the high relative humidity for a whole summer, the consultant ordered an investigation of the problem by a third party engineering consultant. The major problem he found was that uncontrolled air was getting into the vaults through openings in the return air ducts and around the seals of the air conditioning units shown in the slide on the right. He also found problems with the way the dehumidifiers had been set up. Based on his recommendations, the ducts and air conditioning units were sealed up, and the air systems were re-balanced to bring pressures inside the vault down to the "near neutral" air pressure conditions specified by the mechanical consultant. Next time, we would have an independent balancing contractor verify results of the specified test and air balance report immediately upon its completion.

Commissioning:

Complete commissioning requirements were never included in the Specification, but our project manager decided to hire the mechanical and electrical consultants to prepare commissioning documentation (i.e. equipment checklists, installation forms, and performance verification forms) and to oversee the commissioning process based on our draft requirements. Initially, they seemed willing to take on the task, but after being awarded the contract - the details of which we never saw - they took the better part of a year to prepare the documentation and for the process to get underway.

Commissioning process began in May '99 with the electrical system. The Commissioning team, consisting of the electrical engineer, government and contract electricians, facility manager, and one of us, used a variety of visual and diagnostic tests to verify whether equipment and systems had been installed properly and were operating as intended. The team referred to the most up-to-date as-built drawings and Operation & Maintenance manuals. After only a few days of testing, several problems were discovered, including a fault in the fire alarm system, and the failure of the cold vault control panel to retain its program during a power shutdown.

We brought all problems forward to the design team and the contractor to be resolved, which was not always as effective as we had hoped. For example, the architect argued problems found during commissioning lay outside of his responsibility and

initially, he was reluctant to move on requirements for corrective action. We argued that the commissioning team had merely identified existing problems, and that it found them within the warranty period.

The commissioning of the mechanical systems is on hold pending verification that the dehumidification systems are meeting the requirements of the base contract. Many problems found were repaired during routine operation; the majority of the mechanical systems have been operating reasonably well now for almost two years. What really remains to be seen in our opinion, is whether re-balancing of air systems and sealing up of the duct work and the air conditioners have solved the high humidity problem. If so, we would be satisfied that all systems have been commissioned, if only informally.

Next time we will incorporate criteria for successful commissioning directly into the contract documents. That way, problems found will be corrected in a timely fashion, because the contractor will still be on site.

Construction/Occupancy Issue:

Inspection by Clients:

We toured the site often to keep up on progress, to observe if specified procedures were being followed, and to identify potential problems early for fast resolution. Problems we found ranged from finishing details to equipment set-up problems. The facility manager often joined us to look at things from an operations and maintenance perspective. Whenever we thought we had discovered a problem, we referred to the contract documents for guidance, or drew upon our background knowledge of HVAC systems and our past experience on construction projects. In defence of the consultants and contractor, some of the problems identified lay in a grey area or were outside of the documents. Prior to what is termed "Substantial Completion," many concerns were dealt with relatively quickly, but after substantial completion, progress on correction of deficiencies slowed to a crawl.

One of the problems we discovered was that some of the shelves were bowing under the weight of their loads. The shelving contractor, it turned out, had supplied us with shelving capable of supporting 65 Kg/M instead of the specified 135 Kg/M. The shelves were all eventually replaced at the contractor's cost.

Design Tool :

CCI's "Framework for the Preservation of Museum Collection":

We were already using the CCI's *Framework for the Preservation of Museum Collections* as a teaching and preservation management tool, but one of the CCI staff introduced us to using it as a tool for evaluating the project design. This chart is an excellent tool for ensuring that all "Agents of Deterioration" have been considered, and that suitable and effective control methods have been integrated into the design. The Agents of deterioration are listed in order of decreasing impact so it is clear where resources should be directed for maximum impact. For example, anti-theft measures and fire detection and suppression are more important than close control of temperature and relative humidity. Fire is more detrimental than water, so a sprinkler system is a good choice.

Summary/Conclusion:

Until relatively recently, a conservator's involvement in renovation projects was usually limited to providing set points and packing the collections. The archival, library and conservation professions have also increased their understanding of the construction details necessary for a well-built facility as seen by the growth of related research and literature. The more we know and understand the process, the better we can preserve our collections.

The nature of a construction project demands that as a plan becomes more developed, it becomes harder to make changes. Therefore, the earlier that knowledgeable conservators, archivists or librarians become involved in the process, the easier it is to avoid problems and effect positive change. Our experience so far suggests that to increase the chances for the success of a construction project, it is important:

- To take a pro-active approach by getting involved early and staying involved throughout the process
- To consider preservation in all parts of the project.

- To get "expert" opinions - not just from research facilities like CCI, but also from facility managers and other staff To state the design requirements clearly in the functional program
- To review all construction-related documents as they are developing to head off problems early, and perhaps most importantly
- To dedicate appropriate human resources to the project.

Doing the work we have discussed demands a very sound knowledge of the preservation needs of your collections, your resources and the way your organization operates. It demands time - time to learn, research, review and follow up. It demands flexibility – to drop everything else to attend meetings or look at new documents – and a flexibility of mind to be open to learn a little more about how air moves though a building or what holds walls up. It demands an ability to balance or choose between conflicting priorities and the power to make rapid and binding decisions.

The construction or renovation of facilities for the use and storage of our collections is time consuming and can be frustrating, but the rewards will last for generations. We wish to thank the Design Team and all staff at the Provincial Archives of Manitoba for their support and efforts.

Notes:

1. Paul Baril, *Fire Prevention Programs for Museums*, CCI Technical Bulletin No. 18: Canadian Conservation Institute, 1997, 4.

Lapponica - Co-operation Between Libraries, Museums and Archives in Lapland

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Rovaniemi, Finland

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New Lapponica:
The Lapponica collection of the Regional Library of Lapland (Rovaniemi) is well known in the arctic area. During the last two years the EU-funded development project *Monet* has changed the collection so fundamentally that it can be called *new* Lapponica. In fact, it is no longer a special collection of one single library but a modern information system maintained by several institutions and comprised of several types of information resources. The main purpose is still the same: Lapponica is information on Lapland, Northern Scandinavia (North Calotte) and the Barents area. It gives free access for everyone interested.

Network-based working environment:
Some municipal libraries in Lapland established a consortium called *Aurora* in 1992. This group – now consists of 12 municipal libraries, the Rovaniemi Polytechnic Library and some museum libraries, and which maintains a joint library system accessible via Internet.

With the help of the *Monet* project, five museums in Lapland and the Arctic Centre of the University of Lapland were able to join the network, and Lapponica was extended to cover the collections of those institutes. Technically and administratively it is a decentralized system where every participant maintains its own database but the input model has been harmonized in order to make joint retrieval possible. The knowledge management system is based on Verity software and the metadata control on Dublin Core format.

Multimedia resources:
The *old* Lapponica consisted of library material only. It is still the main part of the system's resources, because the local collections of all Aurora libraries have been integrated into it. But in addition there are images from the museum collections. For the present, they are quite modest in number, because building the cataloguing and indexing system for the museums has been quite a labourious and time-consuming work. There are also some complex copyright problems to be solved.

The third type of material is research information principally maintained by the Arctic Centre which has two different databases integrated into Lapponica: *The Arctic Experts* and *The Arctic Institutions*. In the future, archive documents and other research data will be added into the system.

Co-operation across borders:
The most challenging part of the *Monet* project was to start a permanent co-operation between the libraries in Finland and Russia due to many technical and administrative problems. However, it succeeded, and now the Archangel Scientific Library follows ten magazines and newspapers published in Northwest Russia, gathers the main articles according to the profile defined by the Regional Library of Lapland and the Arctic Centre Information Service. Then the English summaries are compiled and sent to the Arctic Centre where they are indexed to Lapponica by Verity Spider software. The updating will be once a month.

***Per aspera ad astra*:**

Astra is the name of the information system for academic papers produced by two institutes in Lapland -- the Rovaniemi Polytechnic and the Vocational College of Western Lapland. The main area of emphasis of both institutes is the North, and materials dealing with this subject are produced as academic papers and project works. Traditionally these have been printed on paper, but during the last two years the institutions have developed an electronic printing system called *Astra*. It has been a demanding and instructive project, in which a joint electronic working environment has been created for students, teachers and librarians. The project will continue this year and when it is completed it will provide libraries with an opportunity to manage academic papers by means of an electronic archive.

Team of northern experts:

The *new* Lapponica includes a joint information service of the libraries and museums. During the last two years a new team has been trained including thirteen northern experts: librarians, information specialists, assistants and researchers. They have acquainted themselves with each other's information sources, approach to work and services. The Lapponica information service was started in April. The team is working in the libraries and museums, but the interactive Lapponica system provides expert assistance over the Internet as well.

The strength of this service is the multi-dimensional Northern expertise. The information service clients are those who need information about the North, the most important of these being the business sector, researchers, students and school pupils.

The address of Lapponica is *http://lapponica.rovaniemi.fi*

"Basking and Sporting in the Great Outdoors": Horace Kephart and the Ideal Life :

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Elmer E. Rasmuson Library
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Abstract

During the first three decades of the 20th Century, Horace Kephart (1862-1931) was a household name among those who read about camping, hunting, exploration, and wilderness wandering. His *Book of Camping and Woodcraft*, and his prolific magazine writing, helped shape the attitudes and skills of generations of campers. Kephart's meticulous research and cataloguing of outdoor lore and gear, rendered with his librarian's eye for detail, is still read and cited as authoritative, and his Romantic passion for the spiritual and physical renewal of "going to the woods" still appeals to modern readers. This paper will discuss Kephart's bibliographic record, his interest in "going light," his library career, and his vision of the "ideal life."

Introduction

In the history of the literature of camping and the outdoors, Horace Kephart's *Book of Camping and Woodcraft* holds an impressive position. *[Figure 1: Book of Camping and Woodcraft, 1906]* First published in 1906 and still in print, the book presents Kephart's view of camping as an art as well as a set of skills. By one accounting, the book ranks among the ten best-selling sporting books of all time. His major biographer notes that "Horace Kephart. . . was widely known as the 'Dean of American Campers.' This sobriquet was a richly deserved one, for no American contemporary possessed greater knowledge of and experience in the art of camping. Indeed, 'art of camping' is used advisedly, for to Kephart, life in the outdoors constituted a truly artistic endeavor. " (Casada 1988, [vii]).

Kephart and the kindred soul to whom he dedicated *Camping and Woodcraft*, George Washington Sears, called "Nessmuk" (1827-1890), refined the practice of camping and wilderness travel as it was lived, or endured, by the legendary Voyageurs, and the "iron men" of the Hudson's Bay Company and the Russian-American Company. They had a more Romantic view of Nature. The emphasis was on spiritual renewal and comfort as well as on survival. Comfort is vital—as is simplicity. "Only a tenderfoot will parade a scorn of comfort and a taste for useless hardships," he wrote. "As Nessmuk says: 'We do not go to the woods to rough it; we go to smoothe it—we get it rough enough in town. But let us live the simple, natural life in the woods, and leave all frills behind.' " (Kephart 1906, 6).

Kephart read widely and carefully, kept notebooks (Ellison 1976, xxiv), and generously cites other authors, both classical and popular, in his own work. (Unfortunately, he usually does so without bibliographic detail.) Similarly, he was and is often cited by others, and is still considered an authority by writers as diverse as Townsend Whelen and Bradford Angier (Whelen 1927, 279) (Whelen and Angier 1958, 12), and Bill Riviere in his *L. L. Bean Guide to the Outdoors*. (Riviere 1981, 37, 84). A 1999 title recently acquired by Rasmuson Library, *From a Wooden Canoe* by Jerry Dennis, cites Kephart on the use of tump lines for backpacks. (Dennis 1999, 88) He has influenced outdoor writers for four generations. Kephart's material was sometimes simply "adopted" by other writers without attribution.

The name Kephart is still evocative for many. Recently I asked a retired forestry professor if the name meant anything to him. Like others

asked this question, he got a faraway look in his eye and remembered that his father had a copy of Kephart. He added that when he was a university student in the 1950's, he took a course in outdoor recreation. He remembered the textbook: *Camping and Woodcraft*. That was half a century after it was first published. (Gasbarro 2000)

Another colleague, a professor of accounting information systems, told me that he kept a grip on his sanity while in graduate school by reading *Camping and Woodcraft* from cover to cover, over and over. (Lehman 2000)

Why would anyone still be interested in Kephart? We read him because the subject matter is still interesting—for example, the history of land exploration is, to a degree, the history of camping. Kephart is an engaging, sympathetic writer with an often elegant style, a love of detail, and a dry sense of humour. His work gives us a perspective on a bygone era of the outdoors, and a view of the evolution of outdoor equipment. And, of course, many read him simply to share his attractive vision of "the ideal life."

Nearly 70 years after his death, Kephart is still a mysterious figure. He was not especially forthcoming about himself, and not a great deal has been written about him, given his prominence in his day. The closest thing he wrote to an autobiography is a four-page article that appeared in the *North Carolina Library Bulletin*, in which he teasingly sketched his life with a few broad strokes, and ends the piece by writing, ". . . Much . . . has been left out. . . . The best stories are those that are never told." (Kephart 1922, 52)

Two masters' theses have been written about Kephart (Bowers 1996, Maxwell 1982), of which one includes an especially useful "Chronology of Horace Kephart's Life and Works." (Bowers 1996, 9-33) He has been the subject of several lengthy and insightful introductory pieces to republications of his books. (Casada 1988, Ellison 1976) During the last decade of his life, Kephart worked for the establishment of Great Smoky Mountains National Park, and he is discussed in several works dealing with the park (Frome 1980, McDade 1996, Farwell 1993), and in magazine and newspaper articles, many by his major biographer Jim Casada. Casada has indicated, in his introduction to the 1988 reprint of *Camping and Woodcraft*, that he is "currently at work on a full-scale biographical study of Kephart." (Casada 1988, ix).

Kephart The Man

Kephart was born in 1862 in Pennsylvania, of pioneer Swiss stock. The Civil War was raging. His father Isaiah served as a chaplain with the 21st Pennsylvania Cavalry. Like many veterans, after that war he wanted to get away, to start a new life. In those days, that meant going West, and West he went in 1867 with his wife Mary, and young Horace. They settled in Iowa, where, Kephart wrote, "It was before the day of fences, and for a year or so there was little to be seen from our front door but a sea of grass waving to the horizon." (Kephart 1922, 49)

Horace was an only child, and a lonely one, but he was lucky. He had an attentive mother who encouraged his imagination: "My mother taught me to read. When I was seven, and could read almost anything, she gave me my first book, dear old *Robinson Crusoe*. It has been saved through the vicissitudes of a somewhat venturesome life, and lies before me now, coverless and stained with age, but more precious than all the thousands of other books that I afterwards acquired." (Kephart 1922, 49) Can there have been a more auspicious title for suggesting this writer's future? Kephart was also fortunate in having the ability to entertain himself endlessly, and he had personal qualities of curiosity and a keen interest in the natural world. Being human, he had less endearing qualities (perhaps also the result of a lonely childhood) which revealed themselves in due course.

Kephart's family returned to Pennsylvania in 1876, and he graduated from Lebanon Valley College in 1879, "Not without misgivings on the part of the faculty as to my orthodoxy and sundry other qualifications," he wrote of his college experience. (Kephart 1922, 50)

Kephart had been interested in natural history from his boyhood on the Iowa prairies. He enrolled at Boston University as a graduate student to study science, and found himself enjoying "the blessed privilege of studying whatever I pleased in the Boston Public Library. The absolute academic freedom of the Library was such a relief to one who had suffered from set curriculums that I resolved to help others find it: I chose librarianship for a career." (Kephart 1922, 50) He applied for and got a job at the Cornell University Library, where he worked on the catalogue under the head librarian and noted Icelandophile, Willard Fiske. Thereafter, *The National Cyclopedia of American Biography* reports, "[He]. . . was for a short time in the library of Rutgers College, and afterwards in that of Yale University. In 1890 he accepted the position of [chief] librarian in the Mercantile Library, St. Louis." (NCAB 1892, 322)

Physically, Kephart was "A man of medium height and build, with quick decisive movements that bespoke muscular strength and coordination," wrote Clarence Miller, whom Kephart hired as an assistant at the St. Louis Mercantile Library. Miller was subsequently director after Kephart left the library in 1903. [Figure 2: Photograph of Horace Kephart] Miller noted that his dark eyes were animated and expressive, and that "His bristling black mustache seemed to me to contrast violently with his finely modeled features. . . He was neither introverted nor austere. " (Miller, C. 1959, 305) Kephart was a diligent worker. "He had no secretary, and spent most of his day beating a two-fingered tattoo on a Smith-Premier typewriter. He did his own research in the card catalogue, consulting it many times a day, and when he needed a book he got it himself. . . . Late in the afternoon he made his exit, always with a Boston bag gorged with books. A brief but friendly farewell to the assistant nearest him somehow inspired us all." (Miller, C. 1959, 306)

Kephart: The Bibliographic Record

Kephart had written for the library literature, mainly *Library Journal*, since 1887 about topics as diverse as bindings, ink, glue, cataloging, and professional ethics. He interspersed these with magazine articles about historical topics such as "The Rifle in Colonial Times" in the September 1890 *Magazine of American History*, and "The Birth of the American Army" in *Harpers Monthly* in May 1899.

Mostly, Kephart wrote, and prolifically so, for outdoor magazines. *Nineteenth Century Readers Guide to Periodical Literature* chronicles Kephart's early magazine writing activity, and indexes the two articles noted above in the 1890-1899 volume. With the new century Kephart's activity picks up. While *Readers Guide to Periodical Literature* does not index all of Kephart's article writing, *Readers Guide* from 1900 through 1924 indexed 41 Kephart articles on such topics as camping, guns and shooting, hunting, woodcraft, cookery, wild bees, one called "Month in the woods for $30," caving, emergency rations, "Featherweight camping in England," camp bedding, building a log cabin, outfitting and clothing, tents, winter camping, and fishing. The 1910-14 volume shows the most articles, with 13. Most of these were published in *Outing Magazine*.

The 1919-1921 *Readers Guide* included the appearance of two articles on the people of the Appalachian Mountains (where he had lived from 1904), which interest he had developed with the earlier publication of the other book for which he is best known, *Our Southern Highlanders: a narrative of adventure in the southern Appalachians and a study of life among the mountaineers*, first published in 1913 and re-published in 1976. In 1926 he published an article called "Last of the Eastern Wilderness," which reflected his work toward establishment of Great Smoky Mountains National Park.

His last magazine article was published in August 1930, in *Ladies Home Journal*, called "Roadside Cookery." The *Readers Guide* brings its Kephart listings to a close with an entry for brief obituaries, published in the *New York Times* on April 3, 1931, and in *Publishers Weekly* on April 18, 1931.

In addition to magazine article writing, Kephart was also busy editing and writing books

and shorter works. An author search in OCLC *WorldCat* returns 42 bibliographic records for Horace Kephart. For example, he edited Elisha Kent Kane's *Adrift in the Arctic Ice Pack, from the history of the first U.S. Grinnell expedition in search of Sir John Franklin*, first published in 1915, which also enjoyed further editions during that heyday of public interest in exploration. [Figure 3: *Adrift in the Arctic Ice Pack*] *WorldCat* shows nine records for *Adrift in the Arctic Ice...*, which was initially published as part of the "Outing Adventure Library." In this series he edited books on exploration, adventure, and history, including John Wesley Powell's *First Through the Grand Canyon*, a California gold-miner's journal, and lion-hunting in Africa.

He wrote or edited books about Indian captives, about the Cherokees of the Smoky Mountains, about the history of the rifle in North America, about hunting, and about survivors of shipwreck, among other topics. And although declaring that "I was not born a cook, nor do I like to cook. . . . ," (Kephart 1906, p. 118) he also wrote extensively about cooking. In fact, the chapter on camp cookery in the 1906 edition is by far the longest in the book, running to 51 pages. By the 1917 edition, he's up to 131 pages dealing with cookery. It sounds as if he were driven as usual by practical need, for the 1906 chapter begins, "Home cooking is based upon milk, butter, and eggs: nine-tenths of the recipes in a standard cook-book call for one or more of these ingredients. But it often happens to us campers that our 'tin cow' has gone dry, our butter was finished long ago, and as for eggs—we have heard of eggs, but for us they do not exist. In such case, no ordinary cook-book is of any use to us. . . ."(Kephart 1906, 114)

Kephart the Gear-Head

Kephart was what we would today call a "serious gearhead." Then as now, the right equipment is important to survival and comfort in camp. "The art of going 'light but right' is hard to learn," Kephart wrote. "I never knew a camper who did not burden himself, at first, with a lot of kickshaws that he did not need in the woods; nor one who, if he learned anything, did not soon begin to weed them out; nor even a veteran who ever quite attained his own ideal of lightness and serviceability." (Kephart 1906, 6)

Among ardent go-light wilderness wayfarers and writers, the thread is clear from before Nessmuk through Kephart to, for example, Colin Fletcher and his well-known series of *Complete Walker* books published since 1969. (Fletcher 1984) These writers carry on the tradition of feather light travel, weighing each article carried to the ounce, almost as a mania. Dr. Frederick A. Cook was of the same school. Writing of his 1906 Mt. McKinley expedition, he noted proudly, "To meet the need of reduced weights and increased efficiency I had invented a new silk tent which weighed but three pounds, was large enough for three men, and required no pole." (Cook 1909, 192) Kephart mentions Cook's tent in his 1906 edition. Referring to "Dr. Frederick A. Cook, the antarctic explorer," Kephart writes, "The tent to which he refers, is one of his own design, a very light affair to be used in arctic work." (Kephart 1906, 41)

Kephart gave the British credit for first developing lightweight equipment. In a chapter of *Camping and Woodcraft* he called "Trips Afoot," Kephart discusses the development of lightweight equipment ("kit"). "Back of [the development of lightweight equipment], I learned, were years of patient, thoroughgoing experiment by scores of men and women whose one fad (if it be a fad) was to perfect a camping kit that should be light, lighter, lightest, and yet right, righter, rightest. Then it came to me from faraway years that the father of modern lightweight camping was not the Yankee "'Nessmuk,' but the Scotchman Macgregor, who in 1865, built the first modern canoe, Rob Roy, and cruised her a thousand miles with no baggage but a black bag one foot square and six inches deep. It was said of Macgregor that he would not willingly give even a fly deck passage." (Kephart 1917, Vol II, 109) The quest for light, lighter, lightest never ceases.

In the realm of food and nutrition, Kephart had applied his usual wide reading and research to a

topic that is still very much of interest to campers and explorers. In a chapter in the 1917 edition called "Concentrated Foods," Kephart discusses in detail the current knowledge about food values and suitability for the outdoors. He cites Sir Ernest Shackleton, for example, on the value of sugar as an outdoor ration (Kephart 1917, 169) and he includes all the usual Kephart tables and lists. Fletcher provides similar lists, updated to current science. (Fletcher 1984, 184-5)

Kephart's lists in *Camping and Woodcraft* are still considered useful by outdoors folk, which now includes the survivalists. His basic list of go-with items for the woods is even included on the survival-centre.com webpage, with an enthusiastic book review which concludes, "If there was book [sic] I would want to have for LONG-TERM (2+years) wilderness survival, this would be it!" [Figure 4: survival-centre.com webpage, 9/29/99] Similarly, Kephart's lists crop up in Internet discussion groups. (*www.netside.com,* posted 10/16/96)

Kephart the Romantic

Behind this gear-head absorption with the outdoors, there was in Kephart, as in other writers of his tradition, a grand passion for the spiritual and restorative powers of Nature. Kephart had a particularly Romantic bent. The 1906 edition opens with Longfellow's famous "This is the forest primeval. The murmuring pines and hemlock. . . " stanza from "Evangeline" on the front flyleaf.

The first chapter of the 1917 edition, called "Vacation Time," sets Kephart's stage as he calls out to all the beleaguered and stressed-out among us (once we get beyond Kephart's persistent use of the masculine pronoun) as it begins, "To many a city man there comes a time when the great town wearies him. He hates its sights and smells and clangor. Every duty is a task and every caller is a bore. There come visions of green fields and far-rolling hills, of tall forests and cool, swift-flowing streams. He yearns for the thrill of the chase, for the keen-eyed silent stalking; or, rod in in hand, he would seek that mysterious pool where the father of all trout lurks for his lure." (Kephart 1917 Vol. I, 17)

Other writers were a fraction less restrained on the subject than Kephart. Ernest Thompson Seton, another well-known writer of the day, wrote floridly in his Foreword to Warren Miller's 1922 *Camp Craft,* "The benefits [of camping] are beyond question—all the glorious purification of sunlight, the upbuild of exercise with the zest of pleasure, the balm of fresh air at night, the blessedness of sleep, the nerve rest, and change of daily life." (Miller, W., 1922, viii)

This spirit was put more succinctly by Townsend Whelen and Bradford Angier: "We all need the tonic of wildness." (Whelen & Angier 1958, 3)

On the other hand, Fletcher quotes George Santayana, "The longing to be primitive is a disease of culture." (Fletcher 1984, 633).

Kephart also had the good fortune to live and write in a time of keen interest in the outdoor life when, following an economic depression for several years after 1893, people began to have a little money, and a little leisure. The Kodak Brownie, the camera which popularized photograhy, was introduced in 1900, and the 1906 edition of *Camping and Woodcraft* was illustrated with photographs. Henry Ford's Model T appeared in 1908, and Ford's introduction of assembly lines in 1914 made the car cheaper. The automobile allowed interested people to reach forests and parks. In 1872 Congress approved creation of Yellowstone as the first US national park, and the Canadian national park system began in 1885. Theodore Roosevelt became president in 1901, and the US park system grew rapidly under this conservationist White House. The first occurrence in *Reader's Guide* of a magazine article on camping which mentioned automobiles in the title was in April 1905.

The growing number of magazine articles on camping and related topics during Kephart's lifetime reflected the growing interest in the outdoors. *Poole's Index to Periodical Literature* shows the growing rate of publication of articles under subject headings dealing with camping:

1802-1881: 2 articles
1882-1887: 2 articles
1887-1892: 4 articles
1892-1896: 5 articles (subject heading "Camp Cookery" appears for the first time)
1897-1901: 11 articles
1902-1906: 19 articles, including "Outing with an automobile" and "Art of camping: a woman's view"

Readers Guide to Periodical Literature shows the growth, and apparent subsequent decline after 1921, of popular interest in camping:

1900-1904: 27 articles (7/year)
1905-1909: 104 articles (21/year)
1910-1914: 114 articles (23/year)
1915-1918: 68 articles (17/year)
1919-1921: 55 articles (18/year)
1922-1924: 34 articles (11/year)
1925-1928: 36 articles (9/year)
1929-6/1932: 27 articles (8/year)

Kephart the Librarian

Kephart came by his meticulous cataloguing of outdoor lore honestly, for he was a cataloger by profession, a recognized figure in American librarianship, and a regular contributor to *Library Journal*. *The National Cyclopedia of American Biography* reports that "as a classifier of books, he is unequaled." (NCAB 1892, 322)

Clarence Miller reports that Kephart served as president of the North Carolina Library Association (Miller, C., 1959, 308) and of the North Carolina State Literary and Historical Association (Miller, C., 1959, 309). Ironically, these posts were after he had left the profession.

A competent and conscientious cataloger, he was happy with his first library job at Cornell University for a time. However, as sometimes happens, difficulties with university administration became a source of dissatisfaction, first for his boss, Willard Fiske, and then for Horace. The result was that Fiske left the university, having that luxury because he was a wealthy widower, to pursue his hobby of collecting Italian Renaissance works, especially Plutarch. The best place to do this was Italy. Meanwhile Kephart also became disenchanted with the university administration, being of the firm opinion that he was underpaid, a situation with which many of us today can empathize. Kephart had the option to leave because Fiske had invited him to Italy to help him with his collecting. Kephart spent 1884-86 in Italy, buying and cataloguing books for Fiske, educating himself in a variety of subjects, for which he first learned Italian.

Before he left Cornell, he and Miss Laura White Mack had announced their engagement. The conviction that he was not making enough money to support a family at Cornell likely encouraged him to accept Fisk's invitation to Italy. In Italy he found, not surprisingly, that he missed her, perhaps more than he had anticipated. In 1886 he returned to the U.S.and took a job first in temporary position at Princeton University Library, where he worked on the catalog, then a permanent position at Yale. He and Laura, but for whom he might still have been broadening himself in Italy, were married in 1887. They settled down in New Haven where his spare time was given to "historical research, chiefly along the line of American frontier history, and I began writing a little for magazines." (Kephart 1922, 51) He continued his interest in languages, in this case in Finnish, by learning Swedish so that he could read the only text available on the Finnish language.

In 1890, following an offer made to him at the American Library Association conference, Kephart accepted a job as director of the St. Louis Mercantile Library, the largest library in the Mississippi Valley. Following his ambition to build a major library collection of western Americana, and became an assiduous collection developer. "Here," he reports, "I built up a special collection of western Americana, a subject that fortunately had not yet attracted the interest and competition of wealthy book buyers." (Kephart 1922, 51) His legacy is remembered. The associate librarian noted in 1993 that "[Kephart] certainly left his mark on the Americana collections at the Mercantile

Library," and that moreover, "he was indeed a man of fascinating talents." (Hoover 1993)

Meanwhile, back at home, the Kephart house was filling with children. By 1898 he and Laura had six, two sons and four daughters. It is possible that with a house full of active youngsters, Horace no longer felt the tranquillity he sought with a home life. He wrote to Fiske that he had begun to feel hemmed in. He also wrote that about this time he began to feel the effects of arthritis. According to a one account of his situation and his character, "He could not stand confinement or the responsibility of raising a family. He was too self-centered, too difficult to live with, poring over maps and dreaming of the frontier." (Frome 1980, 149) However, as everyone knows, there's often another side to domestic trouble. Kephart is reported to have told one of his North Carolina friends, after he had moved there from St. Louis, "She despised me to go on camping trips or to go shooting. She gave me hail-come for not wanting to go to hen-clubs." (Frome 1980, 149) Perhaps Laura wanted to enjoy the social life to which she felt her husband's position entitled them.

It is from this juncture in his life that dates a serious problem with alcohol," writes Casada. (Casada 1988, xvii). While according to Clarence Miller Kephart did not neglect his library work, he began to spend more time in the woods and writing articles for the outdoor magazines. He also developed an active interest in target shooting which was very popular at that time, bought a rifle, and joined a local shooting club, where he became corresponding secretary. He wrote to Willard Fiske, his ex-boss at the Cornell library, about it: "This may not become me as a gentleman and a scholar, but it fills my lungs, steadies my nerves, and gives me an appetite to be proud of. The ability to plunk an 8-inch bull's-eye at 200 yards, off-hand, gives me what my master's degree does not—the consciousness that I would be good for something in a crisis." (Maxwell 1982, 12)

Kephart the Writer

In 1897 he published his last professional library article. "Henceforth he would increasingly turn his attention to writing on sporting topics, with camping, cooking, firearms, and woodcraft being his specialities. Indeed, life in the outdoors became a consuming passion, and his preoccupation with a lifestyle which lent itself to seclusion is certainly suggestive." (Casada 1988, xvii) Jim Casada points out that freelance writing henceforth would provide the bulk of Kephart's livelihood.

The board of directors of the St. Louis Mercantile Library, now disheartened with their director, asked him to leave his post late in 1903. This dramatic change had tremendous cost, for Laura and the children as well as for Horace. The family had no money at that point, and Laura left St. Louis for her family in Troy, New York, with the children in tow. In Spring 1904 he suffered a "complete nervous collapse." (Miller, C. 1959, 308). Kephart's father arrived from Ohio to take him home to recover, and he appeared to do so. A note had already appeared in December 1903 *Library Journal* noting that Kephart had resigned due to ill health, and that he "will devote himself to literary work that will enable him to travel and be out of doors." (*Library Journal* 28, Dec. 1903, 858. Quoted in Ellison 1976, xxv.) In May 1904 he asked *Library Journal* to note that he had "entirely recovered from his recent illness, newspaper reports of which were much exaggerated, and is now in good health and engaged in literary work." (*Library Journal* 29, May 1904, 270. Quoted in Ellison 1976, xxvi)

From this crisis in his life in Fall 1903-Spring 1904, a new Horace Kephart emerged. He determined to go to the woods for a time. "I love the wilderness," he wrote, "because there is no sham in it." (Casada 1988, xviii)

Kephart chronicles what happens next: "From the autumn of 1904 to the winter of 1906 I lived, most of the time, alone in a little cabin on the Carolina side of the Great Smoky Mountains, surrounded by one of the finest primeval forests in the world. My few neighbors were born backwoodsmen. " (Kephart 1917, Vol. II, 13)

Finding himself at loose ends in his cabin at night, "when supper would be over, and black night closed in on my hermitage, and the owls

began calling all the blue devils of the woods, one needed some indoor occupation to keep him in good cheer; and that is how I came to write my first little book on camping and woodcraft." (Kephart 1922, 52) He found refuge in study of the small and highly select library he had brought, and in pulling together the articles he had written on camping and the outdoor life.

In the Fall of 1906, after his solitary labours in his cabin, he published *The Book of Camping and Woodcraft: A Guidebook for Those Who Travel in the Wilderness*, and its convoluted publishing history begins. "The Outing Publishing Company first edition of *Camping and Woodcraft*," writes George Ellison, "was revised and expanded at least six times in this country and once in Great Britain. The same company published the greatly expanded two-volume edition 1916-17, which was reprinted by the Macmillan Company in 1921 in a two-volume format, and then by the same company to date [sic] in a format of two volumes in one. The 1972 Macmillan printing was noted as being number 'twenty-eight.' No other outdoors or sporting volume written by an American has enjoyed such acceptance and enduring popularity." (Ellison 1976, xxxiii-xxxiv.)

The book received a warm public and critical reception. Townsend Whelen, a well-known writer on hunting and firearms who spent a good deal of time hunting in Canada, wrote in his classic *Wilderness Hunting and Wildcraft: With Notes on the Habits and Life Histories of Big Game Animals*, "There is much in the science of Woodcraft not contained herein, which the hunter should be familiar with. Happily almost all of it is contained in a single most excellent and comprehensive work, *Camping and Woodcraft*, by Horace Kephart. . . . (Whelen 1927, 335) Whelen does observe 30 years afterwards that much of Kephart's advice on equipment, not surprisingly, had become dated. (Whelen & Angier 1958, 12)

Kephart's book, and the obvious market, encouraged others to write similar kinds of books, some of which were quite successful. Two in the University of Alaska Fairbanks library collection are *Camp Craft*, published in 1915 and reprinted 1916, with new editions in 1918, 1921, and 1922 (Miller 1922) and a later work, *Woodcraft and Camping*, published first in 1939 as *Woodcraft* and republished by Dover in 1974. (Mason 1939)

His book, Kephart tells us in the Foreword written in March 1906 at his father's home in Dayton, Ohio, "had its origin in a series of articles, under a similar title, that I contributed in 1904-6, to the magazine *Field and Stream*. The original chapters have been expanded, and new ones have been added.... Most of these pages were written in the wilderness, where there were abundant facilities for testing the value of suggestions that were outside my previous experience. In this connection I must acknowledge indebtedness to a scrap-book full of notes and clippings, the latter chiefly from old volumes of *Forest and Stream* and *Shooting and Fishing*, which was one of the most valued tomes in the rather select "library" that graced half a soap-box in one corner of my cabin." (Kephart 1906, xiv) The table of contents lists chapters on clothing, personal kits, tents, food, the campfire, marksmanship, camp cookery, getting lost, edible plants, axmanship, tanning pelts, and first aid. There is, alas, no index in this edition.

The 1917 edition, two volumes in one, which the University of Tennessee Press reprinted in 1988, includes, thankfully, extensive indexes to both Volume I (Camping) and Volume II (Woodcraft). The Table of Contents is considerably enhanced from the 1906 edition.

By this 1917 Macmillan edition, Kephart is on a roll, and understands the change in his audience. In the Preface, he writes, "The present work is based upon my *Book of Camping and Woodcraft*, which appeared in 1906.... My first book was intended as a pocket manual for those who travel where there are no roads and who perforce must go light. I took little thought of the fast-growing multitude who go to more accessible places and camp out just for the pleasure and healthfulness of open-air life." (Kephart 1917, Preface) In this edition Kephart is listed as author of *Our Southern Highlanders*, *The Book of Camping and Woodcraft*, *Sporting Firearms*, *Camp Cookery*, and *Camping*.

Kephart and His Ideal Life

Horace Kephart had found his ideal life, though from all accounts it was bittersweet with recurring memories of his old life, which he tried to hold at bay through sheer industry and on occasion through drinking. But the life he invented for himself became the ideal life of many people, including perhaps the odd modern-day librarian.

Kephart begins Chapter 1 ("Vacation Time") with an anthem of personal freedom (though some might consider it equally an anthem of irresponsibility):

> To be free, unbeholden, irresponsible for the nonce! Free to go or come at one's own sweet will, to tarry where he lists, to do this, or do that, or do nothing, as the humor veers, and for the hours, 'It shall be what o'clock I say it is!"
>
> "Thus basking and sporting in the great clean out-of-doors, one could, for the blessed interval,
> Forget six counties overhung with smoke,
> Forget the snorting steam and piston-stroke,
> Forget the spreading of the hideous town."
>
> This instinct for a free life in the open is as natural and wholesome as the gratification of hunger and thirst and love. It is Nature's recall to the simple mode of existence that she intended us for."
>
> "Our modern life in cities is an abrupt and violent change from what the race has been bred to these many thousands of years. We come from a line of forebears who, back to a far-distant past, were hunters in the forest, herdsmen on the plains, shepherds in the hills, tillers of the soil, or fishermen or sailors at sea; and however adaptive the human mind may be, these human bodies of ours still stubbornly insist on obeying the same laws that Father Adam's did." (Kephart 1917 Vol. 1, 17-18)

Horace Kephart died in 1931 at the age of 68, in the mountains of western North Carolina. His death was the result of an automobile accident which *The New York Times* described as a "moonlight sightseeing ride" but which is reputed to have been a visit to the bootlegger's. Killed with him was a friend and fellow writer, Fiswoode Tarleton. *The Times* further reported that at his funeral, "All the seats in the auditorium of the public school where the funeral was held were taken. Hundreds stood outside." (*The New York Times* 1931, Apr. 6) *Publisher's Weekly* also reported on his death: "Kephart had written many books on adventure, camping and out-door life, besides "Our Southern Highlanders," a volume which attracted much attention." (*Publishers' Weekly* 1931, Apr. 18).

A stone erected in his memory in the mountains above Bryson City, North Carolina, just outside the boundaries of Great Smoky Mountains National Park, notes that "On this spot Horace Kephart, Dean of American Campers and one of the principal founders of the Great Smoky Mountains National Park, pitched his last permanent camp. Erected May 30, 1931 by Horace Kephart Troop, Boy Scouts of America, Bryson City, North Carolina." (Frome 1980, 156) The Boy Scouts had wasted no time in erecting their tribute. The stone was placed only 57 days after his death.

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Figure 1. Horace Kephart, date unknown. (Courtesy Lilly Library, Indiana University, Bloomington.)

Figure 2. Titles pages from *The Book of Camping and Woodcraft*, 1906 edition, and *Adrift in the Arctic Ice Pack*, 1915 edition.

THE BOOK OF

CAMPING AND WOODCRAFT

A GUIDEBOOK FOR THOSE WHO TRAVEL IN THE WILDERNESS

BY

HORACE KEPHART

+ 773911

NEW YORK
THE OUTING PUBLISHING COMPANY
1906

OUTING ADVENTURE LIBRARY

ADRIFT
IN THE ARCTIC ICE PACK

From the History of the First U. S. Grinnell Expedition in Search of Sir John Franklin

BY ELISHA KENT KANE, M.D.

EDITED BY
HORACE KEPHART

NELSON DOUBLEDAY
OYSTER BAY, N. Y.

Figure 4. Survival-center.com webpage, 7/18/2000

Camping and Woodcraft

by Horace Kephart (1917)
Reprinted in 1988 by the University of Tennessee Press

This short list does not do justice to this work. This book contains over 800 pages of outdoor skills, from different types of fires for different purposes to diet and cooking to how to build temporary and permanent shelters and furniture. The hardcover costs US$29.00 and will give you a lifetime of reading pleasure. While outdoor technology has improved in the past 75 years, most of the skills he teaches have not changed in 1000 years. If there was book I would want to have for LONG-TERM (2 years+) wilderness survival, this would be it!

- Small hatchet
- Sheath knife (heavy or wet jobs)
- Pocket knife (fine jobs/surgery)
- Compass
- Watch
- Whistle
- Maps
- Paper & pen
- Matches in waterproof container
- Flashlight
- Spare eyeglasses
- First aid kit
- Repair kit: small scissors, tweezers, dental floss, needle, safety pins, rubber band, shoelace, twine, snare wire, rigged fishline, hooks, split shot, etc.
- Toilet articles: towel, soap, toothbrush, comb, mirror

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The SPRI Picture Library - Opening Up the Collections

Philippa Smith
Picture Library Manager
Scott Polar Research Institute
Cambridge, UK

Up until three years ago the photograph collection of the Scott Polar Research Institute (SPRI) was held as part of the Archives, in the same repository as the manuscripts, journals, maps, expedition papers etc. This was not an ideal situation, mainly because the two collections really required different storage conditions and also because the Archives were becoming short of space. As part of the Shackleton Initiative, therefore, it was decided to separate the photographic material off into a custom-built, climate-controlled store; a Picture Library Manager was appointed, and in January 1997 the SPRI Picture Library was launched, with the remit to make the collection completely self-funding within two years.

The photograph store was completed by September 1997. It was decided that the store should be kept at a constant temperature of seventeen degrees Celsius, with a relative humidity of forty percent. Temperatures of such storage facilities should not be allowed to fluctuate by more than four degrees Celsius, or the relative humidity by more than five percent. It is better to go for a value that can be maintained without variation, even if it is relatively high within the acceptable range, than to strive vainly to maintain unrealistic values - consistency is all-important. Negatives, prints, film and lantern slides all require, ideally, slightly differing ranges in storage conditions - we keep our temperature and relative humidity at a mid-range which is suitable, but not perfect, for all. Anything much colder would entail the material having to be held in a transitional area for several hours in order to be brought to room temperature before use - it would plainly not be practical for our purposes. As it is, we try to limit the amount of time any photograph stays out of the cold store, and the amount of light to which it is exposed.

Just prior to the move into this new facility, the Picture Library Manager attended a week-long conference in York on the Care of Photographic, Moving Image and Sound Collections. It was a great comfort here to confirm that so far we were on the right track, and cold storage was what was needed. However, after a week of learning about vinegar syndrome, molecular sieves, vacuum packing techniques, warped film footage, glue damage and acid-free wrapping, it became clear that we had some way to go. One of the distinguished speakers pointed out that those responsible for the conservation and preservation of collections could choose one of two options - to preserve the life of the collection by all means possible for as many future generations as possible, or to preserve the life of the collection by any means possible for the life of their job! The future generations seemed to be the best option here.

Once it had become obvious that the income generated by the marketing of the collections was going to be sufficient to cover its running costs (salary, equipment, stationary etc.) the next priority was clearly to pay for the storage and conservation of the photographs in their various formats. After a fair amount of research and advice, we decided to buy custom-made 'Lista' shelving units. These are steel units, made up of shelves, and drawers in various sizes to hold the lantern slide collection, the video collection, albums, transparencies and film footage. To be able to store all this in the space of one wall has been a huge bonus, and has left plenty of space for the many filing cabinets which house the prints and negatives. Drawers are lined with Melinex, to

absorb harmful gases which could be emitted from ageing film stock etc; they are also fitted with dust flaps. The albums are all supported by metal spacers, which prevent spine damage, and there is now space for them to stand without rubbing against each other.

Shelving was not all that was required however; all the negatives have been stored in glassine bags with a strip of glue down the centre join - and the glue was beginning to damage the contents. Many prints were in need of protection, glass lantern slides were in need of wrapping, some albums were beginning to deteriorate, and film canisters were rusting . Of course, when much of this material originally came to the Institute, everything was done in the accepted way and the potential for deterioration was not known or anticipated. It was obvious that action was required, and in the summer of 1999 we successfully applied for a grant from the Gladys Krieble Delmas Foundation - and with the help of the ensuing funds we were able to take several steps forward. We were able to employ an assistant on a temporary basis both to prepare the entire contents of the accession registers for the photograph collection for entry on to the SPRI database, and also to oversee the wrapping and other conservation work needed. The grant also gave us the means to buy the several thousand 'Silver Safe' enclosures needed for the negative and lantern slide collections.

And now, ten months later, much of the work is done. All the accession registers containing records of the photograph collection have been loaded on to the photograph database, (in text format only at present) and are accessible on the web. It is hoped that we will soon be in a position to link images to these entries - although we have not yet embarked on the inevitable project of digitising the entire collection. All film footage is re-housed in acid-free boxes (three films have had to be transferred to video as vinegar syndrome had taken hold), the majority of the lantern slides are wrapped and packed in their new drawers, and much of the re-wrapping of negatives has been done. All wooden lantern slide boxes, and anything else which accompanies the various collections, are labelled and kept in another area away from the cold store.

So, what exactly is in this collection which has been receiving such attention? A great deal of important, interesting and very valuable material, as anyone who has any knowledge of the activities of the London auction houses will know only too well. The single item which has been most in demand over the past couple of years has been Frank Hurley's photograph album of images from Shackleton's *Endurance* expedition. This contains about three hundred photographs taken on board and around the *Endurance* - it has all the well known, spectacular photographs of the ship at midwinter, trapped in the ice etc. - but it also contains a wonderful documentary image of the everyday life of the men, showing their activities, their portraits, pictures of the dogs; and it is all annotated by Frank Hurley which of course brings the whole thing to life and makes it unique.

Then we have a huge amount of material from both the Scott expeditions. All Herbert Ponting's photographs, of course, in various formats - lantern slides used in lectures by various surviving expedition members, the 'official' expedition album, and smaller albums made up for individual members of the expedition. But Ponting was not the only photographer on the *Terra Nova* expedition - Frank Debenham captured some spectacular images, and his panoramas and pictures of the search party as they set off in 1912 are extremely evocative. Murray Levick's Northern Party photographs, particularly those taken after the winter spent in the ice cave, are beginning to arouse interest, and of course, Birdie Bowers' photographs of the South Pole journey are national treasures.

Material from Scott's *Discovery* expedition is now, of course, beginning to come into its own, with the centenary of the expedition looming. We have, again, a huge number of photographs illustrating it all; Reginald Skelton was the expedition's principal photographer, and we have much of his work. Edward Wilson, Hartley Ferrar, Shackleton and even Scott also took photographs on this expedition - and some of the photographs in the many *Discovery* albums we have are very striking indeed. Raymond Priestley gave much material to the Institute, including several albums of *Nimrod* photographs; although they lack some of the

photographic quality seen in other collections, these albums are full of interesting little quotes and captions and are a delight to look at.

This is only a detail from the large variety of material we have and which is still expanding.. We have photographs from slightly more recent expeditions - and these are not in chronological or any other order - the British Graham Land Expedition, the Gough Island Survey, the British Arctic Air Route, the Norwegian-British-Swedish Antarctic Expedition, the Oxford University Arctic Expeditions, the Discovery Investigations, the Louise Boyd expedition to Greenland, the British North Greenland Expedition, South Georgia Surveys, the entire Frank Illingworth Photograph Collection, the British Joint Services Expeditions to the Elephant Island Group - the list is endless, and includes the majority of major British polar expeditions.

We go further back in time too - we have photographs taken as early as 1857-59 on the *Fox* expedition, the Daguerreotypes taken of Sir John Franklin and his officers, photographs and hand-painted lantern slides illustrating the 1875 Nares expedition in the *Discovery* and *Alert* and the whaling voyages of the *Eclipse* and *Maud* in 1888; we cover the wastes of Siberia, the Russian Far East, and all the many regions visited and photographed by Terence Armstrong, Brian Roberts, Alfred Stephenson, and other past stalwarts of the Institute. Last, but not least, we come up to date with the work of present day photographers, many of whom are SPRI staff or students.

We can, and frequently do, supply prints of many of the photographs for personal use, for people to hang on their walls etc. Anything requested for this reason is hand-printed to order, by our photographer. This service is particularly in demand at Christmas-time, and we try desperately hard to make sure that everybody receives their order in time for December 25th. We can also supply digital prints - we work in conjunction with the Cambridge University Department of Anatomy for this, and the quality of their images is usually very high. Although we do have our own scanning facility, it is limited and the work involved is far too time-consuming at the moment; we limit it to sending images by e-mail in cases of extreme urgency. One failing most potential customers have in common is the inability to ask for anything which isn't needed with utmost urgency. Most will want it by the end of the week, many will ask for it tomorrow or, not infrequently - 'could you get it to us by this afternoon? And this, of course, is where the internet comes into its own.. With the ability to scan images on to the computer and e-mail them, and the facility to receive credit card payment, we can take payment and transmit an image off very quickly indeed to almost anywhere. Until the entire collection is digitised, this is not the preferred method of sending pictures, but it is a very useful option which can be used on a small-scale basis. We also use this alternative facility for any very high resolution scanning to CD which may be required for subsequent use in large-format, high-quality reproductions - mainly poster and exhibition use. Anyone who is supplied with material in this way is required to return it to the Institute within a restricted time limit, and there are several conditions attached to its use. The use of images supplied in digital format is closely monitored.

SPRI receives much support from the 'Friends of the Scott Polar Institute' and the Picture Library has been fortunate indeed to receive much practical help from volunteers from this organisation. Two volunteers have worked on a more or less daily basis to sort boxes of photographs and list them, and to catalogue previously unrecorded collections. We also have help from other Friends who form regular work parties and come in to transfer negatives to new 'Silver Safe' enclosures. Without them, it would have been barely possible to do this work.

The task of raising the profile of the photograph collections, marketing them and making them available to potential users was undertaken in tandem with the conservation work. A major consideration, in order to avoid pitfalls in the early days, was to look into copyright issues, and to unravel the complexities of the law. Because of the age and history of much of the material, it was not always easy to establish just what we could or could not do with it, although luckily there were reasonably comprehensive records of the provenance and conditions attached

to the majority of the collections. So far, we have not met with any undue problems.

The collection 'took off' very quickly - this was not, of course, entirely unconnected with the upsurge of public interest in anything polar, particularly the expeditions of Scott and Shackleton. We were the second major contributor to the popular exhibition held, initially, at the American Museum of Natural History (*Shackleton - the legendary explorer*) and at the same time many of our photographs were featured in a *National Geographic* article - these two major exposures of SPRI as a source for images which were very much in demand, particularly in the USA, certainly helped to catapult the collection into the public consciousness. We were given permanent display space in Waterstone's book shop in the centre of Cambridge, we published a small but attractive gallery of photographs on the SPRI web site and we joined BAPLA (the British Association of Picture Libraries and Agencies), who now list us in their directory and refer enquiries on to us. Since the SPRI credit began to appear with increasing frequency on photographs in publication after publication, and on the screen at the end of TV documentaries, we have been kept extremely busy with requests. Images have been supplied for books, magazines, newspapers, film and TV documentaries, exhibitions, lectures, dramatic performances, commercial advertising - enquiries come from both home and abroad, and now seem to cover anything even vaguely polar-related. Requests have originated from a wide range of clients, from the *National Geographic* to a frozen fish company - nothing if not varied!

The Picture Library continues to thrive and to be recognised as a significant resource for anybody in need of polar imagery. Projects in which we are currently participating actively are the several well- publicised Shackleton documentaries being made in the States, a BBC TV, major polar exhibitions at the Oates Museum, the Discovery Museum in Dundee, the National Maritime Museum and Dulwich College, London.

We have been working in co-operation with a commercial organisation on the publishing of new sets of photographic prints, posters and, possibly, in the not too distant future, the Hurley album. Of course, the ongoing smaller requests for images for books, magazines and other publications keep coming in. Conservation work continues - there are still a few thousand enclosures to be filled - and there are just a few more collections to be sorted and listed and a few more collections to acquire.

And so we have developed and the collection has opened up. Far from being locked away in an archive, with only a few particular images ever making it to the public eye, the SPRI photographs are now receiving some of the publicity and recognition they deserve. As the various centenaries for many expeditions of the heroic age approach, we anticipate the public curiosity about polar exploration to flourish - and as the stories are retold, we are confident that we will be able to supply the pictures to illustrate the words, and to help the world understand the history of discovery and exploration at the poles.

Motion Pictures: Gateway to the Past, Gateway to the Future, Gateway to the Library

Dirk Tordoff
Alaska and Polar Regions Department
Elmer E Rasmusen Library
University of Alaska, Fairbanks

There are 24 individual pictures or frames in 1 second of 16mm film, 1,440 pictures in a minute, 86,440 in 1 hour, and 2,073,600 pictures in 24 hours. At the Alaska Film Archives at last count, we have identified more than 779,673,600 pictures. Now, if a picture is truly worth 1,000 words ...

I live my days with one foot in the past, one foot in the present and both feet in the future. How? Film and video images in the archives are from the past, the preservation problem is contemporary, and the challenges of access extend into the future.

Historical motion pictures provide a unique series of *Gateways*. Moving images complement traditional library collections by providing researchers with uncommon insight to regions, cultures, events and individuals. Film and videotape hold clues to how others lived and how they interacted. In some cases it puts us at an event that words or still pictures don't do justice.

The images provide a *Gateway to History*, a *Gateway to Culture*, a *Gateway to the Library* and a most importantly a *Gateway to Future Patrons*. Properly managed moving images are an important asset to an institution. They bring attention to the library and lead patrons to your other collections.

To the young, video monitors are a natural learning tool and to libraries holding archival film and videotape these children are instant and eager patrons.

The explosion of media in a world with multiple channels of specialized programming has created an increasing demand for historical motion pictures. At the Rasmuson Library, through our program of preservation and access, these patrons are visiting our collection in increasing numbers. Each time motion pictures from our collection are used in a documentary we obtain revenue to help keep the collection growing. In addition national and international attention focuses on our institution and more patrons seek out our collections.

Background

The Alaska Film Archives is part of the Alaska and Polar Regions Department at the Elmer E. Rasmuson Library at the University of Alaska Fairbanks.

Through three decades of collecting, the Alaska Film Archives has built the largest collection of archival films in and about Alaska, with particular strength in the pre-statehood era. (prior to 1959) Our collection of films and increasingly videos combines hundreds of individual donations to UAF with films collected earlier by the Alaska State Library. The collection is approximately 85% raw footage and 15% finished productions. Approximately 25% was captured by professional photographers, the remainder was generated by amateur hobbyists, tourists and others interested in Alaska. The collection encompasses all film gauges, with the majority of holdings being 16mm film plus a growing, and staggering variety of videotape formats.

Each donation meets our simple acquisition policy. In that policy, only moving images taken in, or specifically relating to Alaska or events that impacted Alaska, are added to the collection. No further subject restrictions are placed on the collection. Nearly all activities from the day-to-day life of our diverse cultural groups throughout the last century, to major natural disasters and national and international events offer research potential

for students and academics alike, both now and most certainly in the future.

It should be noted that our collection policy will be substantially modified when amateur home video collections begin to become available. With the proliferation of this medium and the ubiquitous presence of video cameras anywhere people gather, any organization with open doors to this material will be inundated. This change is not far in the future.

Common Interest

Motion pictures as we know them have been commercially available since 1897. This date coincides serendipitously with the discovery of gold in the Klondike and the subsequent gold rushes in the Canadian Yukon and Alaska. Fortunately a tiny bit of film from this early *Gateway* still exists. Subsequently, several additional *Gateways* between Alaska, Canada and other circumpolar countries are preserved on film and available for use by library patrons.

At the Alaska Film Archives we have located *Gateway* film common to our northern neighbors on the following subjects:

The earliest *Gateway* images connecting Alaska and Canada were taken by an Edison photographer during the greatest wave of human migration in the north, the Gold Rush. The small collection contains images between 1897 and 1901 and includes the docks in Seattle, White Pass in Alaska and the Yukon, and Hunker Creek and the Miles Canyon Tramway in the Yukon. Thanks to the Library of Congress in Washington some of this film survives.

During 1926 three sets of aviators were intent on flying to the North Pole and, if possible, over the top of the world. Two of the expeditions, Amundsen, Ellsworth, and Nobile in the dirigible *Norge*, plus Byrd and Bennett in the tri-motor *Josephine Ford*, were mounting their attempt at Spitsbergen. Across the Arctic Wilkins and Eielson were staging their first attempt in Fairbanks, Alaska. Film of these events survives plus the two subsequent attempts of Wilkins and Eielson during 1927 and 1928.

The Chukchi Peninsula of Siberia was the scene of a massive international search during 1929 and 1930 for Alaskan aviators Ben Eielson and Earl Borland. The pair was lost while flying in support of the *Nanuk*, a tiny ship owned by an American trader Olaf Swenson. The *Nanuk* was frozen in the ice off North Cape with a valuable cargo of fur. The aviators had been attempting to fly the cargo to Alaska when they were lost. When the crashed airplane was finally located the bodies were returned to Alaska by Soviet, Alaskan and Canadian aviators. Some of this film survives.

World War II found Canada and Alaska working together as the ALCAN Highway took shape and became the *Gateway to Alaska*. At the same time Lend-Lease aircraft refueled at a string of Canadian and Alaskan airports en route to Siberia. In essence, a *Gateway to the Soviet Union*. Some of this film survives.

The early 1950s found Alaskans and Canadians again working side by side, this time as Washington D.C. and Ottawa worked together to construct the Distant Early Warning Line or DEW Line. The line was an electronic fence meant to keep the top of the world from being a hostile *Gateway to World War III*. Some of this film survives.

During 1959 Alaska passed through the *Gateway* from a Territory, in essence a possession of the U.S., to a state. Motion picture photographers captured both the formal activity in Washington D.C., and the spontaneity on the streets in Alaskan cities and towns.

Preservation

With all this good circumpolar history available in moving images why don't more libraries have these collections? Simply put, there are serious down sides to working with these images.

Motion picture film is fragile and subject to a number of anomalies. Physically, if not properly stored, it shrinks, peels, fades, scratches, and breaks. Overall it is very expensive and time intensive to work with. It requires special handling, special equipment, and specialized storage facilities and must be transferred to contemporary video formats before patrons can access the images. However, it is far from a hopeless situation, as film

preservation funds are increasingly available in the U.S., and organizations supporting these efforts continue to grow.

Since 1993 several films in the Alaska Film Archives collection recognized as historically significant by funding agencies have been preserved for future patrons.

Films about Alaska Native soldiers during WW II and DEW Line staging activity during the Cold War were funded by the American Film Institute.

Film covering the late territorial and transition to Statehood periods have been preserved through a National Historic Publications and Records Commission grant.

The first silent feature film produced in Alaska, The *Chechahcos*, was recently among the films chosen for preservation through the Orphan Films Project of the National Endowment for the Arts, funded by the National Endowment of the Arts

Most importantly for us the founding family of the National Bank of Alaska has realized the value of these collections and have granted continuing funding for most of a decade.

Use

Our films and videos are in demand for research, classroom presentations, outside presentations, documentaries, and broadcast in Alaska and far beyond.

Inquiries into our holdings have risen from 15 in 1994 when our current on-line cataloging began in earnest to 103 in 1999. At the current inquiry rate we anticipate between 140 and 150 inquiries this year.

Our northern images have also been included in a number of documentaries. For example:

- BBC - London - "Seals on thin Ice"
- Central Television - London - "The Big Race"
- Twentieth Century Adventures - Toronto - "Stalin's Great Disaster"
- Faction Films - London - "The Hard Road to the Klondike"
- Gentle Giant Productions - Denmark - "Sled Dogs"
- Japan Television Workshop - Tokyo - "Alaska Natives"
- MTV - Budapest - "Natura"
- National Film Board of Canada - Toronto - "The Herd"
- NBC Television - Burbank - "I Survived Disaster"
- Turner Broadcasting System - Atlanta - "Alaska's Bush Pilots"

Presentations

The following presentation features three short segments of film from the Alaska Film Archives.

- The first clip is from *Chechahcos*, the first feature film filmed entirely in Alaska. Released in 1924 *Chechahcos* was the brainchild of "Cap" Lathrop, a successful Alaskan entrepreneur with a series of movie theaters among his holdings. The film is typical of the era. The northern gold fields are a far away harsh, yet romantic destination, where, inexperienced duffers, known as chechahcos, face the challenges of the environment and sinister evil-doers before happiness is achieved. Gold is not the ultimate prize and melodrama reins triumphant.

The second clip was made during the Cold War build-up and taken during 1954 and 1955. During the winters of 1954-55 and 1955-56 two massive supply efforts were staged through Alaska and the Yukon Territory. The purpose was to speed-up building of the string of Distant Early Warning or DEW Line sites strung along the Arctic coastline. Radar stations under construction in the Arctic were intended to detect Russian missiles headed for North America and allow time for a counter-attack from the U.S.

- The supply plan called for a series of Caterpillar and truck trains to move overland from the Interior of Alaska starting on the Yukon River and then construct a temporary road to the Arctic Ocean. Bringing up the rear would be

one of the most unusual vehicles ever in the Arctic, the Snow Train.

- The huge LeTournea Snow Train was the only one ever constructed. The train, in part the brainchild of Al Ghezzi of Alaska Freight Lines would prove to be his undoing. It was a cumbersome, impractical giant and ill-suited for the rigorous trip. As long as the terrain was flat, the road ahead plowed, the load small and the weather warm the Snow Train did well. If any of those factors did not co-operate it had problems. You'll note that the narrator is far more optimistic about the giant's ability. During the second winter it caught fire and was abandoned for several years before eventually being brought back to Alaska from the Yukon, where portions of it now stand as a curiosity to visitors and silent monument to the Cold War.
- In this clip we see and hear the prevailing attitudes of the day in industrial society. Disdain and disregard are attached to the Arctic environment. It was viewed simply as an obstacle to be overcome without concern over long-term damage that would result from such an excursion. There is no value in the north it is an annoyance and simply a platform for man to achieve his loftier goals.
- The final film is a compilation of material about Alaska set to the haunting violin of Alaskan Paul Rosenthal playing variations of the Alaska Flag Song. We begin with the gold seekers on the docks at Seattle in 1897, venturing through the variety of experiences and people who shaped the Alaska of today. Events touched upon include resource development, indigenous life, World War II, Statehood, the 1964 Good Friday Earthquake and finally construction of the Trans-Alaska Pipeline, the *Gateway* event that brought Alaska into the economic mainstream. In just over 4 minutes we'll cover 80 years.

The images were captured by numerous unknown and forgotten photographers and some we know well. Our view is in part through the eyes of Otto Geist, Leonhard Seppala, Eugene Snow, Charles Cann, Dr. Joseph Romig and Fred Machetanz.

To Learn More about the Alaska Film Archives

Dirk Tordoff, archivist for the Alaska Film Archives, is happy to respond to letters, calls (907/474-5357), faxes (907/474-6365), and e-mails (*fndit@uaf.edu*).

Thirty percent of the collection is entered in the University of Alaska online catalog. It is available online via SLED (*http://sled.alaska.edu*) and the Rasmuson Library Web site (*http://zorba.uafadm.alaska.edu/library/*). A preliminary inventory of the entire collection is in the Archives in Rasmuson Library.

VHS videotape copies for personal viewing are available by purchase and interlibrary loan. Beta SP copies for professional productions are available by arrangement.

Whispers from the Past:
Work of the International Committee
for the Study of the Lake Superior Jesuit Diaries and Mission Papers

Louise Wuorinen
Northern and Regional Studies Librarian
Lakehead University
Thunder Bay, Ontario

Brian Walmark
Thunder Bay, Ontario

Background

The Society of Jesus, or Jesuits as they came to be known, were one of several Roman Catholic Orders that responded to the Pope's call to spread the Gospel to the First Nations in North America.' The Jesuits were particularly suited to the challenges of missionary work on the largely unexplored continent.

The Jesuits were distinguished scholars who quickly learned the languages of the local people where ever they set up missions, be they in New France and Brazil or much later in the Upper Great Lakes. Indeed, the first Ojibwe dictionary was written hy Bishop Friedrick Baraga (1797-1868).[1] Hymnals, catechisms and other liturgical books were published in Ojibwe to assist in the spreading of the Gospel. These books were not created simply to assist other Jesuits to learn the Native languages more easily. In fact, many sermons were given in the Ojibwe language by the Jesuit missionaries. Scripture readings and hymn singing were conducted in the Ojibwe language until the middle of the twentieth century. In addition to their scholarship, the Jesuits had a streak of social activism. They built churches and they taught school. They intervened on behalf of the Chiefs in dealings with the Crown and with the fur traders. The Jesuits were ideally suited for the physical and spiritual challenges associated with living in remote places such as the Lakehead in the 1840s.As part of their day to day duties, the Jesuits were required to maintain a record of their observations and activities during their missionary postings. The writings of Fathers Chone and Fremiot during the time when the Ojibwe migrated across the international border to Fort William is particularly valuable since most of what we know about the history of the era comes to us from the Hudson's Bay Company. The Jesuit diaries and mission papers may provide new insight into the rationale behind the migration of the Ojibwe from Pigeon River across the International Border to the Lakehead. Historians and anthropologists have long speculated whether economics or political considerations fuelled the decision to move. The diaries may hold the answer.

Introduction

The International Committee for the Study of the Lake Superior Jesuit Diaries and Mission Papers was established in 1998. The founding group was comprised mainly of historians, anthropologists., language specialists and Jesuits who had a particular interest in preserving and disseminating the history of northwestern Ontario as described in the diaries and mission papers of the Jesuits who worked and established the missions on the west end of Lake Superior. The vision of the group was first of all to try to locate the diaries, letters and records detailing missionary life in the area and then to transcribe, translate and annotate the documents with the goal of making the end product widely available on CD-ROM and in a series of books similar to The Jesuit Relations. Since that

time the membership of the committee has expanded to include members with the technical expertise for producing an electronic product and a librarian to manage the documents as they are located.

Pilot Project

Upper Canada Society of Jesus Archives at St. Regis College in Toronto, however, revealed the original diary of Fathers Fremiot and Chone from July 1848 to March *1854.* In addition, three other diaries, spanning the years 1854 to 1862, 1862 to 1868 and 1868 to 1882, were also located. These diaries had been considered by many to be no longer in existence. It was at this point the Committee felt confident that the project could proceed providing that sufficient funding could be secured.

Due to the immense scope of the project, the committee agreed that a pilot project would be appropriate. The pilot project would focus on a portion of the first diary, a transcription of the diary and an English translation from the original French together with annotations. This would be published in CD-ROM format with an introductory video describing both the pilot project and the larger project and would be utilized to secure funding for the project as a whole.

Challenges for the future

Funding, of course, is one of the major challenges facing the committee. A project of this magnitude will cost approximately half a million dollars. Support for the pilot project has been secured mainly from Lakehead University, in the form of resources and Faculty/staff time as well as an Aid to Small Universities Collaborative Research Facilitation Grant in the amount of $2500 and a similar grant from the United States Parks Service. Other challenges facing the committee include the ongoing search to try to locate as many original documents as possible and then once the documents have been located, obtaining permission to use them in the project and finally dealing with the fragile and poor quality of the documents. Deciphering the faded documents will be a challenge, as will ensuring the translation reflects the evolution of language and the meaning of words.

Conclusion

The writings of the Jesuit Fathers and Brothers provide a rich insight into the history of northwestern Ontario in the late nineteenth century. The diaries and mission papers will provide modern day scholars with another source of material to shed light on the people and the times. However, this project will also increase these sources availability to stimulate the next generation of historians and anthropologists as the Jesuit Relations did for academics in the past.

Notes:

1. Paul Driben, *The Work of the International Committee for the Study of the Lake Superior Jesuit Diaries and Mission Papers,* Papers and Records, (Thunder Bay: Thunder Bay Historical Museum Vol XXVII, 1999)

2. Friedrick Baraga, *A Dictionary of the Otchipwe Language*, 1878, 1880.

ABSTRACTS

Not all papers were available for publication in these Proceedings. The following abstracts have been extracted from the programme. For further information, please contact the presenters personally.

Tamara Lincoln

"Visionary Dreams and Arctic Realities: Charting a Course for the Alaska Polar Regions Collections in the New Millennium"

We have strongly believed in the credo we adopted many years ago, that the Alaska Polar Regions Department and its collections exist to acquire, preserve, and make available to a broad spectrum of users the materials that illustrate and (document both the history of Alaska and the circumpolar regions." These principles were, indeed, followed and as a result of many years of excellent work accomplished, a world-class Arctic Collection' emerged which has gained international recognition.

Yet, as we stand at the threshold of a new millennium ,a time often accompanied by introspective by thoughts and analysis, I too, find myself yielding to this temptation. Thus, this presentation will exam the philosophical and thematic issues confronting us, as we look forward toward the future enhancement and preservation of our collections. Standing at these crossroads of time offers us an excellent opportunity not only to deepen the understanding of what we have, but also inquire into the value of it for generations to come. How can we best interpret and represent to the world, the family of scholars, our students and communities that which we have? And, ultimately, how will it fit into the larger cultural and historical context?

Jean-Loup Rousselot

"The Wrangell Archives in Tallinn"

Ferdinand Petrovich von WRANGELL (1776-1870) after his active life as an explorer of Northeastern Siberia and as a Governor of Russian America, retired in his manor in Estonia. His correspondence, his library, and a small ethnographic collection was inherited by the State of Estonia in the early 40s in the 20th century, The Soviet regime denied access to the archives and the library to anyone, they were kept at the Academy of Science in a cave closed with iron doors. It was only after the separation and independence from the Soviet Union that the cave could be opened for Western researchers.

18th POLAR LIBRARIES COLLOQUY
BUSINESS MEETING 13 JUNE 2000

1. Welcome

2. Treasurer/Secretary's Report

2.1 Accounts

Business Premium Account	50097217
£2,511.97	
Community Account	20092207
£ 21.94	
High Interest Business Account	90075132
£6,612.68	
Total	£9,146.59

- PLC funds of £7,794.63 were transferred on 16.9.99 from the Community Account to the High Interest Business Account to take advantage of the higher interest rates offered. The Community Account is retained for money transfers, payment of cheques, etc., these being arranged through transfer of funds from the High Interest Business Account.

Major transactions:

- *High Interest Business Account/ Community Account*

Credit

Received from 17PLC
£1,357.73

Debit

PLC Bulletin
£ 274.31

Support for 19PLC ($2000) £1,280.28

Transactions in process: $900.00 credit from University of Colorado transferring funds originally deposited for compilation of the *Polar and Cold Regions Libraries Directory*. Payment of printing costs for most recent *PLC Bulletin*.

Business Premium Account

Transactions in process: 4 Wenger Awards.

2.2 Membership

New members:

- **Individual**:
  Paul McCarthy (University of Alaska Fairbanks - rejoined)
  Teresa Mullins (National Snow and Ice Data Center, Boulder)
- **Institutional:**
  Desert Research Institute Library
  Nunatta Atuagaateqarfia
  University Library of Tromsø

2.3 *Bulletin* editors

Pressure of other duties has restricted the Editors, Lynn Lay and William Mills, to publishing only one issue between the 17th and 18th Colloquies. Appreciating that this really is insufficient, the Editors were very grateful to receive an offer from Nancy Lesh and Cathie Innes-Taylor to take over editorship from June 2000. Nancy is a previous editor of the *Bulletin* whilst Cathie was co-editor of the Proceedings of the 16th Colloquy. Both will be well-known to most members. The new Editors have plans to issue the *Bulletin* more frequently, with possibly as many as three issues per year providing that there is sufficient material. PLC members were reminded that their contributions would be welcomed and that the *Bulletin* was the proper medium for dissemination of news about significant developments, new publications, services, staff changes, or anything else likely to interest the membership.

2.5.4 Donation of books to Stefansson Institute

Following the passing of a motion at 17th PLC

concerning the donation of books to assist the newly founded Stefansson Institute at Akureyri, Iceland, it was reported that 3-4 libraries had sent books and that further donations would still be very much appreciated.

3 *Bulletin* circulation

Between 17th and 18th Colloquies the issue was raised as to whether libraries which had not taken out Institutional membership of the PLC were entitled to receive copies of the *Bulletin* which previous to the PLC's formal organisation in 1994 had been sent to them free-of-charge. It was decided that there should be no distribution without subscription. However, it was noted that libraries were not deterred from paying by the minimal charge but rather by their need for an appropriate invoice. William Mills undertook to draft this, together with a letter outlining the PLC's policy, for inclusion in the next mailing of the *Bulletin.*

Cathie Innes-Taylor pointed out the effectiveness of the *Bulletin* for advertising. Her posting of an announcement that copies of the proceedings of the 16th PLC were now available free-of-charge had resulted in 17 copies being requested.

Nora Corley Murchison pointed out that she had not been receiving recent issues of the *Bulletin.* The Editors agreed to look into this and ensure that, as an Honorary Member, Nora was on the mailing list and did receive copies.

4. PLC lapel pin

The Steering Committee was asked to investigate the cost of producing a PLC lapel pin.

5. Election of Steering Committee

The following members were elected: Phil Cronenwett, Berit Jakobsen, Maija Koponen, William Mills, Dennis Stephens, and David Walton.

Officers: Julia Finn, Chair; David Walton, Chair-Elect; William Mills, Secretary-Treasuer

Ex-officio: Vibeke Jakobsen (Convenor, 19th PLC); Cathie Innes-Taylor and Nancy Lesh (Editors, PLC Bulletin)

6. Vote of thanks to organizers of the 18th PLC

The following resolution was passed by acclamation:

"Whereas the 18th Polar Libraries Colloquy is being held in Winnipeg, Manitoba, and whereas the Colloquy is a stunning success; be it therefore resolved that the members of the Colloquy convey their deep gratitude to Anne Morton, Barbara Kelcey, and their Winnipeg colleagues for hosting this conference."

7. 19th PLC venue

Vibeke Jakobsen presented a letter from the Director of the Danish Polar Center inviting the 19th Polar Libraries Colloquy to meet in Copenhagen in June 2002. The theme of 19th PLC is to be "Poles Apart: Bringing People Together". The membership accepted this invitation unanimously and with enthusiasm.

8. Future PLC venues

Provisional invitations were noted from the Department of Indian Affairs and Northern Development to hold the 20th PLC in Ottawa in 2004 and from the Italian National Antarctic Research Programme to hold the 21st PLC in Rome in 2006.

William Mills
Secretary, PLC
18.07.00

Left to Right

Back Row:

Dennis Stephens, Sandy Campbell, Diedre Stam, Julia Finn, Catherine Innes-Taylor, Sylvie Devers, William Mills, David Walton, Philip Cronenwett, Brian Walmark, Dirk Tordoff, Raymon Goerler, David Ongley, Victoria Churikova, David Stam

Middle Row:

Josie Tong, Fred Presteng, Valentina Markusova, Martha Andrews, Nancy Lesh, Donatella Alesi, Susan Grigg, Tamara Lincoln, Laura Kissel, Lynn Lay, Ludmilla Ignatenko, Teresa Mullins, Betty Galbraith, Eva-Marie Beaudoin, Vibeke Sloth Jakobsen, Joy Wang, Paul Mcarthy, Nora Murchison, Louise Wuorinen,

Front Row:

Debra Lindsay, Berit Jakobsen, Jean-Loup Rousselot (with Letitia), Elwood Mead, Erma Mead, Barbara Kelcey, Sharon Tahirkheli, Mona Magnusson, Liisa Kurrpa, Nita Cooke, Anne Morton, Louise Robbins, Paula Filen, Eva-Lena Wiren, Maija Koponen, Heli Saarinen

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