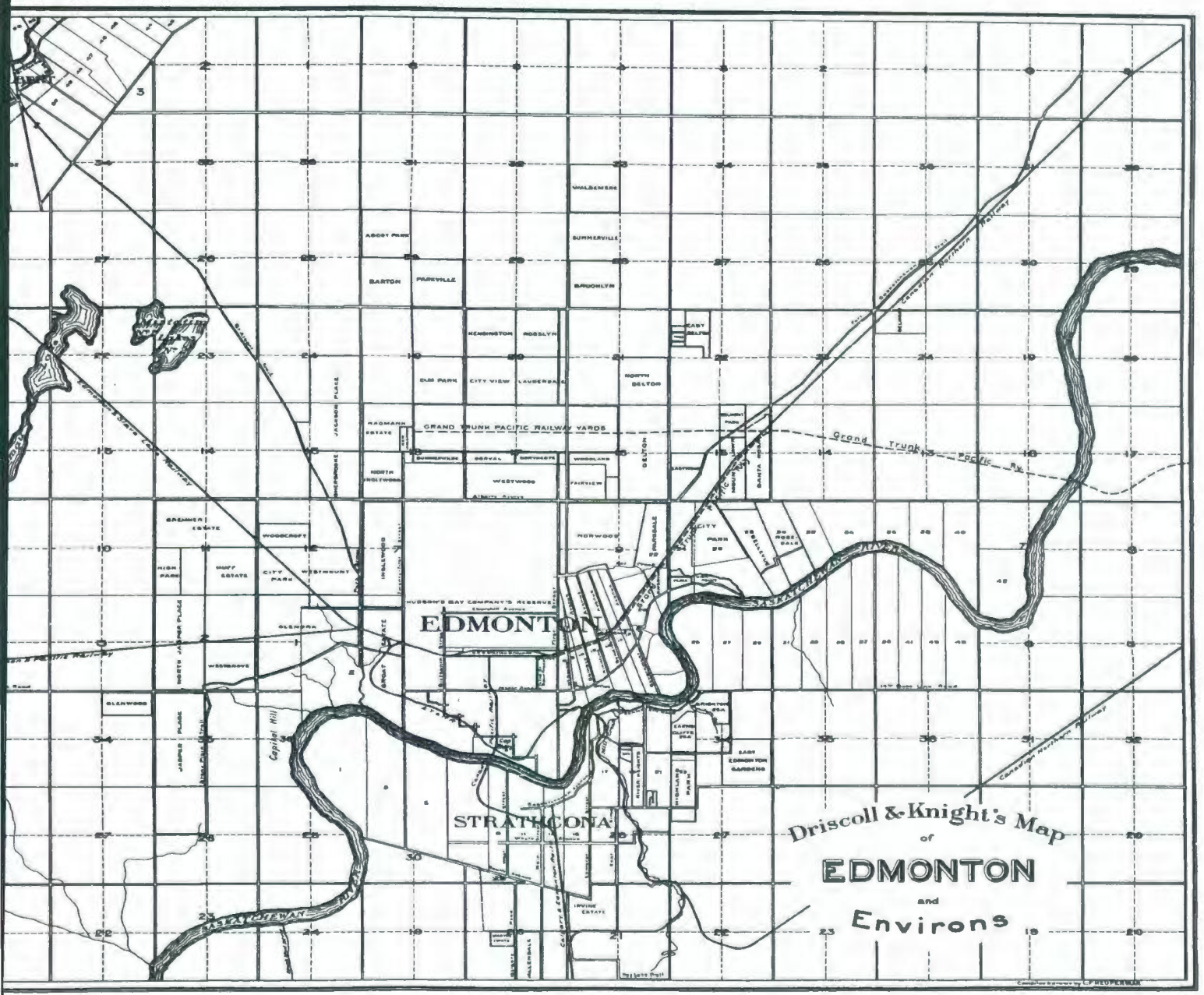
ASSOCIATION OF CANADIAN MAP LIBRARIES AND ARCHIVES

BULLETIN

ASSOCIATION DES CARTOTHÈQUES et ARCHIVES CARTOGRAPHIQUES du CANADA



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ASSOCIATION OF CANADIAN MAP LIBRARIES AND ARCHIVES / ASSOCIATION DES CARTOTHEQUES ET ARCHIVES CARTOGRAPHIQUES DU CANADA

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CONTENT / MATIERES

ON THE COVER...

DRISCOLL & KNIGHT'S MAP OF EDMONTON AND ENVIRONS, L.F. Heuperman, [Edmonton], 1907. It is reproduced from an original in the Visual and Sound Archives Division, National Archives of Canada. It has been reproduced as ACML Facsimile Map Series, Map No. 42 (ISSN 0827-8024).

DRISCOLL & KNIGHT'S MAP OF EDMONTON AND ENVIRONS, L.F. Heuperman, [Edmonton], 1907. Reproduite à partir d'un original de la Division des archives cartographiques et audio-visuelles, Archives nationales du Canada. Reproduite dans la Série de cartes fac-similés de l'ACC, carte No. 42 (ISSN 0827-8024).

President's Message

The Y2K fizzle is over. The new century has finally arrived. I hope the hype will fade away, and perhaps we can return to substantive and lasting actions in our work and personal lives – all positive of course. So what of the ACMLA and our mission? More importantly, what about 'cartography' in this new century? Are there positive (or negative) changes on the horizon? Are we doing the right things to ensure the continued provision of service to those in need of cartographic materials (and I include geospatial information in that mix)? These are the questions we ponder, but pondering and reflection are only part of the process. These are also part of the theme for the upcoming ACMLA-WAML-CCA conference. I want to relay a few of the things ACMLA members are doing right now to affect positive change within the cartographic and geospatial 'communities'.

Grace Welch, Carol Marley, Cheryl Woods, and Richard Pinnell are representing ACMLA on several key GeoConnections "Nodes". (Yes, nodes are like committees). Grace continues to make our concerns and views known on the Policy Node, which has just released an RFP to study pricing and distribution policies for geospatial data in Canada. ACMLA, in conjunction with CARL and other key associations, will be making representations to the person(s) carrying out the policy study. I would ask that you present your concerns to Grace, as well as checking the GeoConnections web site to follow developments related to the policy study – this study will be the most important development affecting the future of access to geospatial information. Carol Marley is working on the Access Node, which reviews and funds projects related to the development of search engines, standards, and other related technologies which will be the technical power behind the development of the Canadian Geospatial Data Infrastructure (CGDI). Cheryl is on the National Atlas Advisory group, and as you may be aware, there have been some very unique and innovative approaches to distributing the National Atlas Data. Richard has agreed to work on the Road Network Advisory Group, an often overlooked area, but one that is key and fundamental to the CGDI. Again, I would ask you to contact these individuals for input. I cannot thank each of them enough for volunteering in these significant efforts.

Over the last several months, ACMLA has had meetings at the National Archives to discuss the English Review with both the National and Assistant National Archivists. The ACMLA is working diligently to ensure that cartographic materials and geospatial data are given the highest profile possible within the Archives, and that any changes to the structure or organisation of NAC will not hamper any possible improvements in cartographic collections and services. In connection with this, I have met and corresponded with our colleague and friend Betty Kidd on numerous occasions, and we are working closely with our colleagues at the CARL office and with other associations to develop a stronger voice on these issues. ACMLA has also begun discussions with several related societies about the possible inclusion of the map library and archives perspective within a larger cartographic and geographic community. For example, we are exploring with the Royal Canadian Geographical Society ways in which teachers using maps and GIS can experience map libraries and the work we do. ACMLA is also continuing to work with the ARL offices in Washington, DC to develop an on-line coursefor map librarians working with GIS. Over the next few months, please keep a close eye on CARTA, as I will be posting many notices and requests for input. Also, once again, please contact your representatives on the GeoConnections Nodes, and should you feel a desire to participate more, there are many other areas where a map library and archive viewpoint is needed within the CGDI building process.

And last, but not least, I want to take this opportunity to thank the executive members, the Bulletin Staff, and all committee members and volunteers of the ACMLA for their continued support and very hard work. And to the Edmonton Conference organizers – our thanks and gratitude for what is surely to be an exciting and thought provoking event! Yes, this is a busy time. Yes, we have work piling up on our individual desks. But I am equally sure that the next two years will be the most crucial for our association and for map libraries and archives in Canada. I am also feeling extremely optimistic because I know each of you, and I know the skills, knowledge and passion you bring to the work you do. I'll see you in Edmonton. Until then, take care and don't forget to have some post-Y2K fun.

James Boxall
ACMLA President

MANAGING MAPS: A LOOK AT THE WILLIAM C. WONDERS MAP COLLECTION

Danial Duda
Cameron Library, University of Alberta

Cartography has been a fascinating and important discipline in the history of Western Civilization. Looking at an early map can fire the imagination, wondering as to what it must have been like to chart in detail geographic features seldom seen before by other humans. It was during the Renaissance that cartography, along with surveying, really began to develop as the discipline we recognize today. The European discovery of the Americas and the increase in government administrative duties during this era made maps essential. This resulted in map making becoming a much-desired occupation, and indeed an art form.

Prior to the 20th century, the quantity of maps in use by governments, private organizations, or academic and research institutions was never so great that professional standards for their management were deemed necessary. Since 1900 however, the number of maps in use has grown at a tremendous rate, as have other forms of documentation. Indeed, since the Second World War, the number of maps and charts produced has become astronomical. In his book *Maps and Man*, Norman Thrower claims that, from 1939 to 1972 (publication year of the book), over half of all the maps produced in the world were done in this time period. [1] As a consequence, libraries and archives have had to develop standards by which cartographic records are arranged, catalogued, and made accessible.

How does an institution deal with the management of large quantities of cartographic records? After briefly looking at the history of cartography in the Western World, this paper will discuss how one institution attempts to manage a large map collection: the William C. Wonders Map Collection at the University of Alberta. Recommendations on how the collection could be better managed will also be investigated.

Cartography is a multi-disciplinary field that crosses the lines of many subject areas. [2] Imagine a geographic location and call it A. The geographer is interested in the topographic features of area A. The geologist is curious about the rock formations that comprise area A. The forester wants information about the trees in the area, and an economist is doing a study on the industrial development in area A. The historian may want a map that displays the population growth of the region, but a politician will want to observe the voting patterns of the region. With only this example, six maps dealing with specific subject areas could be produced for area A.

Cartography, or the art or science of drawing maps and charts [3], is really a product of Western Civilization. [4] Though all societies throughout history have a cartographic tradition, the cartography that is recognized as a science today is a result of the great age of exploration during the 16th, 17th, and 18th centuries. It can also be assumed that cartography, like art, pre-dates writing. Map symbols were apt to be more universally understood by primitive man. [5]

Ancient Greek scholars wondered about the physical shape of the earth. This led to the beginnings of the scientific basis of measuring and formulating theories of what the earth looked like from a distance. Eratosthenes (276-196 BC) was the head of the Library at Alexandria when he estimated the circumference of the globe to be 28,000 miles. He also developed a grid system by drawing an east-west line through the Pillars of Hercules and the island of Rhodes, and a north-south line through Alexandria, Rhodes, and the Dardanelles. The grid system has been used ever since in map production to help establish a location. [6] Maps common in the Ancient period include route maps, town/city

plans, and administration maps. Very popular in Rome were maps that displayed the extent of the great Roman Empire and the delineation of its provinces and client states, connected by the famous Roman roads. [7]

Another librarian from Alexandria, Claudius Ptolemy (AD 90-168), wrote a book entitled *Geographia*. This was one of the first scientific treatises on maps, and proved to be the standard text on cartography for over a millennium and a half. It was this work that inspired people during the age of exploration beginning in the 16th century. Ptolemy contributed three major elements that are common in map making today. The first is the idea of projection, the process by which a sphere can be displayed on a flat surface. The two projections he developed were the conic and spherical. The second element is the breaking down of large maps into more detailed regional maps. This is the forerunner of the current map series. The third element is the employment of the latitude and longitude grid system. With this, he recorded the coordinates of 8,000 places, in effect, created a gazetteer. [8] Ptolemy's work is the foundation upon which the field of cartography, as it is known today, has evolved.

During the Middle Ages, cartographers were not particularly interested in the scientific elements of map making, but more in man's soul and its place in God's Divine plan. Christian geographers had a greater concern for their faith than earthly fact. The graphics depicted on maps therefore conformed to the teachings of the scriptures. [9] Also, most maps produced were world maps. One of the more popular formats was the circular map that used the T-O concept in which the ocean, the "O", surrounded the earth. East was always at the top of the map and Asia filled the upper half of the O. The lower half was filled with Europe and Africa. The line dividing Asia from Africa was the Nile River and the line dividing Asia from Europe was the Don. Africa and Europe were separated by the Mediterranean, which forms the upright segment of the T, with the Nile and Don rivers forming its cross. The three continents were surrounded by the ocean, the O, thus the T-O map. This format conformed well to Christian teachings because Jerusalem was usually displayed just above the T where the Nile and Don rivers intersect with the Mediterranean; in other words, Jerusalem was at the center of the world. One of the most famous examples of this type of medieval cartography is the *Hereford Mappi Mundi*, located in Hereford Cathedral in England. [10] Though these maps may have saved the soul, they were not much help to mariners interested in the precise location of rocks and shoals outside the port they were sailing into. [11]

It is with the rise of the Ottoman Empire in the 15th century that Ptolemy's *Geographia* enters again into the history of cartography. Before Constantinople fell to the Turks in 1453, many people from that city had left and settled in Italy. One item that came along with this migration was the *Geographia*. The migration corresponded to the beginning of the Renaissance in Europe, the reawakening, and ideas that led to action became part of the norm as Western man began to develop a new curiosity about his geography. Scholars and cartographers thus began improving upon Ptolemy's ideas. [12] According to Boorstin, "the rediscovery of Ptolemy was one of the developments of the Renaissance that marked the revival of learning, a prologue to the modern world". [13]

One major reason why Ptolemy's theories had such an impact on the thinkers of the Renaissance was the development of printing. More people now had access to his work. Printing also had a major impact on the production of maps because more items could be produced at less cost; thus, multiple copies of the same map could reach a larger audience. [14] After 1500, maps came to the presses regularly and in profusion. [15] During the next 300 years, the coastlines of the world would be mapped. The great age of geographical discovery (in the European sense) had begun, and more people became aware of other regions of the earth. As Thrower maintains, "European geographical exploration and its cartographic representation...are closely interrelated because a place is not really discovered until it has been mapped so that it can be reached again". [16]

A Flemish cartographer, Geraedus Mercator (1512-1594), was one who improved Ptolemy's theories, especially in the field of projection. The Mercator projection is conformal: the shapes around a point

are correct. The straight lines are lexodromes or lines of constant bearing. This greatly aided the task of a navigator on a ship. [17] The meridians of longitude remained parallel to each other from the North Pole to the South Pole. [18] In 1569, Mercator published a highly accurate world map.

Another new cartographic idea that developed during the early modern period was thematic maps. A thematic map serves a special purpose or it illustrates a particular subject using the topographic features of a map only as points of reference. Thematic maps deal with the social data relating to the human environment. Examples would be census maps or economic conditions of a certain region. In England, Edmund Halley (1656-1742) was one of the first to create effective thematic maps. He produced maps for stars, trade winds, and magnetic fields. [19] Thematic mapping truly crosses all boundaries and can address an infinite number of subject areas.

Beginning in the 17th century, the Cassini family in France began a project that would take four generations to complete. France would be the first country to be mapped accurately (for the time) in multiple sheets: the first map series of a nation. This was the first true topographic survey of one country. When completed, it numbered 182 sheets at a scale of 1:86,400. This successful project led to topographic surveys conducted by other European governments because they saw how useful such maps would be to government administrators. The British Ordnance Survey began in 1783. Napoleon used series maps to help plan, conquer, and administer the territories of his empire. One feature that gave greater accuracy to these series maps was contour lines. These lines helped to display the height of geographical features. [20] Ptolemy's idea of dividing a larger map into smaller regional maps was finally realized after 1500 years.

The basic principles of map making had been established during the Renaissance: grid system, orientation, and scale. By the 18th century, other elements were in place, but since then only enhancements and improvements on these elements have taken place. For example, computer mapping in the later part of the 20th century can produce maps quickly and efficiently. However, they are still based on the same principles founded in the Ancient world and the later enhancements that came about during the Renaissance and early modern period.

The classification of maps dates back to the Renaissance. Maps produced before 1500 can be divided four ways: map subject; map maker, printer, and publisher; methods of production, such as wood block or engraved metal plate; and date of issue. Maps produced since 1500 can be divided into special purpose thematic maps, discussed above, and general-purpose reference maps. Reference maps deal with the relationship between geographic features. An example of this type of map is the Canadian National Topographic Survey at 1:50,000 scale. [21]

With these general classification groupings in mind and the quantity of maps published since the Second World War, how does the librarian or archivist deal with such quantities? According to the 1986 *Guide to U.S. Map Resources*, there are 919 map collections in the United States. [22] In Canada, there are 112 research institutions with large map collections. [23] In both countries, there are countless other institutions that handle smaller quantities of maps, used in their day-to-day operations, but are not identified as "collections."

There is an argument in the information profession regarding whether librarians or archivists are better managers of map collections. [24] Since most maps are published items, librarians usually feel that they should be kept in libraries. Others argue that maps created by agencies that house their records in archives, or maps that are part of an archival collection though they are published documents, should be kept in archives. [25] In 1981, Ralph Ehrenberg clearly explained the different approaches. In his discussion of the subject, he used two institutions, the Library of Congress and the National Archives and Records Service, both located in Washington, D.C. For the Library of Congress, the collection is composed of discrete maps, or maps sets that are processed separately. Each map is significant in terms of its own unique content. The general order of arrangement is geographic. [26] As for the National Archives, their collection is composed of organic groups of maps

that are processed together as groups. The maps derive much of their meaning in relationship to the creating agency or other maps and documents in the same group. The order of arrangement is based on provenance. [27]

In Canada, the same issue is debated. At the national level however, the National Map Collection is maintained by the National Archives of Canada (NAC) in Ottawa. It is the largest map collection in the country. The NAC was established in 1872, and was then known as the Public Archives of Canada (PAC). In 1883, there were 426 maps in the collection. By 1907, there were 4,285 maps in the PAC. [28] Between 1945 and the early 1970s, 20,400 items grew to over half a million. The mandate during this era was to include current foreign maps, a result of Canada's involvement in the Second World War. These maps were collected as soon as they were produced: a depository program. [29] Space to store the maps has always been an issue, and the NAC has several offsite facilities to deal with their huge collection of 1.2 million maps. [30] Many of these have been reproduced on 105 mm microfiche to make access to them easier and to protect the original maps.

According to the 1992 *Directory of Canadian Map Collections*, the four largest collections behind the NAC are the University of Alberta (U of A), the University of Toronto (U of T), University of British Columbia (UBC), and Carleton University (CU). In 1992, the number of maps in each collection was as follows: NAC 1,500,000; U of A 352,000; U of T 220,000; UBC 165,000; CU 143,000. The numbers for 1999 are NAC 1,200,000, U of A 465,000; U of T 223,700; UBC 174,000; CU 157,300. [31]

The main storage device in all five collections is the flat map cabinet. The NAC classifies its maps according to record groups, an archival practice, whereas, the U of A, U of T, and UBC use the Library of Congress cataloguing system, and CU uses its own in-house system called PAC. Only the U of T has their whole collection catalogued, with UBC at 98%, NAC and U of A at 90% and CU at just over 50%.

All five institutions have seen a decrease in staffing between 1992 and 1995. NAC went from 13 professional staff down to 5, and from 10 non-professional down to 5. The U of A maintained its professional staff at 1 but dropped in non-professional staff from 2 to 1. The U of T saw its professional staff component go from 1.5 to 1 and its non-professional staff component from 2.5 to 2. However, U of T's student hours increased from 43 to 50 per week. UBC maintained its professional staff at 1 and dropped in non-professional staff from 2 to 1, like the U of A. UBC's student hours dropped from 25 hours per week down to 10. CU had 1 professional staff member in 1992 and now has no one in that capacity. There is now 1 full-time para-professional and 5 part-time para-professionals at CU. The student hours at CU dropped from 56 to 10 hours per week. [32] The bottom line for all of the institutions is the lack of funds to maintain the human and physical resources required for the collections.

The problem of insufficient staff and resources has served to magnify the debate over controlling map collections under archival or library principles. To examine this further, a review will be made of the map holdings of the University of Alberta. It is the largest map collection in Canada outside the NAC, and was founded in the 1950's by William C. Wonders. The William C. Wonder's Map Collection is today one of the most prestigious in North America. [33] Its areas of specialization are Alberta, Northern and Western Canada, the Austro-Hungarian Empire, Central and Eastern Europe, and Great Britain. Its subject specializations are topography, geology, soils, population, and military. [34] The primary purpose of the collection is the support of research and teaching functions of many of the U of A departments with the major ones being Earth and Atmospheric Sciences, History and Classics, Renewable Resources, and the Biological Sciences. Many people and organizations outside of the university community also use the collection: oil and mining companies, environmental and engineering consultants, travelers and recreational users, and genealogists. [35]

Depending on which source is consulted, the estimated number of maps in the collection is between 350,000 and 400,000. [36] They were originally stored in the Department of Geography, located in the Tory Building on campus. Today, they are currently held in two locations. The main

collection and the archival collection are kept on the first floor of Cameron Library. Roughly 60,000 maps are stored at the Book and Record Depository (BARD), the off-site storage facility for the U of A library and archival system. There are 230 map cabinets in Cameron and 55 in BARD. The majority of these cabinets are of the five-drawer variety, but there are also some three drawer and ten drawer units.

The size and complexity of the William C. Wonders map collection warrants a thorough examination of policies and procedures that should be adopted for its management. Attention should also be paid to proper storage facilities and equipment, as well as staff to administer the collection.

Policy Statement

The policy statement for the William C. Wonders Map Collection should coincide with that of the Science and Technology Library, from where it is managed, and with that of the University of Alberta Library System as a whole. The U of A Library is the second largest academic library in Canada with a collection of over six million volumes, second only to the University of Toronto Library. It is involved with consortia such as COPPUL, NEOS, and the Alberta Library. The primary function of the U of A Library is to provide the optimum environment for learning and research carried out by the faculty and students of the institution.

Although most of the collection is housed in the Science and Technology Library, maps are a medium that is used by many disciplines, as already has been noted in this paper. The collection policy must therefore recognize this interdisciplinary element. It must also take into account the policies of other institutions that are consortia members with the U of A. The following questions should be addressed when developing the policy statement for the collection:

- What is the purpose of the map collection?
- What are the priorities and goals vis a vis the U of A Library System and its partnerships?
- What U of A departments will share in the implementation and execution of this policy?
- What effect will other institutions have on the implementation and execution of this policy?
- What are the geographical areas that the map collection should cover? Should the status quo be maintained in this area or should the priorities be changed?
- What other materials are needed to support the use of the collection (e.g., gazetteers, atlases, globes, aerial photographs)?
- What are the Collection Development Policies of other subject areas within the U of A Library System and its partnerships?
- To what extent will the University of Alberta and the U of A Library System support the maintenance, functioning, and growth of the map collection?
- What rules are needed for the use of the collection (e.g., users must wear cotton gloves when using archival maps, only use pencils when taking notes)?

It is questions like these that must be answered before a strong and viable policy statement can be produced.

Cartographic Surveys

What is in the collection and what is outside of it must be ascertained to help develop an effective collection policy. Simple surveys, done either by telephone, regular mail, or electronic mail, can help establish what cartographic records are held by departments or other libraries within the partnerships. The surveys do not need to be long exhaustive processes. The following questions could produce valuable information without taking too much time:

- Does your department/library house cartographic records?
- If yes, how large is your collection?
- What geographic areas does it cover?
- What subject areas does it cover?
- What classification system is used?
- Is the collection catalogued?
- Do the maps circulate or are they for reference/ instructional purposes only?

If the results show that a number of departments within the U of A have their own map holdings, negotiations should be carried out with them to see what kind of partnership can be arranged that

would benefit everyone. Maybe the departments would be willing to transfer their holdings to the map collection and use the larger and richer resource. If not, they may be willing to have their collection catalogued, if it is not already, and added to the library catalogue. If this idea is not acceptable, at least they may allow an outside researcher to use their materials with special permission. Library personnel could be the intermediaries between the user and the department.

Other partnerships that could be established are with the National Map Collection at the National Archives in Ottawa, the Provincial Archives of Alberta in Edmonton, and the Glenbow Museum and Archives in Calgary. All of these institutions hold unique collections that can only enhance the informational resources already held in the U of A map collection. Whether it is on the campus, in its partnerships, or other institutions, surveys can help establish what cartographic sources are available outside the Wonders Collection. When this is established, a comprehensive collections policy can then be created.

Roles and Responsibilities

Once the collections policy is created and relationships established with other U of A Library subject areas, U of A departments, and outside libraries, the role and responsibility of the Wonders collection will become more apparent. The main responsibilities should be:

- Maintain and enhance the current collection.
- Help users find the needed information through reference services vis a vis one-on-one interviews, telephone, mail, or electronic sources.
- Preserve the collection through preventive maintenance (i.e., ensuring map cabinet drawers are not overfilled, all cabinets have a proper base to lift them off the floor in case of flooding, deciding if a map can be fixed on site by regular staff or if it must be sent to a conservator).
- Maintain both the historical and current value of the collection.
- Maintain and enhance the partnerships both within and without the U of A Library System.

A major role of the map collection would be to enhance the prestige of the larger U of A Library System, and, therefore, the University of Alberta as a whole. It has already been noted that the North American research community holds the map collection in high regard. Maintaining and adding to this established prestige would only be in the best interests of the University community. One area that does not require re-adjustment is the reference service, for it appears to be operating smoothly from the Science and Technology Information Desk located on the first floor of Cameron Library.

Facility Development

One of the major problems for the William C. Wonders Map Collection is the over-crowding of maps in map drawers. When the U of A Library took over the collection, map cabinets were purchased and set up at BARD. Approximately 60,000 maps have been sent to BARD and this has helped the over-crowding problem. There are two other things that could help with the situation: a major weeding of the collection and the purchase of more map cabinets. A proper weeding would take considerable time, at least six months if not a year or more. With the purchase of new cabinets, a shift of the collection could be done which would alleviate the over-crowding of drawers.

Another facility issue is that of security. The majority of the collection is located on the first floor of Cameron Library and is accessible by the public, but it is not regularly staffed. As a result, theft is a major concern. Another is that people not familiar with working with large quantities of maps may damage them either by taking them out of the drawers or putting them back improperly or misfiling them. The best way of dealing with these issues is to secure the stack area within an enclosed space. This would require a wall to be built across the first floor of Cameron Library. The collection would only be accessible during staffed hours. At least one staff member should be available to assist users and survey what is happening in the area.

The archival map collection, which consists of 19 cabinets, is located in a secured room, and only staff members are allowed to retrieve/return maps to this area. This collection consists of rare maps that

would be very difficult to replace if they were lost. These are not only original maps, but also facsimiles, produced in limited quantities, of especially valuable maps. For example, a facsimile of the *Hereford Mappa Mundi*, already mentioned in this paper, is in the archival collection. The principle of archival value, which includes administrative, legal, fiscal, evidential, informational, or aesthetic values, is therefore used in deciding which maps should be housed in the archival area. An archival map may have been purchased, donated, or transferred from the main collection. The librarian decides what should be put into the archival collection. Users who need maps from the archival collection must use them in the library because items from this collection do not circulate.

Among the major requirements for the map collection is a conservator and a space set aside to do conservation work. Basic encapsulation of maps in archival quality mylar is now done on a "needed" basis, otherwise, there is no conservation program in place. This will have to be established, or at least arrangements should be made with the conservator on staff for the U of A Library system. This individual currently works out of the Bruce Peel Special Collections Library located in Rutherford South on campus. Another task that must be done is to create a contingency plan to deal with emergencies such as fire or flood. Emergency supplies, such as roll plastic, mops, paper towels, and pails will also need to be acquired and stored in an accessible area to deal quickly with any emergency.

Staffing

The staffing situation is currently broken down this way: there is one FTE (Full Time Equivalent) professional and one FTE non-professional. A librarian currently fills the professional position. The tasks of the non-professional FTE are shifting the collection when needed, cataloguing, some basic reference work, encapsulation and other preservation functions, retrieval/refiling, and assisting the map librarian as required. For reference, all the staff who work on the Science and Technology Reference Desk handle map queries. However, they have not had the proper training to do as thorough a job as they would like. Some of the reference staff feel inadequate with their lack of knowledge when it comes to maps.

Ideally, it would be best if four people could be hired to supervise and maintain the collection: a geographer, geologist, historian, and conservator. This is essential because the direction of the entire collection is at stake, and if the directorship is in any way unprofessional, all the other elements of the program are in danger. If this is seen as too grandiose at this time, the following compromise might have to suffice. At least one professional could be hired to work exclusively with the collection, no matter what their subject background, as long as there is a strong interest in cartography. At least two non-professionals however, would be needed to help maintain and work with the collection due to its immense size.

The map librarian will need to take the time to get to know the collection. If he/she does not already have the education or knowledge in using maps, the willingness to learn and learn quickly will be an important asset. Duties will include reference, collections, instruction, and liaison with departments that use the collection heavily: geography, geology, history, natural science, engineering, environmental science just to name a few.

The non-professionals will assist the librarian in maintaining the collection, as well as work in reference, collections, and instruction. A priority project is the data entry of cartographic records into the maps electronic database. The completion of this will make everyone's duties easier and it will also make it easier for a user, both onsite and remotely, to find information in the collection. A shelf-read of the collection is needed to ensure that the maps are in order. While performing this task, the staff will also have to identify which maps need repairing and make the decision if the item can be repaired onsite or should be sent to a conservator. Another major project that needs to be done is to check the backlog of maps against the current holdings to see what needs to be added and what can be discarded. Duplicate or unneeded maps can then be offered to other institutions for their collections.

Professional Development

Whatever knowledge or expertise the librarian(s) and non-professional staff may lack can be attained through courses offered at the university, long distance programs through institutions like Athabasca University or over the Internet, or workshops offered by professional agencies. Another rich source of information is colleagues who work with map collections all over the world. There are a number of electronic list services that can accommodate these sources: MAPS-L, ARCAN-L, and CARTA are just a few examples. Organizations that can be beneficial for staff development are the Canadian Library Association, Association of Canadian Archivists, Association of Canadian Map Libraries and Archives, and the American Library Association. The rich literature that deals with cartography must always be consulted, for here is where the answer may be for many of the questions about managing a map collection. Having a passion for the field can also make the job easier to perform.

Cartographic Scheduling

An archival procedure that may be useful to a map librarian is that of records scheduling. This would designate what in the departmental collections should be retained permanently and what, in essence, could be discarded after a certain time period has elapsed. Maps with enduring value could be transferred to the Wonders collection when no longer required by the departments. Instead of doing a major weeding of the collection only when it's needed, a schedule can help ensure the collection policy and maintain some semblance of order in the stacks without relying on major time blocks every few years to do a weed. This process could be integrated into the policy statement for the collection. For example, the library attains several maps of the current bus routes for the city of Edmonton. When new bus routes are established and a new map is published to convey this information, then only one or two copies of the previous map need to be maintained for historical purposes, and the extra copies can be given away or destroyed.

Document Control

The map collection is currently classified using a modified version of the Library of Congress Classification System. It is a workable and user friendly system and does not appear to be in need of any major modification. The general arrangement is as follows:

Universe, Solar System
World
America
    Canada
    United States
    By States
Latin America
    By countries
Eurasia, Afro-Asia
Europe
    By country
Russia
    By republics
Asia
    By country and area
Africa
    By country and area
Australasia
    By country
Atlantic Ocean
Indian Ocean
Pacific Ocean
Arctic Ocean
Antarctica
Unlocalized maps [37]

The countries are further divided by state/province/territory and city/town. Within any of the above geographical regions, the following subject categories can be applied:

A Special categories
B Mathematical geography
C Physical sciences
D Biogeography
    D1 General (plant and animal distribution)
    D2 Plant geography
    D3 Animal geography
    D4 Wildlife reservations
E Human and cultural geography
F Political geography

G	Economic geography
H	Mines and mineral resources
J	Agriculture
K	Forests and forestry
L	Fish and fisheries
M	Manufacturing and processing
N	Technology, engineering, public works
P	Transportation and communication
Q	Commerce, trade, finance
R	Military and naval geography
S	Historical geography [38]

These two lists are the basis for arrangement within the Library of Congress Class G system for cartographic systems.

The William C. Wonders Map Collection uses a modified version of the Library of Congress system. Over 90 % of the collection is catalogued, but the backlog of maps to be catalogued has been steadily increasing since 1993, due to lack of human resources. The pre-1995 catalogue consists of 26 three-inch thick loose-leaf binders and each entry is handwritten. As has already been noted, work began over two years ago to enter these records into an electronic database. This project has greatly simplified the searching of maps.

The decision was made late in 1998 to enter only maps with a publication date of 1995 or later, into the GATE, the main catalogue for the U of A Library System. Those with a publication date before 1995 will be added into the map database. This has created two catalogues that must be consulted when searching for a map. Unless funds can be found and the time taken to enter all the map records correctly into the GATE, the separate database is a good and feasible solution to make it easier for users to access maps.

Conclusion

Cartography has become an important discipline in the history of Western Civilization. Ptolemy's work and theories, and the advent of the printing press had a great influence on the cartographic principles that are still used today. The great age of exploration introduced people like Mercator and Halley who also had major influences in cartographic practices. With World War II came a huge increase in the number of maps published and something had to be done to manage them. Thus, large quantities of maps found their homes in libraries and archives, and who and how they should be managed will be debated for a long time to come. Added to these traditional debates are the issues dealing with electronic resources and data. Where do they fit in with a paper map collection? (I did not deal with this issue in this paper for two reasons: it is a huge topic that should be done for its own merit, and it is an issue to still be resolved at the University of Alberta). However, the William C. Wonders Map Collection has become a noted research resource throughout North America because of its rich source of maps and the people who administered it through the 1970s and 1980s. The challenge for the University of Alberta Library System is to maintain this noted prestige and also to enhance and build on it. If these recommendations, or at least some of them, are followed in the near future, then this prestige should be maintained. To do this will require attention to the recommendations noted above. If however, they are not heeded, then the map collection and the U of A's prestige can only be hurt. This is not the desired result.

Notes

[1] Norman J.W. Thrower, *Maps and Man: An Examination of Cartography in Relation to Culture and Civilization* (Englewood Cliffs, New Jersey: Prentice Hall, Inc., 1972), 159.
[2] Ibid., 3.
[3] W.G. Moore, *The Penguin Dictionary of Geography*, 5th ed. (Harmondsworth, Middlesex, England: Penguin Books, 1974), 37.
[4] G.R. Crone, *Maps and Their Makers: An Introduction to the History of Cartography*, 5th ed. (Folkestone, Kent, England: Wm. Dawson & Son Ltd., 1978), ix.
[5] Thrower, 9.
[6] A. G. Hodgkiss, *Understanding Maps: A Systematic History of Their Use and Development* (Folkestone, Kent, England: Wm. Dawson & Son Ltd., 1981), 72.
[7] Thrower, 12-13.
[8] Ibid., 20.
[9] Daniel J. Boorstin, *The Discoverers* (New York: Random House, 1983), 146.
[10] Thrower, 31.

[11] Boorstin, 146.
[12] Thrower, 43.
[13] Boorstin, 151-152.
[14] Thrower, 44-47.
[15] Boorstin, 272.
[16] Thrower, 48.
[17] Ibid., 53.
[18] Boorstin, 273.
[19] Thrower, 64-65.
[20] Ibid., 75-80.
[21] Hodgkiss, 19.
[22] David A. Cobb, ed., *Guide to U.S. Map Resources* (Chicago: American Library Association, 1986), x.
[23] Tim Ross, ed., *Directory of Canadian Map Collections*, 6th ed. (Ottawa: Association of Canadian Map Libraries and Archives, 1992), iii.
[24] William A. Oppen, "The Archivist and Cartographic Materials," *The Canadian Archivist* 2 (1974): 65.
[25] Ibid., 65-66.
[26] Ralph E. Ehrenberg, "Administration of Cartographic Materials in the Library of Congress and National Archives of the United States," *Archivaria* 13 (Winter 1981/1982): 37.
[27] Ibid.
[28] Betty Kidd, "A Brief History of the National Map Collection at the Public Archives of Canada," *Archivaria* 13 (Winter 1981/1982): 4.
[29] Ibid., 11.
[30] Melissa S.A. Leitch, *Directory of Canadian Map Libraries*, 7th ed., (Ottawa: Association of Canadian Map Libraries and Archives, 1999), 159.
[31] Ibid.
[32] Ibid.; Ross, 8-9, 18-19, 74-75, 80-81, 98-99.
[33] Pam Ryan, "Do You Wonder About the World?" *Neos News* 2 (Winter 1999): 1.
[34] Ross, 8.
[35] Ryan, 2.
[36] Ibid.; Ross, 8.
[37] Mary Lynette Larsgaard, *Map Librarianship: An Introduction*, 3rd ed., (Littleton, Colorado: Libraries Unlimited, 1998), 122-123.
[38] Ibid.

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MAPS FOR THE MILLENNIUM: ACQUISITION OF ORDNANCE SURVEY DIGITAL MAPPING BY U.K. HIGHER EDUCATION INSTITUTIONS

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Paper presented by Barbara Morris at the 19th International Cartographic Association Conference / Association of Canadian Map Libraries and Archives Conference, Ottawa, August 1999.

Abstract

The Digimap Project, funded by the Electronic Libraries Programme (eLib) of the Joint Information System Committee (JISC) of the U.K. Higher Education Funding Councils, is investigating online access to Ordnance Survey (OS) Digital Map Data. Through a partnership between Edinburgh University Data Library and OS, staff and students at six U.K. universities were given free Internet access to a sample of OS Digital Map Data for two full academic years (1997-99). The take-up was unexpectedly high and the range of users surprisingly wide. By August 1999, over 1000 users drawn from all faculties in the universities had registered. The Project has uncovered wide-ranging demands for all scales of OS digital mapping and stimulated demand in many who previously were not map users. The Project has also begun to resolve many of the problems associated with the provision of on-line viewing, plotting and down-loading of current map data in digital form, reviewed some of the technical and career implications for map librarians and developed resources to support teachers and researchers. The Data Library has recently been awarded the contract to transform the project into a national service. This service will give access to staff and students, by institutional subscription, to substantially more OS data than was available for the trial. In this report, we describe the history of the demonstrator service and some of the issues that have arisen during each stage of its development towards becoming a national service.

Why Is There Such an Interest in Digital Map Data?

Employers are increasingly demanding graduates skilled in the use of digital map data. These data, which can be either vector or raster, can be displayed as a map and provide a geographic framework for integrating other data with a spatial dimension. Multi-disciplinary resources such as digital map data have also proved their appeal in almost every field of research and teaching in higher education.

Access to Ordnance Survey Digital Map Data for the U.K. Academic Community via the World Wide Web

The traditional means for consulting large-scale Ordnance Survey (OS) paper maps has been under threat in Great Britain for some years, since OS moved from publication of this series to on-demand digital production. Following discussions with Map Librarians in the British Cartographic Society, as far back as 1992, negotiations began between Edinburgh University and OS. Map collections at that time, without the financial resources or infrastructure to acquire the digital versions, were becoming increasingly out of date. In 1992, the Map Librarian at Aberdeen University calculated that it would cost the university £180,000 or CAN $450,000 to acquire digital coverage of the Grampian Region at a scale of 1:10 000. His annual budget was then £500!

The Digimap Project was developed in Edinburgh University Data Library and funded (1996 to 2001) by the Electronic Libraries (eLib) Programme of the

Joint Information Services Committee (JISC) of the Higher Education Funding Council. A demonstrator system was built using a three per cent sample of current OS digital map data at a variety of scales. Staff and students had free desktop access over the Internet at any suitable terminal to OS data valued at approximately £900,000 (CAN $2,250,000). User trials ran from October 1997 until December 1999 in six U.K. universities (Aberdeen, Edinburgh, Glasgow, Newcastle-upon-Tyne, Oxford and Reading). Users had access to online and telephone support from the project staff in Edinburgh. Map librarians and computing staff provided highly valued local support. Each trial site had a distinctly different map collection environment and support facilities. Digimap evaluation monitored the impact of these differences.

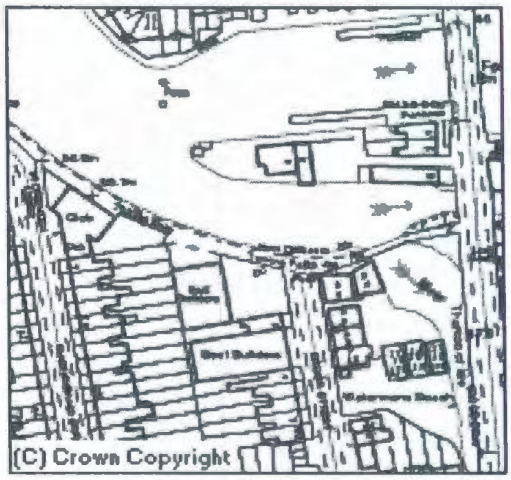

Figure 1: Ordnance Survey Land-Line.Plus® scales 1:10 000 – 1:1250. Thirty per cent of national cover.

The JISC/OS Deal for the National Service

Following the successful trial, agreement has been reached between OS and the JISC to support a national service for all subscribing Higher Education Institutions (HEIs) in the U.K.. The contract to deliver a high quality mapping service using OS data over the Internet to U.K. HEIs for teaching, educational and academic research has been awarded to EDINA (one of three U.K. National Data Centres). EDINA is based in the University of Edinburgh Data Library. The EDINA Digimap national service, which was launched on 10 January 2000, is free at the point of use to individually registered staff and students. EDINA is responsible for management, security and distribution of the data and is assisted by MIMAS (another U.K. National Data Centre) in user support.

Digimap allows users to view and print maps of any location in Great Britain at a series of predefined map scales. Advanced tasks that Digimap supports are:

- downloading of digital map data for use, for example, in GIS software on a user's own desktop
- advanced cartographic tasks, such as maps at a user-specified scale, combination of features from different map scales, and large format (up to A0 i.e. 33" x 47" or approximately E-size) print quality output
- gazetteer functions on place names

Although 1:10 000 and 1:50 000 scale raster data were included in the trial, and proved very popular, only vector data is currently included in the OS deal for the national service. All datasets in the national service, except Land-Line.Plus, cover 100 per cent of Great Britain. Only 30 per cent of Land-Line tiles are available each year to be chosen by users through their Site Representative (often the map librarian). Land-Line is the largest scale product at 1:1250, 1:2500 or 1:10 000 (Figure 1). (The basic survey scale depends on whether it covers urban, rural or

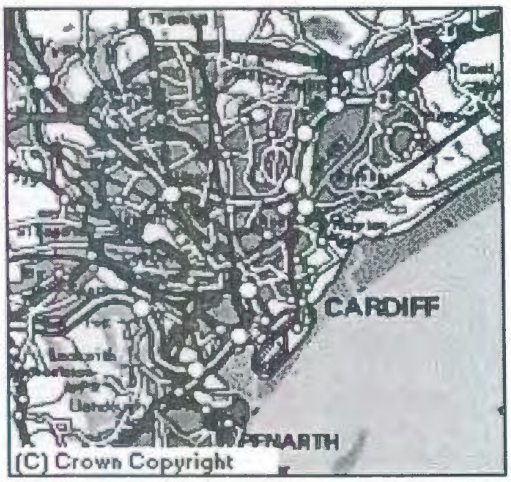

Figure 2: Ordnance Survey Strategi® scale 1:250 000. National cover.

moorland areas.) The other map products in the national service are Strategi® (1:250 000) (Figure 2), Land-Form PANORAMA™ (contours and DTM) (Figure 3) and Meridian™ (1:50 000) (Figure 4). The 1:50 000 Place Name Gazetteer (250 000 names) is also included. Land-Line.Plus®, Strategi® and the Gazetteer will be updated annually.

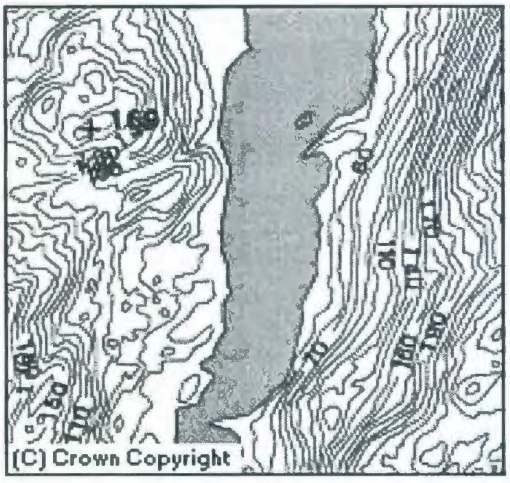

Figure 3: Ordnance Survey Land-Form PANORAMA™ scale 1:50 000. Contours and DTM. National cover.

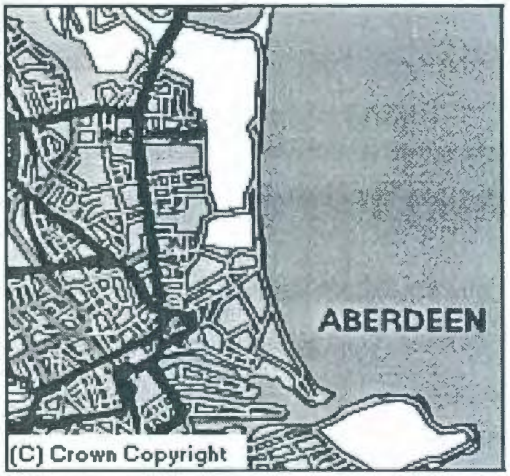

Figure 4: Ordnance Survey Meridian™ scale 1:50 000. National cover.

How We Have Made the Data Usable...

Data as delivered for the trial to the Data Library by OS in National Transfer Format (NTF) was unattractive and not readily usable without access to GIS or Mapping software (Figure 5). Even then, the symbolisation of the data would be up to the user. It has been necessary to spend considerable development time to satisfy the user requirement for maps that looked like familiar OS paper products (Figure 6).

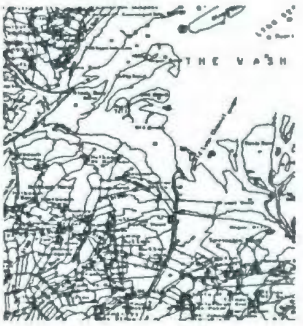

Figure 5 (left): Raw NTF data when plotted.
Figure 6 (right): NTF data symbolised to make it usable, as mapped by Digimap.

For users of the national service who wish to download raw data, Strategi®, Land-Form PANORAMA™ and Meridian™ are available in both NTF and DXF. OS is unable to provide Land-Line.Plus® in DXF at present for operational reasons. This is unfortunate as end users will continue, as they did during the trial, to require local support to convert these NTF data to a format suitable for CAD operations.

Our Expectations for a National Service Based on Use of the Project Service...

EDINA Digimap has built on the successful eLib project using the Data Library's expertise in Internet mapping and data delivery. Our aim has been to make the data usable. The uptake of the Demonstrator Service, where over 1000 users registered across the six sites, was above expectation by a factor of ten. Knowledge from the project informed the JISC/OS negotiations for the national service. For example, we were able to deduce from the user log files that paper map output was the most popular form, and that up to March 1999 more than 6500 Digimap 'sessions' were conducted, 22 500 OS maps viewed, and 4000 paper

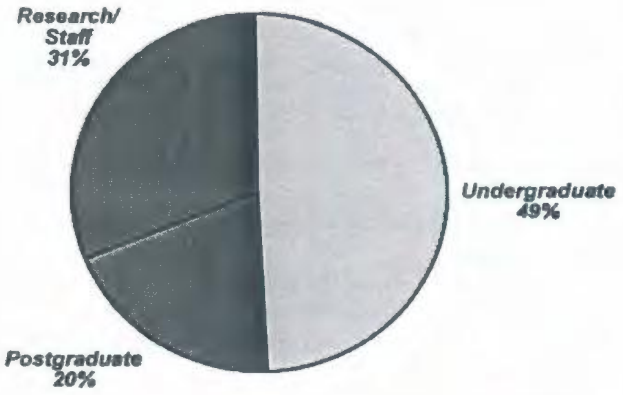

Figure 7: Digimap users by category 1997-99.

maps and 1000 data downloads requested. Users were classified into three groups, undergraduates, postgraduates and staff, with researchers included as staff. The proportion of undergraduates at 49 per cent was surprising high in comparison with the uptake of on-line bibliographical services in libraries (Figure 7). Another unexpected finding was that Digimap attracted users across all faculties (Figure 8), and that 80 per cent of users were non-geographers. The percentage of users in faculties of Arts and Humanities was low for the trial. Although there was substantial interest amongst archaeologists and historians, most were ineligible to register under the Terms and Conditions of Use drafted by the JISC. Those whose research was not funded by the Research Councils were excluded from the trial. After lengthy discussion between the project staff, the JISC and OS, these restrictions will not apply to users of the EDINA Digimap national service.

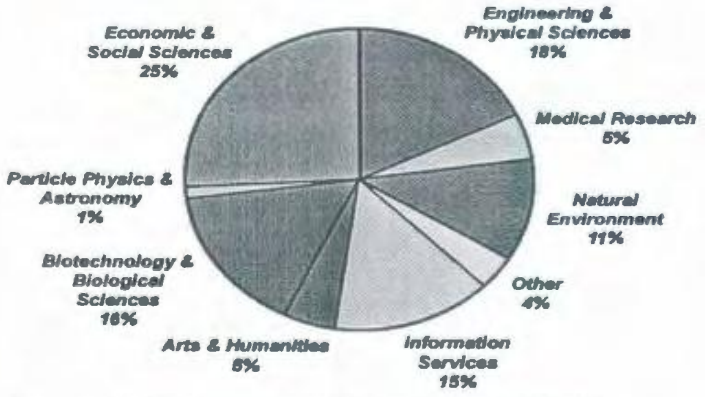

Figure 8: Digimap users by faculty 1997-99.

The table below list some of the uses to which data was put in the trial:

- *Agriculture* - Mapping and study of quarries on farms
- *Archaeology* - Location modelling of Bronze Age settlements
- *Astronomy* - Assessing topography for suitable telescope location
- *Atmospheric Physics* - Monitoring air pollution in built-up areas
- *Biological Science* - Vegetation ecology
- *Civil Engineering* - Impact of train-generated noise on buildings
- *Computer Science* - Research into graphics and visualisation
- *Economics* - Regional analysis of demographic issues
- *Electronics* - Teaching position location using mobile radio
- *History* - The feeding of Oliver Cromwell's New Model Army
- *Law* - Analysis of police recorded crime
- *Mathematical Science* - Modelling rainfall with topographical variables
- *Mechanical Engineering* - Solid model generation of real terrain
- *Pharmacology* - Study of health inequalities
- *Planning* - Brown-field site regeneration study
- *Zoology* - Mapping of water vole distributions

Cost of Subscribing to the National Service

All EDINA Digimap users must be fully registered members of a subscribing U.K. Higher Education Institution. The JISC has classified all U.K. HEIs into large, medium and small categories. Annual subscription fees for large institutions are £4,750 (CAN $11,875) + VAT, for medium institutions £3,250 (CAN $8,125) + VAT, and for small institutions £1,750 (CAN $4,375) + VAT. In addition to the subscription fee, institutions must hold a current OS Copyright Licence (£300 (CAN $750) + VAT per annum). By subscribing, an institution is offering a commitment up to and including academic year 2003/2004.

Productivity in Time & Money: An Example

The table below represents the cost and time taken by a student to produce a customised map for a project. This study was carried out as part of the business case prepared by the Data Library to assist institutions considering subscribing to the national service.

	User's Time on Task	Currency of Map Data	Expertise Required	Financial Cost
Trace/digitise from paper map in library	1 week	No	Yes	'Fair dealing'; material cost only
Acquire OS digital data/GIS	2 weeks	Yes	Yes	£340
Order customised map from OS	ca 3 weeks	Yes	No	£500
Digimap session at desktop	15 minutes (+ printing)	Yes	No	Free at point of use in subscribing HEI

It is apparent that it is both quicker and less expensive for the student to produce a customised map through Digimap, once their institution subscribes to the EDINA Digimap national service.

Issues Being Resolved

It has been necessary to resolve a number of significant issues. These include promotion of the service for research and teaching, awareness raising and supporting a heterogeneous, distributed user community with different backgrounds, pursuing different goals. This has been quite a challenge! Evaluation work in the Digimap Project has resulted in the production of a comprehensive support strategy for the national service. OS data are complex and current knowledge is low, so a significant amount of support is being offered on-line, with telephone and email support for Site Representatives through the EDINA Helpdesk. To satisfy legal requirements, extensive negotiations have taken place with OS over Terms of Use, copyright, security and methods of user authentication. The decision, for financial reasons, to make only 30 per cent, i.e. 69 000 tiles per year, of the large-scale (Land-Line) coverage of Great Britain available to the academic community at this stage has required the Data Library to develop procedures and software to handle rationing.

The Future

This new type of service will be available from January 2000, initially with six major OS data sets available. EDINA is providing mapping, data downloading services and user support over the Internet and also supports users directly, assisted by MIMAS. Users are also relying on local support from their site representatives, who are often map librarians. In the first two months of operation of the national service, some nine hundred staff and students in 43 U.K. universities and colleges have registered to use EDINA Digimap. The Digimap research and development project will run alongside the national service until September 2001. During this period, we will look into the feasibility of incorporating previous editions of OS mapping back to the 1850s and other data, including aerial photography, to support studies of the 'changing landscape'.

Since 'users consider Map Librarians the most valued method of support' (*Digimap Evaluation Report*, 1998), what will be the role for the Map Librarian in the Virtual Library? Like Tessier at the 1998 ACMLA conference, we see Digimap as 'a second debut' for U.K. Map Librarians in the new millennium, where they will complement the use of traditional maps with digital data, take the opportunity to gain new skills and to collaborate with colleagues in other institutions.

(To contact the author: barbara.morris@ed.ac.uk; http://edina.ed.ac.uk/digimap)

DATA ACQUISITIONS ISSUES: THE CANADIAN MAP LIBRARIES' PERSPECTIVE

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Paper presented at the 19th International Cartographic Association Conference / Association of Canadian Map Libraries and Archives Conference, Ottawa, August 1999.

Scope

As head of the University of Waterloo Map and Design Library, my primary interest is in geospatial data, hereafter referred to as geodata. As a data selector I am interested more in selection and collection development issues, and less in issues associated with the clerical aspects of acquisitions work such as order placement, shipping, receiving, invoicing, and payment. I do not claim that the issues I discuss here are ones that are unique to Canada; however I will illustrate using Canadian examples whenever possible. Despite the subtitle of this presentation, I can speak only from my experience at the University of Waterloo; yet I do believe that most of my colleagues across Canada are challenged by many, if not all, the issues to which I refer.

Summary of Issues

I have organized the issues I wish to discuss into five categories. Organizational issues are ones which relate to the ways in which libraries are structured internally, but also the ways in which libraries interface with other units on campus. In order to respond to new challenges, many libraries are in the process of structural reorganization. These organizational changes have had an impact upon the selection process. However the reverse is also true. The complexities of data selection and data processing have pushed library functional units to develop new structural relationships.

In order to build library collections that are relevant to the needs of the local academic community, selectors develop collection development policies which take into account clients' needs and how the library will attempt to address these needs. Such policies are often embodied in a written collection development policy statement. The kind of statement that has worked well for traditional paper-based collections may be inadequate in a geodata environment.

Geodata is expensive and therefore difficult to acquire. One solution to this problem is for libraries and librarians to find new and innovative ways to work together collaboratively or cooperatively in order to take advantage of external funding sources or to form consortia for the purpose of negotiating with geodata suppliers. By the same token, individual libraries can find new ways to partner or work with geodata suppliers to the advantage of both.

Selection issues are those associated with the data selection process. Librarians are familiar with the kinds of decisions that selectors must make when selecting books and journals. However, some of the decisions and considerations associated with the selection of spatial datasets are unique to that format.

The amount of time and effort involved in selecting and acquiring geodata is considerable. However, because the geodata selector is often also the map librarian, she/he has responsibility for developing and maintaining two collections. This is obviously a workload issue. Other duties may include responsibility for staff training and for public services such as user education and reference; this imposes additional workload upon the selector.

Organizational Issues

Libraries are reorganizing and restructuring in order to meet new challenges such as shrinking budgets, reduced staff complements, rising expectations on the part of patrons, and the electronic revolution in today's information age. Librarians are being challenged to take on new roles and responsibilities. Libraries now have Access Service Coordinators, Document Delivery Specialists, and Data Librarians. Map libraries are transforming, as staff grapple with geographical information system (GIS) software and complex spatial datasets. But the map librarian is not necessarily the one responsible for collecting geodata. This might be the responsibility of a GIS specialist, a data librarian, a government documents selector, or a subject specialist for Geography, Earth Sciences, or Agriculture.

The distribution of Statistics Canada's numeric and statistical data through the Data Liberation Initiative has resulted in many more library staff members becoming involved with geodata than ever before. Librarians are now becoming comfortable with various kinds of data, particularly since census data can be combined with geodata boundary files for mapping purposes. At the University of Toronto there is a library unit called Data, Map and Government Information Services; this illustrates how traditional library units are being restructured.

Academic and administrative departments on our campus are collecting geodata. At Waterloo, I am aware that faculty members in Biology, Civil Engineering, Geography, and Planning are acquiring data. Non-academic staff members in Plant Operations, and perhaps also in Waste Management, are also acquiring geodata. Undoubtedly there are other units involved as well. There is an urgent need to coordinate this activity in order to avoid duplication of effort and to cut costs. I believe the library should take a leadership role and assume greater responsibility for this selecting and collecting activity. A geodata advisory group with membership drawn from the client base, the library, and academic and administrative units where there is an interest in geodata would serve this purpose well.

Restructuring raises questions about budgets. Would academic units be willing to transfer funds to the library for the purchase of datasets related to their research and teaching interests? And within the library, if Map Library staff acquire geodata in support of the Civil Engineering program how should this purchase be funded? The sad fact is that library acquisitions budgets, particularly those made available to traditional library units such as the Map Library or Government Publications Department, are woefully inadequate for the purpose of purchasing geodata.

Data selectors must develop new and close working relationships with library staff in a variety of functional areas because of the complexities involved. Systems support staff can advise on matters such as whether the library's computing and communications resources, particularly those accessible to library patrons, will support the systems requirements of large and complex datasets. Systems staff may be called upon to answer questions about data compression, data storage (CD-ROM disk, data tape, server disk, local hard drive), software installation, data security, and so on. The data selector must consider how best to deal with license agreements. Who in the library has the expertise, responsibility, and time to review data license agreements? Does the university have a software/data licensing office? Are these staff familiar with the licensing complexities associated with geodata? Which library unit keeps the file copy of the agreement? Who ensures license compliancy and who ensures that the license agreement is renewed, if need be?

Close contact with members of the library's ordering unit is important. These staff may be unfamiliar with data-related terminology pertaining to data format, coordinate systems, data resolution, and to themes and coverages. Data-delivery options may bewilder staff: delivery might be via the Internet (ftp, Web download, or e-mail attachment) or by conventional means (on CD-ROM disk, zip disk, tape). Staff may find it difficult to match the data, when it is received, against the description of the data on the purchase order. The data selector will need to work with staff in the cataloguing unit and to develop policies and procedures with regard to

metadata. Metadata is often not available; on those occasions when it is available, it may be of poor quality. Can this metadata be used to enhance a conventional MARC record? Should there be a Web link from the OPAC record to html-ized metadata? If the data is stored on a data server, how will this location display in the OPAC record? Is the backup copy of the data a second copy, and should this be reflected in the holdings record?

Finally there is the physical processing of the data. Is this handled by staff in the order-receiving unit or by cataloguing staff or by some other library unit? Who decides upon barcode label placement and security strip placement (e.g., on a CD-ROM disk)? How does the library apply property stamps on data when that data may exist only on the hard drive of a public machine?

Collection Development Issues

In the first place, it is important to identify our client group or groups. Are we collecting for the local academic community only? What about students from other nearby campuses? Will we make data available to alumni, visiting scholars, sessional instructors? Will we support undergraduate needs or will we support only faculty and graduate research activity? Have we identified pockets of geodata interest on campus? Should there be different levels of data access for different client groups? There is increasing pressure to provide data access to members of the general public from the local area. But this may be too costly if additional licenses are required or it may be in direct conflict with the vendor's wishes as stated in a license agreement; this would be particularly so when dealing with consultants or others wishing to make commercial use of the data.

We need to determine clients' needs, but this is difficult to do because of broad-based interest in geodata. It is highly unlikely that there will be unanimity across campus with respect to geographic coverage, themes, data format, horizontal datum, and so on. At Waterloo, many but not all departments want vector data in ESRI formats, although some prefer MapInfo. Some patrons want shapefiles, others want Unix coverages, and others want data in ESRI Export format. Some want NAD27-conforming data (since this is compatible with other datasets in their possession), others insist upon NAD83 data. Because of cost and space limitations it is rarely feasible to purchase the data twice, in order to meet variant needs, but data conversions are becoming increasingly easier from a technical perspective, assuming the data license permits this.

How does one communicate with patrons scattered across a large campus? Some possibilities, and there are many, include regular meetings of interested parties (e.g., a data advisory group), Internet solutions (email discussion group, library-sponsored listserv, newsgroup, Web chat or Web board), or personal visits or phone contact with key researchers. Communication must be two-way and it must be ongoing to be effective. Because geodata is so expensive, when compared, for example, to paper-based equivalents, it is essential to develop data collections that mesh with clients' needs.

An important consideration in any statement of collection development policy is remote access versus local storage of data. In other words, should a data selector purchase licensed data and store it locally or simply purchase access to data that is stored remotely? If bandwidth is of concern, then it might be best to acquire the data and store locally. If local storage is problematic,then a better solution might be to acquire data upon demand or, if Web access is available, create a Web link to the data source. GeoConnections' GeoGratis Web site provides free access to Canada Land Inventory (CLI) data, which represents many gigabytes of information. A reasonable approach for most libraries would be to download and store CLI data for the "local" area or for areas that are studied intensively. Data Liberation Initiative data, primarily data provided by Statistics Canada, is accessible to Canadian Association of Research Libraries members for an annual fee. Most libraries download data from Statistics Canada's ftp server upon demand. However the TriUniversity Group of Libraries in Waterloo and Guelph has downloaded, for example, the entire 1996 census and makes these files available to eligible patrons via a restricted Web site.

The collection development policy should address

the issue of paper versus data. Under what circumstances would it be appropriate, if and when there is a choice, to purchase geodata in addition to the paper-based equivalent? Waterloo collects Ontario Base Map (OBM) map sheets for much of south-central Ontario but purchases OBM geodata for Waterloo Region only. Another example is our decision at Waterloo to purchase National Topographic Data Base (NTDB) data from Natural Resources Canada for southern Ontario (eight tiles only) and to collect paper-based equivalents for all of Canada at 1:50,000. There are advantages and disadvantages to both formats. Paper maps can be viewed by anyone who walks into the library, but the digital equivalents are licensed and access is restricted to the academic community. Geodata can be manipulated and analyzed using GIS software, whereas maps are static, non-interactive products.

Working Together: Libraries Working with Libraries

Universities do not have a long history of exploring for new and innovative ways to work together. The same can be said for libraries. But this situation is changing fast. One good example of how libraries are working together is the TriUniversity Group of Libraries, consisting of the libraries at the University of Guelph, University of Waterloo and Wilfrid Laurier University. This is a collaborative venture initially mandated to work towards a seamlessly integrated program of library collections and services. A major achievement so far is the Group's integrated library system, the core of which is a union database of catalogue records. With respect to collections, the Group has established a Data Resource Centre, mandated to provide joint access to statistical and other numeric databases including geodata. Discussions are beginning in November to consider how best to collect geodata in a collaborative way. Although this does not mean that datasets acquired by each institution necessarily will be licensed to all three, it does mean that data collections will be developed in an open and consultative manner.

Consortial purchasing by libraries is becoming commonplace. I am aware that the term consortium refers to a legal entity and that most library consortial purchases are actually joint purchases arranged by ad hoc groups of libraries or by library associations. However, the Ontario Council of University Libraries has actively supported the quasi-consortial efforts of the OCUL Map Group to acquire licensed geodata from the Ontario Ministry of Natural Resources. The Map Group recently aborted a proposal to purchase OBM digital data under a business plan where costs were based on the number of FTEs at each institution. However the Map Group will continue to seek consortial access to the Ministry's NRVIS database. The Association of Canadian Map Libraries and Archives, a national association of map libraries and cartographic archives, is currently negotiating with Natural Resources Canada for improved access to NTDB digital data. (Note: during the proceedings of this ICA Conference, CARL, Natural Resources Canada, and ACMLA signed an agreement whereby educational institutions in Canada are eligible for a 50%discount and a campus site license for purchased topographic datasets.)

Working Together: Libraries and Geodata Suppliers

Although libraries negotiating individually with data suppliers to acquire low-cost access to geodata are less likely to produce the results that library consortia might achieve, the results can sometimes be surprisingly successful. In Canada, libraries have had little success negotiating with geodata ministries at the federal level. One notable exception is the generous access to soils and soils capability data provided to the Canadian public by the Canada Department of Agriculture.

Similarly, libraries in Ontario have been largely unsuccessful in their efforts, singly or consortially, to negotiate less expensive access to provincial geodata. Individual university researchers, usually faculty members, have been able to acquire provincial data at little or no cost to support research projects of interest to the Province but these are individual arrangements that bypass the library. The Land Information Ontario (LIO) Initiative is an "enabling infrastructure approach to geodata acquisition, maintenance and dissemination which seeks to make geodata widely known in Ontario and readily accessible and

affordable". Stakeholders include provincial and federal government ministries, utilities, municipalities, and the geomatics (private) sector. Librarians and academics from several Ontario universities are members of various LIO working groups that are attempting to resolve infrastructure, policy, and access issues within the 5-year lifespan of this initiative.

Negotiations at the local level have produced much better results. Individual libraries in Ontario have managed to convince local authorities at the regional, county, or city level to release valuable GIS and remote sensing datasets. At the University of Waterloo, we have acquired from the City of Kitchener the complete set of digital orthophotos for Kitchener, a total of 30 CD-ROMs, at no cost. Recently we acquired from the Regional Municipality of Waterloo the full set of MEIS (Multispectral Electrooptical Imaging Sensor) orthophoto images of the Region, again at no cost. A convincing and legitimate argument is that by releasing such datasets to the academic community, research projects of mutual benefit are undertaken more readily.

Several libraries in Ontario are currently negotiating one-on-one with Teranet Land Information Services (Toronto) for access to Teranet's POLARIS, a land information, parcel-based database subscribed to by many Ontario municipalities. Waterloo is currently reviewing a draft of Teranet's educational license agreement, which may eventually serve as a master license for use by other educational institutions. In 1998 Triathlon Mapping Corporation (Burnaby, BC) offered its set of digital orthophotos of Greater Toronto and the Golden Horseshoe (1995 imagery on 30 CD-ROMs) to educational institutions at a greatly reduced price (i.e., 80% discount).

Universities also create geodata, often value-added datasets derived from government source data or digitized from analogue sources. Waterloo has acquired useful data for the Grand River watershed from the Geography Department at Wilfrid Laurier and staff in Plant Operations at the University of Waterloo have provided the library with spatial data for the campus. Two cautionary notes: it is essential to obtain the associated metadata in order to track how this data has been modified from the original source and there may be ownership and property rights issues associated with the base data.

Selection Issues

This section addresses some of the issues with which data selectors must contend during the selection process. For maps, there are well known selection tools such as GeoCenter's *GeoKatalog*; other map distributors such as MapLink publish complete catalogues of their inventories of city and travel maps. However there are no comprehensive, published sources of information for geodata. The Internet is becoming an increasingly important source of information about geodata availability. There are growing numbers of Web-based geodata clearinghouses such as Natural Resources Canada's CEONet. Many Canadian, US, and European government agencies and private sector geomatics firms have Web sites which provide technical and cost information for datasets they can supply. Yet many potentially useful datasets still remain in the fugitive category. Personal contact with individual members of key geodata agencies is an excellent way of remaining informed. Close contact with library colleagues can also be very productive; this contact can easily be accomplished by means of listservs including CARTA, MAPS-L, and OCULMP-L.

Descriptive information about geodata that is being considered for purchase is often scanty or lacking entirely. Sometimes the selector has no choice but to phone or e-mail the supplier for more information, a time consuming process. Published reviews in library and geography journals are occasionally available for geodata but most of these are reviews of commercially packaged CD-ROM products. Occasionally one finds reviews of geodata-related Web sites. Printed brochures or flyers with detailed, descriptive information about spatial datasets are rare. In those cases where product literature is available, the selector should determine whether the source of this information is the data creator or a third party reseller. Ideally this information will consist of metadata conforming to the Federal Geographic Data Committee's Content Standard for Digital Geospatial Metadata (CSDGM) standard.

Sometimes the data selector has a choice of datasets that are roughly comparable—for example, a single line street network (SLSN) file from Statistics Canada, a file from Natural Resources Canada, and a file from a local municipality. While it is refreshing to have such a choice, attempting to assess the merits of each dataset can be difficult in the absence of useful metadata. Cost therefore is likely to be the deciding factor. However, a selector does not usually have a choice; large-scale contour geodata for rural Ontario is available only from the Ontario Ministry of Natural Resources. One of the projects sponsored by GeoConnections and the Inter-Agency Committee on Geomatics is the development of a national database of framework geodata for Canada; the eventual creation of this database of standardized base geodata will relieve data selectors of much tedious selection effort. Several ACMLA map librarians are members of various GeoConnections working groups (i.e., nodes) associated with this project; for example, the map librarian from the University of Ottawa is on the Policy Node and I am a member of the Roads Advisory Node.

Librarians are used to making selection decisions based on bibliographic details in a book review. Map librarians select atlases based on date of publication, vintage of the contents, range of themes covered, and reputation of the publisher. For geodata, selectors assess these same criteria and yet there are other factors that are unique to geodata. These include but are not limited to: the data format, coordinate system, data resolution, horizontal and vertical datum, availability of metadata, availability of world files (for georeferencing), and so on.

Cost is often a major deciding factor. Topographic data, street network data, and remotely sensed data can be prohibitively expensive and therefore relatively unavailable to libraries. The cost of a single topographic tile at scale 1:250,000 from the federal government is on the order of $1,000 (note: the recently signed NRCan educational agreement will reduce this by September to $500). Data costs may include: cost to lease or purchase the geodata, cost of the medium used to deliver the data (e.g., CD-ROM), data preparation costs (labour), an annual subscription fee, royalty fees, cost of data updates (which can equal the cost of the initial purchase), and the cost of additional user license fees. It is essential to explore educational discounts and partnering arrangements with the supplier in order to lower these costs, if possible.

Selectors need to beware of encumbrances on use of the geodata they purchase. Some of us have seen licensing agreement documents which contain clauses that are so restrictive we could not sign them in good conscience. In general, data suppliers are extremely concerned about revenue loss through data leakage and also about commercial use of their intellectual property; they may want ironclad assurances this will not happen. Data selectors should consider whether such assurances can be given. License agreements often forbid the creation of derivative datasets and many will not allow licensees to create backup copies, make printouts of the data, or modify the data. Are these acceptable encumbrances? Selectors would be well advised to consult with representatives from their client base to discuss these concerns.

Method of delivery is not normally an important issue. Some vendors supply geodata on CD-ROM disk or 8 mm tape, some provide purchasers with access to an ftp or Web server for download, and some e-mail data as an attachment. Which option works best for your institution? CD-ROMs are a mixed blessing: for the vendor this is cheap technology and for librarians the CD-ROM may be a better alternative than online disk storage since competition within the library for networked disk space can be fierce. The CD-ROM can easily be copied to provide archival backup of the data. On the other hand, because geospatial datasets can be very large, these CD-ROM collections can grow rapidly. This can cause disk storage problems, and keeping track of which datasets are on which CD-ROM can be problematic. On a positive note, data compression software such as MrSID and ECW yields data compression ratios exceeding 30:1. This means that geodata on a set of 30 CD-ROMs can be compressed to reside on a single disk.

Finally, the selector should consider the issue of data updates. Does the supplier anticipate that there will be future data updates? How will the library be notified, it at all, when these updates are available?

Who in the library is responsible for acquiring this data and updating the original database? Will there be additional charges for these updates? Are the updates mentioned in the licensing agreement? Is the database updated selectively (for example, theme by theme) or in its entirety?

Workload Issues

Selecting and acquiring geodata is an extremely labour intensive process. The preceding section, Selection Issues, provides insights into the amount of time and effort that is required for that area of responsibility. Because of the subject or theme-based relationship between paper cartographic materials and geodata, the data selector is very often also the map librarian. In other words, this person is responsible for maintaining two library collections. Despite the obvious similarities between the traditional and the electronic collections, there are a host of different concerns and issues associated with each. It is beyond the scope of this paper to review those differences; suffice it to say that developing and maintaining both collections is a daunting task.

Staff training with respect to an understanding of GIS software and geodata is another responsibility which often devolves upon the selector/map librarian. Such training can take months depending on the level of GIS proficiency of the staff in the program. Two staff members in the Map Library at Waterloo are currently receiving training in this area; these staff, as well as the trainer, are committed to two sessions per week, each session an hour and a half in length, over a period of six weeks. Preparation time for these training sessions is considerable. At some institutions GIS-related instruction in a workshop setting for staff and students may be provided by the Information Systems/Technology Department, but that is not yet the case at Waterloo. On most campuses GIS instruction is provided by academic departments with an interest in geodata and spatial analysis: for example, Geography, Earth Sciences, or Civil Engineering. This instruction, most often in the form of a semester or block course, provides excellent theoretical background but little practical, hands-on experience.

So far I have said nothing about the data selector's public-service responsibilities that are associated with the provision of access to geodata resources. In some libraries, the data selector has no responsibility for public service, but this is unusual. More often the selector/map librarian is a member of a team delivering reference, circulation, and user education service. User education, sometimes referred to as library instruction, and promotional activities can be very onerous in terms of time and effort. These activities involve the preparation of workshops, tutorials, user guides, handouts, and Web pages as well as lengthy, one-on-one consultations with patrons.

Final Thoughts: Data Warehouses, Data Prisons, and Partnerships

Throughout this ICA Conference, we have heard much about data warehousing and database development in Canada, particularly at the federal government level. Examples of these warehousing developments include GeoConnections' GeoGratis, Department of National Defense's Geospatial Data Warehouse, Canada Centre for Remote Sensing's Geospatial Data Warehouse, and Natural Resources Canada's National Topographic Data Base (NTDB). But will these warehouses and data archives become huge data prisons? That is, will we in the academic/educational sector have reasonable—i.e., affordable—access to this data or will we be required to pay access fees and user fees that are far beyond our means to sustain? Will we be asked to sign severely restrictive license agreements?

Success in gaining access to relatively unrestricted use of government-supplied geodata may be measured by the extent to which libraries are willing and able to work together in collaborative or cooperative fashion to achieve common goals. It may also be measured by the extent to which libraries are willing to work in partnerships with data suppliers. In exchange for inexpensive or free access to geodata, members of the academic community including librarians can provide value-added database services: creation of metadata records; development of search, extraction, visualization, and analysis software tools; detection and correction of data errors; database design research; consultation on policy-related issues; and so on. The key to unlocking data prisons is learning how to work together!

MAPPING A CONFERENCE: A PARTICIPANT-OBSERVATIONAL ANALYSIS OF A CARTOGRAPHERS' WORLD [1]

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Paper arising from the 19th International Cartographic Association Conference, Ottawa, August 1999.

The defining moment for any anthropologist or sociologist is entering the world of ritual and symbols of the group he or she happens to study. In most instances, the ritual and symbols consist of a hitherto unknown language, perhaps an unwritten one, and the group is normally a "tribe," a group that marks its boundaries by common ancestors, a common territory, and self identifiers, such as a collective name. To this sociologist, the ritual and symbols were found at a major international gathering of mapmakers, and the "tribe" was cartographers.

Every field researcher in sociology imagines a careful unfolding of findings and insights and only after painstakingly reviewing his or her fieldnotes, interview transcripts, and documents, is that researcher prepared to "reveal" the "mysteries" of "his" or "her" tribe. After all, no sociologist, even the most astute one, can be expected to intimately know the culture under study. It is the accepted wisdom of researchers that it takes at least two years of study to become sufficiently acquainted with a new culture that one can think and behave like a native, although some claim they can do it in a shorter span of time. My own research on an Icelandic fishing community (van den Hoonaard, 1992), for example, took a full year of participation in that culture. Some researchers, like Shulamit Reinharz (1993), a highly respected sociologist, would even aver that a three-month stay in the field may be quite sufficient, before the necessary, initial element of questioning everything, of taking things for granted, would be undone by fatigue or irritation, or both.

In preparing myself for the 19th International Cartographic Association Conference in Ottawa, August 1999, I realized that the most appropriate avenue for being at the Conference was to present a paper about the sociology of cartography, with special emphasis on gender. [2] I was reasonably confident that the paper (van den Hoonaard, 1999) would satisfy the attendees in the appropriate session: my paper presented a theoretical model for the sociological study of the world of cartographers and, although it employed the study of historical documents, I realized that my findings were tentative. The audience responded in a kind manner—here was an opportunity to look at their occupation in a slightly new way.

My other intent was to embark on a formal study of the Conference as a key element in the world of cartographers. As my paper fell on the third day of the Conference, I had plenty of time to write up fieldnotes of my observations and conversations with ICA participants at all levels. Their response to my presence in the midst of one of their most important rituals was gratifying: a feature article about my presence in "People Corner" of the *ICA Newsletter for Ottawa ICA 1999* (Saturday, 21 August 1999) underscored the general interest of participants at their being a subject of study. I also recall attending the barbecue held at the National Aviation Museum when I saw a delegate with a camera and after I had asked him if he would take a few photographs of the gathering, he fixed his gaze on me and said, "I know you. You are the sociologist!" I had never met the man before.

Aside from this unexpected interest in my presence, there was another element that had quite an unintended effect. That element was presenting my

fieldnotes, gathered at that Conference, during my formal presentation on Day 3.

I seemed like a poor cousin. Presentation after presentation displayed state-of-the-art PowerPoint, each one outshining the other in aesthetic appeal, in vivid colour. With my few, but simple overheads, rendering some of my theoretical findings as excruciatingly primitive line drawings, I felt timorous. Nevertheless, the other panelists were enthusiastic and a spirit of camaraderie prevailed. It was at this point, that I thought that it might be helpful for the audience to see what sociologists might do and observe at one of their international gatherings, i.e. this conference. I shared my preliminary findings of three days of observations.

In many respects, it was the sharing of those insights that leaped over my original paper and that quickly garnered attention from the attendees. All day long following that presentation, and well into Day 5 of the Conference, I was approached by delegates' confirming my observations. What is more, they had insights that had escaped me (hence the need to be among natives for at least two years). The part of my presentation that provoked such interest was some plain observations about the "Commercial Exhibit". Those observations seem to have a long shelf-life, because since August 1999, I was encouraged to make a presentation to the Annual Meeting of the Canadian Cartographic Association in May-June 2000 and was invited by this very *Bulletin* to contribute an article. It is as if these plain observations of the "Commercial Exhibit" are sweeping along the rest of my research.

As the reader can infer from the above, I am but a poor cousin-colleague. Registration fees for the ICA were $850; for any of the sociology conferences that I attend, fees are around $100. For the ICA Conference, there was a wealth of exhibitors' booths; for sociology conferences (such as the one I am organizing at the University of New Brunswick in May 2000), we are lucky to have a local bookstore sell and display books and some T-shirts. Whereas all ICA delegates receive fine, imitation-leather Conference bags, attendees at sociology conferences find themselves with the programs and flyers stuffed in a folder, probably provided by the local tourist bureau, free of charge. [3] ICA participants can look forward to receiving full-fledged glossy, coloured conference proceedings (and even a CD-ROM) while most sociologists must be satisfied receiving a booklet with the abstracts of papers, on recyclable, flat paper. The "Sponsors' Reception" is common fare at the ICA, but highly unlikely at sociology gatherings. The sense of having stepped into a wealthy home from the dubious world of street sociologists was given a further boost by the impressive array of posters, technology, [4] and the wearing of business suits. In other words, I believe I moved from a world of the single-strand lightbulb hanging from the ceiling to the glittering world of chandeliers. Although I may seem too informal with these observations, my intention was to underscore the relative wealth of the Conference.

Under these conditions, my attention was drawn to many facets of the conference, but I wish simply to report on the commercial exhibition that seemed at its heart—it was findings about this exhibition that aroused so much interest among some participants in that session on "Gender and Cartography". [5] First, the salience of the (Commercial) Exhibit was much in evidence. It is prominently displayed on page 18 of the 77-page Preliminary Programme, "Touch the Past, Visualize the Future". And although this well-crafted document contains virtually no advertisements, the organizers prominently feature the "Gold", "Silver", and "Other" Sponsors of the event. The Final Programme replicates this format, except that the map of the Exhibit appears on page 17 and, unlike any other venue for the conference sites, it is indicated in colour, in mild pink no less. An attractive, glossy, 28 page pamphlet accompanies the Final Programme and not only replicates the mild-pink map (on pp.14-15), but also contains detailed descriptions of the exhibitors. Commercial exhibitors seem to play a key part in the Conference and life of cartographers.

Second, the configuration of the exhibitor stalls demanded considerable attention on my part. For those who attended the Conference, they will, no doubt, remember that there were over 100 booths (102, to be precise). Even though dubbed "Commercial Exhibit", at least 17 booths pertained

to governmental and "non-profit" booths (short: the "non-profits"). Some of these latter booths occupied a fairly central place in this arrangement. One ICA participant dubbed the presence of the commercial booths at the Conference as "the courtship of commerce", involving free gifts, scavenger hunts, and other forms of enticements to lure conference participants to the exhibitors. But, it is not the number that exacts our attention, it is its particular layout and organization.

Third, the layout of the booths was stratified according to the relative importance of the particular company: the booths that carried the most weight were not only bigger and taller, but were also more central to the layout. Taking a coffee break in chairs conveniently situated in the middle of the Hall, one's eyes would easily fall on these prominent displays. If one could visualize the physical arrangement of the whole Hall, one would see the equivalent of a medieval fort. The inner part of the fort is the centre and contains the most prominent and (I presume) the most expensive array of displays. Next come the walls of the fort, whereby the inner face of the wall "looks" into the centre and constitutes, for our purposes, the next level of booths: less prominent and with somewhat lower rent. The subsequent area is the side of the wall that faces the outside, away from the city. Facing away, the booths in this area, represent smaller companies, maybe even "upstarts." The final, fourth area is found beyond the moat: the areas occupied by tenants with lower monetary status. They are in the margins of the Hall. It is noteworthy that in this zone one is more likely to find untended or empty booths, or booths without signage. [6] The analogy of a medieval castle only extends so far: the four zones do not entirely encircle the Hall and although some of the booths are on the perimeter of the Hall, they are no less important to cartographers and to their tribal brothers and sisters.

We now come to the fourth (and the heart) of my fieldnote scribblings, namely the rather profound role that gender plays in the organization of the Exhibitors' Booths. I had expected that the further one moves away from the circle, generally the higher proportion women's tending the booths.

Table 1 conveys my initial findings:

Table 1

Proportional Representation of Women in the Exhibit Hall: All Booths

	No of staff in booths	% of Women
Inner Circle ("Centre")	63	27.0 (N=17)
Inner Edge ("Inside Wall")	50	22.0 (N=11)
Outer Edge ("Outside Wall")	16	25.0 (N=4)
Periphery ("Beyond the Moat")	35	22.9 (N=8)
Total	164	24.4 (N=40)

When one moves from the Inner Edge to the Outer Edge, the proportion of women staffing the booths increases from 22.0% to 25.0%. The Inner Circle seems to be the anomaly, with a (higher) percentage of 27.0%. The Periphery shows again a drop (to 22.9%). As Table 2 shows, however, there are no anomalies at work. When we deduct the governmental booths from our tally, we see that the differences based on gender are striking:

Table 2

Proportional Representation of Women in the Exhibit Hall: Excluding Governmental Booths

	No of staff in booths	% of Women
Inner Circle ("Centre")	29	10.3 (N=3)
Inner Edge ("Inside Wall")	39	20.5 (N=8)
Outer Edge ("Outside Wall")	16	25.0 (N=4)
Periphery ("Beyond the Moat")	35	22.9 (N=8)
Total	119	19.3 (N=23)

Without the governmental booths, only 10.3% of staffing in the Inner Circle are women, and it gradually moves up to 25.0% on the Outer Edge. In

the Periphery, the proportion of women staffers drops to 22.9%. There are no ready explanations for this drop. We already noted that the booths in the Periphery tend to be very unstable.

It appears that governments are pulling their weight in having both women and men represented in their respective booths. Without the government and the equality policy, it seems that industry is falling short in its representation of women as staff members in its booths.

After I had presented these preliminary, informal findings at the session devoted to "Gender and Cartography", many delegates who had attended the session approached me subsequently throughout the length of the remainder of the Conference. Intrigued by my findings, they had strolled to the Exhibit Hall, to check this matter out on their own and largely confirmed what I had jotted in my fieldnotes. They also reported something that I had failed to see: the dress codes of women and men in the booths.

As a general rule, women closer to the Inner Circle were more likely to be dressed in what one would describe as conventional business clothes, wearing flat-heeled shoes, comparable to the suits that the men wore. A number of attendees in the "Gender and Cartography" session also averred that the women in the Outer Edge were more likely than women on the inside, to wear tightfitting clothes, with high heels—several of these would refer to themselves as "booth bunnies". The only women who were the exception to this rule were the women occupying the booths of the "non-profits," i.e. Canadian Hydrographic Association, Centre of Geographic Sciences, and the Association of Canadian Map Libraries and Archives. Without exception, the women in these booths resorted to wearing "no-nonsense" garments.

The above findings represent a small portion of what has emerged from my fieldnotes and, hopefully, my new book, *Atlas Shrugged: Gender in Historical and Contemporary Cartography*, will incorporate, in greater detail, my Conference findings dealing with gendered participation in the paper and poster sessions, patterns of chairing meetings, and the extent to which women and men offer comments and critiques in sessions. [7] This section in the book will also explore the organizational make-up of the Conference. [8]

Sociologists deal with the study of social processes and social organization. They are less likely to study "why" people do things as cartographers seek to understand why this or that morphology is present. The study of social processes leads one to look at society, or any group for that matter, as a form of agreement on how people cooperate along the lines of mutually-agreed upon meanings that lead to interaction. The study of social processes also allows us to explore what happens when people break those implicit norms.

The study of social organization looks at society as not merely an aggregate of individuals, but as something over and beyond the individuals that compose it. To illustrate such a point, one needs to simply think back to all the conferences you have attended: even though the number and kinds of people were the same (and even perhaps the topics), each conference has its own culture that extends beyond the individuals that compose it. When it comes down to gender relations, as in my study, it is not so much what women do and men do, but rather the larger context, a context that still presumes a male outlook as normative. [9] No one individual is at "fault", for both women and men follow the larger context (Johnson, 1997). It makes no sense to blame men (or women) for our present social organization. In some respects, social organization is like a household that both the powerful and the not-so powerful cooperate to maintain. It is this way of accomplishing things together that garners the interest of the sociologist, without blame, censure, or praise.

My research is part of a larger project that seeks to establish the parameters of the historical and contemporary world of cartographers, with special reference to gender. Exploring the spatial-perceptual differences of women and men, however, is not as much interest to me as exploring the more deeply embedded social structures that govern our lives, collectively and individually. Similarly, finding out whether men are as likely to

ask for directions as women is also of little interest. As a sociologist looking at the world of cartography, I am curious about the social arrangements that create the world as you know it. Presumably, a more detailed participant-observation study of that world will deepen my knowledge of it and, hopefully, reveal the many taken-for-granted attitudes and behaviours that seem to reinforce that world.

(This research is funded by the Social Sciences and Humanities Research Council of Canada.)

NOTES

[1] I owe a particular debt to Dr. Eva Siekierska, Chair of the ICA Commission on Gender and Cartography, who has been a constant source of encouragement and advice. Ms Elizabeth Hamilton, Data Librarian at the University of New Brunswick in Fredericton, offered suggestions which, no doubt, improved this paper.

[2] I would be pleased to provide a current bibliography dealing with gender and cartography. Please contact the author at Department of Sociology, University of New Brunswick, Fredericton, New Brunswick, Canada E3A 5A6.

[3] A reviewer of a draft of this article commented that "the ACMLA audience is more familiar with the sociology model of a conference than the ICA model. Our fees are in your range and the conference bags are plastic, during bad years". Similarly, one participant in the ICA Conference noted that the economy of a conference has a lot to do with the links to "big business". Library conferences, she observed, are usually "cotton-twill affairs, unless you are going to a conference of law librarians, in which case the patina of hefty legal fees and the scent of genuine leather seems to waft through the corridors".

[4] A large-screen presentation on "GeoConnections" during a plenary session offered the economic rationale that this unique Canadian geo-information base would create "16,000 jobs" and generate a $26 billion industry" (Fieldnotes, 16 Aug. 1999: 1).

[5] I am grateful for the encouragement I received from Alice Hudson, Chief Map Librarian at the New York Public Library, who shared the podium and who is producing the finest materials on the history of women in cartography (see, for example, Hudson, 1989 and 1999).

[6] The presence of security guards at the main entrance of the hall inadvertently reinforces the analogy.

[7] In a few instances, I have noted that when men make a comment about a paper that has been just presented, the male presentor is more likely to say something like, "Now, that is an interesting idea...." When a woman would comment on a particular point raised in a paper, the male presentor would tend to say, "I'm glad that my paper provoked such an insight!"

[8] One-third of the ICA Conference Organizing Committee were women, and nearly half of the volunteers (i.e. students) were women. Of the 35 members of staff from Natural Resources Canada, there were ten women (29%) (Email from Susan Mrak, Natural Resources Canada, to Will C. van den Hoonaard, 7 Sept. 1999).

[9] I intend to devote a separate section to the International Children's Map Exhibit at the Conference, but I did consider the fact that girls made 62% of the 125 maps (I could not identify the gender of two young map makers), while the proportion of women in mapmaking in still relatively low. For example, some 14% of delegates attending the 12th General Assembly at the ICA Conference were women (Fieldnotes, 21 Aug. 1999: 1) and 28.4% of Canadian mappers in 1996 were women (Statistics Canada, 1998: 2). The high proportion of young girls submitting maps to the international map contest was due, according to one Bulgarian delegate whom I had interviewed, to the fact that young boys looked down at hand-drawing maps (which was the purpose of the international competition) and favoured the use of technology, i.e. computers, in drawing maps which, in effect. disqualified them from the contest.

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Editor's Note: This photograph originally appeared in Bulletin 106. Having now read Dr. van den Hoonaard's article, I realize that it is more deeply significant than originally suspected. Note the position of the ACMLA booth in the "Beyond the Moat" region of the exhibit hall. Notice the costumes and genders of the ACMLA tribe members — obviously no "booth bunnies" here.

RESEARCH QUERY:

CANADIAN WOMEN IN MAPS — LOOKING FOR THE PIONEERS

Alice Hudson
New York Public Library

Despite years of work on tracking down pre-twentieth century women involved in mapmaking, only one woman working in Canada has come to light, and that is Devon-born Elizabeth Simcoe, about whom Mary Ritzlin wrote in *Meridian, The Journal of the Map and Geography Round Table* of the American Library Association, Issue No. 2, 1989, pp.8-10. Simcoe probably is representative of many women who accompanied husbands, fathers, acquaintances, on various expeditions or treks, and provided the all-important secretarial and journal keeping tasks [for free!] as a function of family duty or friendship.

The United States and Canada like to tout the open border, and the flow of information and goods that cross the border. But scholarly and intellectual tools somehow hit a barrier at the border. It is clear to me that there are major school geographies, school atlases, commercial and privately published maps and atlases from mapmakers and firms about which I have never learned. However, on a local basis, in your town, your county, your province, your nation—I have a feeling there are women mapmakers that might come to mind.

So who else was out there in the field? The women are not easy to find, as they sometimes, particularly in the nineteenth century, worked anonymously or under pseudonyms or vague initials, as in prolific New Yorker, S. S. Cornell, author or designer of numerous school atlases and geographies.

School atlases bring up another category where women are to be found. Women who founded schools or academies for teaching young girls, often ended up creating teaching tools for those academies. A model of note is Emma Willard. Her original schoolhouse is located on the campus of Middlebury College in Vermont. She created school atlases which were very popular in the nineteenth century. Were there similar schools for girls in Canada, and were particular curriculum materials created for them, which later broke into the mass market?

Almanac publishers, such as Lydia R. Bailey, who was the city printer for Philadelphia from ca. 1830-50, often included maps in their annual publications. Canadian women as publishers of government publications, and useful tools such as almanacs, are out there. Who are they? Where are they?

Michigan maps were published by the Farmer firm, and the widow, Roxanne, carried on the business for some time after the death of her husband. Surely this could have happened in Canada?

As Mary Ritzlin and I continue to move ever so slowly toward a publication of some sort, we are eager to have more than the English Elizabeth Simcoe representing the Canadian front. The same, of course, goes for many countries, but in most cases, we have multiple representation. Canada is close by, and we have so little! Help!

By mapmakers, we mean in the widest sense, persons involved in creating maps, publishing, selling, engraving, coloring, and so forth. We go along with Ronald Vere Tooley, of dictionary fame, and are expansive rather than exclusive in our search for mapmakers.

Following are some fruitful places to look: antiquarian dealer catalogs, scanning the

imprints especially, for publishers; scanning all the names on title pages, at map borders and in cartouches; scanning all the plates in antiquarian atlases for names not on the title page; biographies of mapmakers, for word of the disposition of their estates; scanning indexes to regional histories of cartography for female names [although these have often been shown to be in the text and often not in the same indexes!]

Although interesting, schoolroom exercises, resulting in some really wonderful, beautifully drawn maps, are not of interest for this project, as these were not adult, work-related products.

We appreciate the support over the years from fellow mapfolk, who have sent us names, citations, best guesses, corrections, and so forth. The latest report on our joint effort can be found in the Ottawa ICA 1999 ACI conference proceedings, recently published, and available in hard copy and on CD-ROM. Not being academics, we continue to work on the publication of a dictionary of the ladies in our so-called spare time, of which, there is never enough. We thank you in advance, for your time, and for Canadian names that come to mind, and that you might send us for inclusion in our project to create a dictionary/directory of pre-twentieth century women mapmakers.

We can be reached via my email at ahudson@nypl.org, or at the two mailing addresses below.

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Coming soon....

New Historical Maps

Toronto 1876
Winnipeg 1881

Information on CARTA as soon as they are available, and in the next issue of the ACMLA *Bulletin*

HIGHLIGHTS IN CANADIAN CARTOGRAPHY

• As early as 1500, maps were showing the newly discovered lands to the west of the Old World. From 1506 to the end of the century, maps of the Americas provided an increasingly precise image of the continent and Canada's Atlantic regions.

• Knowledge about the West from the Great Lakes to the Rockies and the Arctic Ocean was greatly improved between 1760 and 1790, owing to the expeditions of fur traders with the Hudson's Bay Company and the Northwest Company.

• Maps drawn by the native peoples are few in number and rare, and unknown to the vast majority of the public. Yet the native peoples had a thorough knowledge of the country and its coastal waters - they could visualize them, and draw them on various short-lived or durable surfaces. The information they provided enabled European explorers to understand the country and to reach new regions more easily.

• *The Geological Map of Canada* prepared by Sir William Logan, founder of the Geological Survey of Canada, and issued in 1865, was engraved in Paris and hand-coloured. The map has been updated twice - once in 1969 and again in 1996, with a digital version on CD-ROM released in 1997.

• Military mapping in Canada dates back to the earliest days of British and French development when large-scale topographical maps were made in the vicinity of garrison towns. In WWI, surveyors were employed making sketches of enemy trench positions while held aloft in tethered balloons and surveying artillery gun positions.

• The spectacular progress made in the field of cartography in the 20th century has been largely due to aerial photography, which came into use during the First World War. In 1955, a 28 person field party, utilizing two long-range Sikorsky S-55 helicopters, accomplished the reconnaissance topographic mapping of about 2,590,000 km² of land in a 5,180,000 km² zone in the Canadian Arctic within a single field season.

• The Canadian Geographic Information System (CGIS), the world's first GIS, was initiated by the Agriculture Rehabilitation and Development Agency in 1963.

• Satellites have brought increased accuracy and fidelity to the reproduction of the continents, and provide important data on atmospheric and weather conditions. The Global Positioning System (GPS) was first used in Canada in 1980.

• Modern digital technology has made it increasingly possible to make maps on demand. This is particularly important in providing support services following natural disasters, such as the Saguenay and Red River floods and the Eastern Ontario ice storm of 1998.

• Thematic maps, such as the *National Atlas of Canada*, have enjoyed particularly spectacular development in the 20th century, with a proliferation of such themes as environmental, historical, spatial, meteorological, political, and social.

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[Submitted by Beverly Chen, ICA International Cartographic Conference 1999 Media Coordinator. Highlights prepared by Louis Cardinal, National Archives, and Le'Anne Frieday, Earth Sciences Sector, NRCan.]

FAITS SAILLANTS DE LA CARTOGRAPHIE AU CANADA

• Dès l'an 1500, les nouvelles terres découvertes à l'ouest de l'Ancien Monde étaient représentées sur des cartes. Les cartes des Amériques dressées entre 1506 et la fin du XVI[e] siècle donnèrent une image de plus en plus précise du continent et des régions du Canada bordant l'Atlantique.

• Les expéditions des commerçants de pelleteries au service de la Compagnie de la Baie d'Hudson et de la Compagnie du Nord-Ouest, entre 1760 et 1790, permirent d'accroître considérablement la connaissance des régions de l'Ouest, depuis les Grands Lacs jusqu'aux Rocheuses et l'océan Arctique.

• Les cartes qu'ont dressées les autochtones sont fort peu nombreuses et rares et très peu de gens en connaissent l'existence. Pourtant les indigènes avaient une connaissance approfondie de leur pays et de ses eaux côtières - ils pouvaient les visualiser et les tracer sur diverses surfaces durables ou peu durables. Les renseignements qui y figuraient permirent aux explorateurs européens de mieux comprendre le pays et de se rendre plus facilement dans de nouvelles contrées.

• *La carte géologique du Canada* qu'a dressée Sir William Logan, fondateur de la Commission géologique du Canada, et qui a été publiée en 1865, fut gravée à Paris et colorée à la main. La carte a fait l'objet d'une mise à jour en deux occasions, soit en 1969, puis en 1996. Une version numérique a été lancée sur disque cédérom en 1997.

• La cartographie militaire remonte aux premiers jours de l'ère du développement industriel en Angleterre et en France alors que les ingénieurs commencèrent à dresser des cartes topographiques à grande échelle des terres voisines des villes de garnison. Au cours de la Première Guerre mondiale, des spécialistes étaient embauchés pour tracer des croquis des positions ennemies en les survolant à bord de ballons captifs et en repérant les positions des pièces d'artillerie.

• Les progrès spectaculaires réalisés dans le domaine de la cartographie au cours du XX[e] siècle ont été rendus possibles surtout grâce à la photographie aérienne dont l'avènement remonte à l'époque de la Première Guerre mondiale. En 1955, à bord de deux hélicoptères Sikorsky S-55 à long rayon d'action, une équipe volante composée de 28 personnes effectua en une seule saison de travail un levé topographique de reconnaisance d'un territoire d'une superficie d'environ 2 590 000 km² dans une zone de l'Arctique canadien couvrant 5 180 000 km².

• L'Agence de Réhabilitation et de Développement de l'Agriculture a créé en 1963 le Système canadien d'information géographique (SCIG), le premier système de ce genre dans le monde.

• Les satellites ont permis d'accroître la précision et la fidélité de reproduction des continents. Ils fournissent aussi des données importantes sur les conditions atmosphériques et météorologiques. C'est en 1980 que le Canada utilisait pour la première fois le Système de positionnement mondial (GPS).

• La technologie numérique moderne a rendu possible la production de cartes à la demande. Cette activité est particulièrement importante en vue de l'intervention de services de soutien à la suite de sinistres naturels, par exemple les inondations qu'ont connues les régions du Saguenay et de la rivière Rouge ou encore la tempête de verglas qu'a subie l'est de l'Ontario en 1998.

• Les cartes thématiques, comme *l'atlas national du Canada*, ont connu un essor spectaculaire au cours du XX[e] siècle, compte tenu de la prolifération de sujets comme l'environnement, l'histoire, l'espace, la météorologie, la politique et la sociologie.

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[Soumis par Beverly Chen, coordonnatrice de presse, ACI Conférence cartographique internationale 1999. Points saillants préparés par Louis Cardinal, Archives nationales et par Le'Anne Frieday, Secteur des sciences de la Terre, RNCan.]

ACMLA HONOURS AWARD

The Awards Committee invites nominations for the ACMLA Honours Award. According to the guidelines for the award, the nominee should be a person who has made an outstanding contribution in the field of map librarianship. The contribution may either be for a specific activity or for general services and contributions such as continued membership in the Association with active participation either as an executive officer, committee chairperson, or committee member. Normally, membership in ACMLA is a prerequisite, however, that does not preclude considering outstanding non-members.

Nominations close on March 31, 2000.
Please send your nominations to:

Grace Welch,
Chairperson, Awards Committee,
Map Library, Morisset Library
University of Ottawa
Ottawa, Ontario K1N 9A5
or via email at:
gwelch@uottawa.ca

COMITÉ DES PRIX ET MÉRITES

Le comité des prix et mérites invite les membres de l'ACACC à soumettre la candidature du membre qui, à leur avis, est admissible au Prix d'excellence. Selon les règles du concours, l'heureux(se) élu(e) sera toute personne dont le nom a été retenue en vertu de sa participation considérable au développement de la profession de cartothécaire. Sa contribution peut se quantifier de différentes façons: activitiés particulières ou générales, participation soutenue au sein de l'Association en tant que membre d'autres comités. Bien que ce concours s'adresse surtout et avant tout aux adhérents de l'Association, les non-membres dont le dossier s'apparente á celui des membres réguliers de l'ACACC auront droit á une nomination analogue.

Date d'échéance du concours: 31 mars 2000.
Veuillez faire parvenir vos suggestions de candidats à:

Grace Welch, Présidente,
Comité des prix et mérites, ACACC
Cartothèque, bibliothèque Morisset
Université d'Ottawa
Ottawa, Ontario K1N 9A5
ou via le courrier électronique a:
gwelch@uottawa.ca

ACMLA PAPER AWARD

The Awards Committee invites nominations for the ACMLA Paper Award. To be nominated for the Paper Award, which carrries a $200.00 monetary prize, a feature article by one or more authors consisting of at least three pages in length, must have appeared in issues 101-103 of the ACMLA Bulletin. We are looking for articles that make a solid contribution to map librarianship, including cartobibliographies. Originality, uniqueness of subject matter and depth of research will be taken into consideration.

Nominations close on March 31, 2000.
Please send your nominations to:

Grace Welch,
Chairperson, Awards Committee,
Map Library, Morisset Library
University of Ottawa
Ottawa, Ontario K1N 9A5
or via email at:
gwelch@uottawa.ca

PRIX DU MEILLEUR ESSAI

Le comité des prix et mérites invite également les membres de l'ACACC à soumettre la candidature du membre qui, à leur avis, est admissible au Prix du meilleur essai. Selon les règles du concours, l'heureux(se) élu(e), qui recevra une bourse de 200 $, devra avoir publié un article d'au moins trois pages au sein d'une édition du Bulletin de l'ACACC (no. 101 à 103). Le comité recherche principalement les articles ou les carto-bibliographies, qui alimentent et soutiennent le développement de la discipline. Les articles seront jugés selon les critères d'originalité du thème choisi et du niveau de recherche.

Date d'échéance du concours: 31 mars 2000.
Veuillez faire parvenir vos suggestions de candidats à:

Grace Welch, Présidente,
Comité des prix et mérites, ACACC
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NOUVELLES REGIONALES

Pierre Roy

Terre-Neuve

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Alberta est en Norvège, à l'Université de Bergen du 6 février au 18 mai 2000, dans le cadre d'un échange de personnel. Elle consulte et étudie les services offerts à la bibliothèque qui pourraient être utiles aux chercheurs de l'Université Memorial, particulièrement à ceux de la Cartothèque. Elle occupe un bureau à la bibliothèque des sciences, mais passera une partie de son temps à la bibliothèque principale où se trouve une collection de cartes anciennes, au Département de géographie et au Service des données du Centre norvégien de sciences sociales pour observer leurs méthodes de travail.

Joanne Costello est revenue au travail à temps plein depuis le 7 février 2000. Suanne Reid continue à travailler sur un horaire de 20 heures par semaine et Dawn Learning restera avec nous à temps plein jusqu'à la mi-avril. Nous avons aussi des étudiants qui travaillent sur des projets spéciaux comme l'inventaire des microfiches obtenues des Archives nationales qui sera placé sur notre site Web, l'édition et la modification de notices de cartes marines dans GEODEX et la bonification de cartes topographiques numériques.

En date du 3 janvier 2000, sept autres universités des Maritimes ont adhéré à un groupe ayant pris des ententes avec Vince Gray, de l'Université Western Ontario, dans le but d'obtenir à moindre coût l'accès à un site Web diffusant un large éventail de données de l'IDD. L'Université Memorial gère les frais de gestion de l'accès.

Alberta a préparé une courte présentation sur la cartographie ancienne de Terre-Neuve pour le site Web du projet "Héritage de Terre-Neuve". Le tout se compose d'un bref texte d'introduction et des descriptions de onze cartes couvrant la période de 1500 à 1775, ainsi qu'une courte bibliographie. Des liens vers des images des cartes sont prévus.

Le site Web de la Cartothèque et du Centre des médias et des données inclut maintenant les statistiques annuelles de 1998-1999. Pour une courte période de temps, nous avons été placés à l'intérieur de la Division des services de l'information à cause de la convergence de points communs tel que les ressources électroniques. Toutefois, un problème administratif important mais non prévu nous a forcés à revenir à l'ancienne structure hiérarchique. Cet automne, Alberta continuera à travailler au comptoir d'information.

Québec

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La Cartothèque a acquis une collection de 177 orthophotos numériques datant de 1999 de la région de Montréal, en format TIFF et comprise sur 18 CD-ROMs (60 Meg par photo). Les points de géoréférence nord-ouest et sud-est des photos sont déclarés dans un système de coordonnées MTM (Mercator Transverse Modifié) qui correspond au système employé pour la production des cartes topographiques par RNQuébec. Soulignons que le ministère des ressources naturelles du Québec offre 30 % de rabais aux universités pour l'achat de données numériques. Notre stagiaire en SIG, Rosa Orlandini, prépare un index et un guide pour faciliter le choix et l'utilisation des photos. Nous avons aussi signé l'entente d'achat de données topographiques numériques avec RNCanada et un professeur s'en est prévalu. Nous comptons acheter

la topographie numérique de la très grande région de Montréal au 1 :250 000 dès l'an projet ainsi que la région métropolitaine de Montréal à l'échelle du 1 :50 000. L'arrivée prochaine d'un nouvel ordinateur nous permettra d'offrir le transfert des données sur lecteur Zip en plus du transfert FTP.

Ontario

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Malgré une baisse du nombre de demandes de référence pour les cartes cette année, nous avons constaté une croissance dans l'utilisation de nos données géospatiales numériques. Une partie de cette affluence provient du Département de géographie et d'études environnementales, mais est aussi due à la découverte de cette ressource par le Département de génie civil et d'architecture. L'utilisation conjointe des orthophotos numériques de la Commission de la capitale nationale et des données géospatiales de la Municipalité régionale d'Ottawa-Carleton s'est avérée un succès. Nous avons récemment acquis de la Commission de la capitale nationale de nouveaux fichiers géographiques numériques à l'échelle du 1 :25 000 couvrant le parc de la Gatineau et la ceinture verte de la ville. Une journée dédiée aux SIGs s'est tenue en novembre 1999 avec la collaboration de la Cartothèque de l'Université d'Ottawa et d'ESRI Canada. Nous avons reçu plus de 400 visiteurs .

Depuis novembre 1999, des efforts ont été consentis pour placer sur Internet la collection de cartes produites par des enfants dans le cadre du "ICA's Barbara Petchenik Children's Map Competition". Suite à une demande de financement acceptée par Industrie Canada, le Centre a engagé des étudiants pour numériser les cartes reçues entre 1993 et 1999 ainsi que toutes les inscriptions canadiennes comprises entre 1995 et 1999. De plus, une base de données indexée a été produite pour la recherche des cartes. Le projet, intitulé "Les enfants cartographient leur monde" est appelé à faire partie des collections numériques du réseau canadien Rescol. Le tout devrait être complété en mars 2000 et le lancement sera annoncé sur CARTA. Le projet sera abrité sur le site Web de l'Université Carleton et sur celui des collections numériques du Canada.

University d'Ottawa
Grace Welch
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Le professeur Hugh French, du Département de géographie a donné à la Cartothèque une magnifique collection de 14 cartes historiques représentant des sections de l'Europe et le Canada avant la Confédération. Elles ont été évaluées à 4 100 $ et seront exhibées en permanence à la Cartothèque.

En janvier 2000, nous avons reçu les deux doubles numéros du périodique *Cataloging and Classification Quarterly* dédiés au catalogage et à la classification du document cartographique (V. 27, no 1/2 et no 3/4). Le numéro 3/4 contient l'article de Grace Welch et de Frank Williams intitulé "Cataloguing Digital Cartographic Materials". Les deux séries seront aussi publiées dans une monographie devant sortir ce printemps.

Le catalogage des cartes de la province de Québec avance rapidement et est presque terminé. Martine Rocheleau et Frank Williams ont revu les étiquettes de cote des villes du Québec afin de rendre compte des différentes orthographes du mot "Saint" et d'inclure les villes qui n'étaient pas inventoriées.

Grace, avec la contribution de Tim Mark, a écrit un court article dans le Bulletin local sur l'entente avec RNCan permettant l'achat, avec un rabais éducationnel, des cartes topographiques numériques produites par ce ministère. Avec Trudy Bodak, Grace a aussi publié un article sur le chargement des notices de cartes dans le système AMICUS.

Le 8 décembre 1999, Grace a assisté à la première réunion du comité consultatif sur les politiques, du groupe GeoConnections. Le groupe comprend 22 représentants principalement des milieux gouvernementaux et de la géomatique. Grace est l'une des deux représentantes du secteur académique. Les objectifs du groupe sont:

- Développer et promouvoir des politiques qui faciliteront l'accès et l'utilisation des données géospatialesprovenant du gouvernement et d'autres secteurs.
- Identifier et résoudre les problèmes liés aux licences de distribution
- Promouvoir et faciliter le partage des données
- Développer différents partenariats.
- Simplifier l'accès aux données géospatiales et en diminuer les coûts.

Le groupe a décidé de financer une étude sur "l'économie des données géospatiales".

La Commission de la capitale nationale et la municipalité régionale d'Ottawa-Carleton continuent d'approvisionner les deux universités d'Ottawa en données géospatiales numériques, selon l'entente préalablement conclue. Nous avons reçu récemment la base de cartes au 1: 2000 de la municipalité régionale ainsi qu'une carte des sols. La Commission de la Capitale nationale nous a fait parvenir des couches topographiques au 1:25 000, des fichiers de limites administratives et plusieurs thèmes reliés à la récréation.

Ressources naturelles Canada,
Centre d'information sur les sciences de la Terre
Irène Kumar
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Après vingt années de service auprès du Secteur des sciences de la Terre de Ressources Naturelles Canada, Rosemary Swan, chef adjointe du Centre d'information sur les sciences de la Terre (CIST), a quitté son poste pour joindre la bibliothèque Morisset de l'Université d'Ottawa, en tant que gestionnaire responsable des réseaux informatiques de la bibliothèque.

Université de Waterloo
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Le personnel de la Cartothèque a subi des changements au cours des derniers mois. Le 24 janvier 2000, Agnes Kayko est revenue d'un congé de maternité et Ann Naese, qui travaille avec nous depuis 1993, nous quittera pour le service aux usagers de la bibliothèque Porter dès le 6 mars 2000. L'expertise d'Ann dans le domaine des SIGs et des publications d'aide à l'usager nous fera grandement défaut. Ann est aussi notre lien avec le Service des publications gouvernementales puisqu'elle en occupe le comptoir d'information six heures par semaine.

Les membres du personnel de la Cartothèque sont engagés dans des comités et des projets qui ne sont pas nécessairement liés au fonctionnement de notre service. Amy Chang, bibliothécaire, est membre du groupe de contrôle bibliographique, Ann Naese, aide-bibliothécaire, fait partie du Comité de formation des utilisateurs; Mark Spencer, commis, est membre du groupe travaillant sur les infrastructures et Richard Pinnell fait partie du groupe de Service de données électroniques, du comité de coordination des ressources de données pour le "TriUniversity", du comité de griefs du personnel de l'Université et aussi du comité de révision du service de diffusion de l'information de l'Université (UWInfo).

Nous remercions la Commission de la Capitale nationale qui nous a donné les orthophotos numériques et des fichiers vectoriels de la région d'Ottawa. Nous avons aussi acheté ou transféré d'autres départements 17 jeux de données de modèles numériques d'élévation de terrain, selon les termes de la nouvelle entente conclue avec RNCan pour les établissements d'enseignement. Nous avons aussi commandé les orthophotos numériques de la ville de Toronto et le "streetCD" de Geolytics au New Jersey.

Nous ne sommes pas satisfaits des mesures de sécurité entourant le poste public de SIG. Nous utilisons présentement le logiciel WinU afin de prévenir le vandalisme ou la perte accidentelle de données, mais ce logiciel nous cause d'autres problèmes. Le fait d'être passé à Windows 98 la semaine dernière a amélioré la situation. Toutefois, on installera bientôt un nouveau produit: GoBack de HotFiles qui conserve un fichierdes modifications effectuées sur le disque dur. Tous les ordinateurs du personnel de la Cartothèque ont été changés pour des Pentium III cadencés à 450 Mhz. Certains ont été pourvus de "DreamWeaver", un éditeur de pages Web, et certains ont une connexion à notre

serveur de données Unix afin de télécharger facilement des données sur la station de travail, données qui seront ensuite remises aux utilisateurs.

Nous avons récemment terminé de placer sur notre site Web des images d'index représentant les régions couvertes par notre collection de photos aériennes. Vous pouvez le constater à l'adresse:
http://www.lib.uwaterloo.ca/locations/umd/photos/ap.html

Pour terminer, mentionnons deux publications créées par Ann Naese: un guide d'aide à l'usager pour nos orthophotos numériques du Toronto métropolitain et un autre guide pour les orthophotos de la ville de Kitchener.

Université de Western Ontario
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La documentation concernant le comité consultatif de l'Atlas national du Canada a été placée à l'adresse suivante :
http://atlas.gc.ca/english/about_us/index_nacac_e.html.
Vous y retrouverez le mandat du comité, le nom des membres, l'agenda et les procès-verbaux ainsi que les discussions de la rencontre de novembre 1999 à laquelle Cheryl assistait.

L'Université a signé l'entente concernant l'achat des données topographiques numériques de RNCan. La responsable officielle de la gestion de l'entente sera la cartothécaire malgré que la Cartothèque ne fasse pas partie du réseau des bibliothèques de l'université. Un chercheur du Département de géographie a déjà placé une commande pour 34 jeux de données à l'échelle du 1 :50 000, couvrant le sud-ouest de l'Ontario.

Une autre entente signée par l'Université et impliquant la Cartothèque est le projet présenté par l'Université de Calgary au Fond canadien pour l'innovation, qui créerait une bibliothèque de données numériques en environnement et en données géospatiales. Le directeur des bibliothèques a accepté de supporter les coûts inhérents au projet alors que la Cartothèque contribuera au niveau de l'expertise et du temps de traitement.

Conséquence de la signature de ces deux ententes, la demande de données spatiales numériques devrait augmenter à la Cartothèque.

Nous avons acquis deux nouvelles séries de cartes sur support papier à l'échelle du 1 :50 000, une première de la Slovénie comprenant 64 feuilles et une autre de la péninsule malaise incluant 113 feuilles.

Une récente visite de Cheryl à la bibliothèque publique de London lui a permis de découvrir de nouvelles ressources de documentation spatiale historique sur la ville et ses environs.

Alberta

Université de l'Alberta
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L'activité majeure qui occupe les membres de la Cartothèque ainsi que ceux qui gravitent autour est sans conteste la préparation de "Carto 2000", la conférence conjointe de l'ACACC, de l'ACC et du WAML qui aura lieu à l'Université de l'Alberta, à Edmonton, du 31 mai au 4 juin 2000. L'équipe locale de planification de l'événement s'est activée, depuis l'automne dernier, à préparer une conférence digne du programmedéveloppé par Roger Wheate, Cathy Moulder et Linda Zeller. Pour plus de détails, veuillez consulter notre site Web:
http://www.library.ualberta.ca/maps2000

Durant l'automne, la Cartothèque William C. Wonders a reçu une somme de 5000 $ afin de mettre à jour sa collection de cartes de l'Alberta. Nous avons ainsi acquis la série complète "Resource Base" au 1: 50 000 ainsi que plusieurs autres cartes provenant de différents services provinciaux, plusieurs Dossiers publics de la Commission géologique du Canada, une nouvelle carte de la ville d'Edmonton et plusieurs autres cartes de l'Alberta. Ces documents sont présentement traités et les notices ajoutées au catalogue en ligne du Service des bibliothèques, GATE.

REGIONAL NEWS

Pierre Roy

Newfoundland

Memorial University of Newfoundland
Alberta Auringer Wood
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Alberta is in Norway at the University of Bergen from February 6 through May 18 as an Exchange Scholar. She is consulting with librarians about library services that would be of interest to Memorial University researchers, particularly with regard to the map collections. She has an office in the Science Library, but will also spend time in the main library where there is a collection of early maps, in the Geography Department to see what they have, and in the Norwegian Social Sciences Data Service to observe their methods.

Joanne Costello returned to work full-time on February 7th and is enjoying resumption of her duties. Suanne Reid continues on a 20 hour per week schedule, while Dawn Learning will still be with us full-time until around the middle of April. We have student assistants working on special projects such as preparing some of the Skelton Papers listings and our listings of microfiche from the National Archives for the web pages, doing additional work with the digital topographic maps, and editing and redoing some of the nautical chart records in GEODEX.

Beginning on January 3, seven other Atlantic university libraries are participating in IDLS (Internet Data Library System) as part of a group access organized in conjunction with Vince Gray of the University of Western Ontario. This will result in low cost access to a large variety of DLI materials through the web for all the paricipants. Memorial University is handling the invoicing for the access.

Alberta has prepared a short item on the early cartography of Newfoundland for the Newfoundland Heritage Web Pages It includes a short text and descriptions of eleven maps from the time period of 1500-1775, plus a brief bibliography. Links to reproductions of the maps will be included.

The Map Library and Media and Data Centre Web pages now include the annual statistics for 1998-1999. For a brief period of time, we were incorporated with the Information Services Division because of the convergence of areas of interest, such as electronic resources. However, an unforeseen administrative issue caused us to revert to the previous structure. In the fall, Alberta will be working on the Information Desk however, as well as possibly participating in Bibliographic Instruction.

Quebec

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The Map Library recently acquired 177 digital orthophotos of the Montreal region for 1999. The photos are in TIFF format, are sized at 60 Meg each and have been placed on 18 CD-ROMs. The N-W and S-E points of each photo have geo-references in MTM (Mercator Transverse Modified) system, which is the projection used by NRQuebec to produce their topographic maps. Note that the Quebec Ministry of Natural Resources offers a discount of 30% to the universities buying geospatial data. Rosa Orlandini, a student from the Department of Geography on a training course here, will prepare an index map of the orthophotos and a guide for helping users with the choice and use of the photos. We signed the licence with NRCan for acquiring digital topographic maps at the educational price, and we want to buy the greater region of Montreal at 1 :250 000 scale and next

year metropolitan Montreal at 1 :50 000 scale. The new computer will be soon "on duty", and the Zip drive will offer an alternative to the FTP for downloading data to our patrons.

Ontario

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Despite a drop in the total number of map reference queries this year, the staff of MADGIC is still keeping busy with the increased number of clients using our digital geospatial data. Some of this is fueled by the growing Geographic Information Program in the Department of Geography and Environmental Studies, but is also due in part to the discovery of this resource by Civil Engineering and Architecture. The introduction of orthophotographs from the National Capital Commission for use in conjunction with geospatial data from the Regional Municipality of Ottawa-Carleton has been very successful. The NCC has recently provided us with new geospatial files at a scale of 1:25,000 covering the Gatineau Park and Greenbelt areas that will also be very popular with our clients. At GIS Day events held in November in cooperation with the University of Ottawa Map Library and ESRI Canada, more than 400 visitors to MADGIC had a chance to investigate the value of GIS resources for educational use.

Since November, a great deal of time has been devoted to the project of bringing to the Internet the full collection of children's maps submitted to the ICA's Barbara Petchenik Children's Map Competition which are archived for conservation at Carleton University. A funding proposal was made to Industry Canada resulting in a contract to MADGIC that enabled us to hire students to scan the competition entries from 1993 to 1999, as well as all Canadian entries for 1995 and 1999. In addition, a searchable database was developed for use with the map images. The project, called "Children Map Their World" is to be mounted as part of Canada's Digital Collections on SchoolNet. It is due for completion in March and will be accessible through both the Carleton University Map website and the Canada's Digital Collections website. The launch will be announced on CARTA.

University of Ottawa
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The Map Library recently received a collection of 14 beautifully framed historical maps of parts of Europe and pre-confederation Canada, donated by Dr. Hugh French of the Geography Department. They were appraised for a sum of $4,100 and they will soon be permanently hung in the Map Library.

The two double issues of *Cataloging and Classification Quarterly* devoted to the cataloguing and classification of cartographic materials were received in January (v. 27, no. 1 /2 and 3 /4). Number 3/4 contains the article by Grace Welch and Frank Williams entitled "Cataloguing Digital Cartographic Materials". The double issues are also being released as a monograph *Maps and Related Cartographic Materials: Cataloging, Classification, and Bibliographic Control* which will appear this spring.

Cataloguing of the province of Quebec has progressed very well and is now nearly complete. Martine Rocheleau and Frank Williams have revised the list of cutters for Quebec cities, to differentiate between the different spellings of Saint and include cities not previously listed.

Grace (with Tim Mark) contributed a short article to the local CASLIS newsletter on the agreement with NRCan for educational pricing of digital topographic maps. With Trudy Bodak she also prepared a short article for the *NL News* on the loading of map records into AMICUS.

On December 8, Grace attended the first meeting of the Policy Advisory Node for GeoConnections. She is one of two representatives from the academic sector; the group is comprised of 22 representatives, primarily from government and geomatics industry. The objectives of this group are:

- Developing and promoting policies that facilitate access to and use of geospatial data from any level of government or other sectors;
- Identifying and resolving licensing and distribution issues;
- Promoting and facilitating data sharing;
- Expanding partnerships;
- Simplifying access to, and lowering the cost of, geospatial data

As the first order of business, the group is funding a study on the "Economics of Geospatial Data". At this first meeting, the terms of reference for the RFP for the study were discussed. The RFP should be issued in early March.

The National Capital Commission and Regional Municipality of Ottawa-Carleton continue to provide additional GIS datasets under their license with the two Ottawa universities. We recently received CD-ROMS containing the RMOC 1:2000 database, a soil map of the RMOC and from the NCC, 1:25,000 topographic layers, boundary files and several recreational themes.

Natural Resources Canada,
Earth Sciences Information Centre
Irène Kumar
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After twenty years of service to the Earth Sciences Sector of Natural Resources Canada, Rosemary Swan, associate head of the Earth Sciences Information Centre (ESIC), has left her position to take on a new assignment at the Morisset Library, University of Ottawa, where she will be the manager of library networks.

University of Waterloo
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Staffing in the UMD Library has been problematic these past few months. One staff member, Agnes Kayko (Library Assistant), was away on maternity leave until January 24 and another staff member, Ann Naese (Library Assistant), who has been with this library since 1993 is transferring on March 6 to the User Services Department in the Porter Library. We will greatly miss Ann's expertise in the areas of GIS and user publications. She is also our link with the Government Publications Department since she staffed the GP Information Desk for 6 hours each week.

Members of this library are actively involved in committee and project work that is not necessarily directly related to the operation of the UMD Library. Amy Chan (Librarian, Cataloguing) remains a member of the Bibliographic Management Group, Ann Naese (Library Assistant) is a member of the User Education Committee, Mark Spencer (Library Clerk) is a member of the Infrastructure Process Group, and Richard Pinnell is a member of the Electronic Data Service Group, the TriUniversity Data Resources Coordinating Committee, the University's Committee of Inquiry on Staff Grievances, and the University's UWinfo ad hoc Review Committee.

Notable additions to the collection this past few months were the digital orthophoto images and vector files of the NCR generously provided to us at no cost by the National Capital Commission in Ottawa. Other significant additions were the 17 Canadian Digital Elevation Datasets (CDED) purchased from NRCan or transferred from other UW academic departments under the terms of the new licensing agreement with NRCan. On order are the 1997 digital orthophoto images for Metropolitan Toronto (now the City of Toronto) and the StreetCD electronic data from GeoLytics in New Jersey.

We remain frustrated by the security arrangements on our public GIS PC. We are using WinU security software to prevent vandalism or accidental loss of software or data, and yet this security software is causing us other problems. Last week the operating system was upgraded to Win98 and that seems to have helped. However, I am still waiting for a new product called GoBack (from HotFiles) which will log all changes to the "base" image (i.e, time zero) on the hard drive so that if problems occur a day, a week, or a month later, we can return to that base image or any other state in between. All staff

machines in the map library have been upgraded to 450 Mhz P3 computers. Some are loaded with DreamWeaver software for those staff to create Web pages and some have a samba connection to our Unix dataserver to make it extremely easy for staff to download licensed data to their own workstations for subsequent delivery to clients.

One notable achievement recently was the completion of a project to put up on the Web graphic images representing the geographical extent of our airphoto coverages. The URL for this project is:
http://www.lib.uwaterloo.ca/locations/umd/photos/ap.html

Also worth mentioning are two publications created by Ann Naese: one of these is a user guide for our collection of orthophotos for the Greater Toronto Area, and the other a user guide for our orthophotos for the City of Kitchener.

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Documentation relating to the National Atlas of Canada Advisory Committee has been placed at the following web address:
http://atlas.gc.ca/english/about_us/index_nacac_e.html
Within this you will see the mandate, advisory committee members, agenda, minutes, presentations and planning that was discussed at the November meeting that Cheryl attended.

The university has signed the licence for use of digital topographic data with NRCan. The official data custodian will be the map library, even though it is not part of the university library system. One Geography faculty member has already placed an order for 34 files at 1:50,000 for southwestern Ontario. A second agreement that was signed by the university and involves the map library, was the Canada Foundation for Innovation proposal which outlines the University of Calgary project establishing a Canadian Environmental and Geospatial Library. The Director of Libraries at Western has agreed to provide the cash requirement and the map library will contribute-in-kind time and expertise. As a result of the signing of these agreements, the map library will undoubtedly see an increase in use and need of spatial data.

On the paper product front, we have acquired 2 new 1:50,000 map series - one for Slovenia in 64 sheets and one for peninsular Malaysia in 113 sheets. A recent visit to the London Room of the London Public Library proved very worthwhile. Cheryl gained a better insight into the variety of resources there for historical material of the city and surrounding area.

Alberta

University of Alberta
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The major activity for the Edmonton map community these days is the preparation for 'Carto 2000', the joint meeting of ACMLA, CCA and WAML, to take place in Edmonton at the University of Alberta from May 31 through June 4, 2000. The local planning team has been active since last fall striving to put together a conference worthy of the program that has been developed by Roger Wheate, Cathy Moulder and Linda Zellmer. Check our web site for details:
http://www.library.ualberta.ca/maps2000/

In the Fall, the William C. Wonders Map Collection received $5000 in special funding to upgrade its collection of Alberta maps. This has allowed a major infusion of new maps and atlases of Alberta, including the complete 1:50,000 Resource Base series; many maps from other Provincial Government departments; many of the GSC Open File Maps covering Alberta; new mapping from the City of Edmonton; and other maps of Alberta. These are now slowly being processed and records added to the Library's main online

NEW MAPS

Amy Chan

Africa. Scale 1:51,400,000 ; Azimuthal equal-area proj. [Washington, D.C. : Central Intelligence Agency, 1999]. "802641AI (R02109) 6-99"

Albania : political. Scale [ca. 1,900,000] ; Lambert conformal conic proj., SP 40N/56N. [Washington, D.C. : Central Intelligence Agency, 2000]. "Base 802602AI (R02295) 2-00"

Albania: relief. Scale [ca. 1,900,000] ; Lambert conformal conic proj., SP 40N/56N. [Washington, D.C. : Central Intelligence Agency, 2000]. "Base 802603AI (R02295) 2-00"

Antarctic Region. Scale 1:68,000,000 ; Azimuthal equal-area proj. [Washington, D.C. : Central Intelligence Agency, 1999]. "802648AI (R02207) 6-99"

Arctic Region. Scale 1:39,000,000 ; Azimuthal equal-area proj. [Washington, D.C. : Central Intelligence Agency, 1999]. "802647AI (R02112) 6-99"

Asia. Scale 1:48,000,000 ; Azimuthal equal-area proj. [Washington, D.C. : Central Intelligence Agency, 1999]. "802643AI (R02105) 6-99"

Atlantic Provinces: index map of the National Topographic system = Provinces de l Atlantique : carte index du Systéme national de référence cartographique / produced by the Center for Cartographic Information, Natural Resources. Scale 1:2,000,000. 1 cm. Represents 20 km. ; Lambert conformal conic proj., standard parallels at 49°N and 77°N. Ottawa, Ont. : Centre for Cartographic Information, Natural Resources Canada, c1999

Australia : political. Scale [1:2,5000,000] ; Lambert conformal conic proj., SP 13S/42S. [Washington, D.C. : Central Intelligence Agency, 1999]. "Base 802663AI (C00014) 12-99"

Australia : relief. Scale [1:2,5000,000] ; Lambert conformal conic proj., SP 13 S/42 S. [Washington, D.C. : Central Intelligence Agency, 1999]. "Base 802664AI (C00014) 12-99"

Austria : political. Scale [ca. 1:2,500,000] ; Lambert conformal conic proj., SP 4620N/4900N. [Washington, D.C. : Central Intelligence Agency, 1999]. "Base 802439AI (R02077) 12-99"

Austria : relief. Scale [ca. 1:2,500,000] ; Lambert conformal conic proj., SP 4620N/4900N. [Washington, D.C. : Central Intelligence Agency, 1999]. "Base 802440AI (R02077) 12-99"

Burundi. Scale [ca. 1:1,800,000] ; Mercator proj. [Washington, D.C. : Central Intelligence Agency, 1999]. "802658AI (R02774) 9-99"

Canada : political. Region. Scale [ca 1:3,550,000]. Lambert conformal conic proj., SP 52N/74N. [Washington, D.C. : Central Intelligence Agency, 1999]. "802660AI (R01930) 9-99"

Caspian region : promise and peril. Scale 1:7,100,000. Washington, D.C. : National Geographic Society, c1999

The Caucasus and Central Asia. Scale 1:19,000,000 ; Lambert conformal conic proj., SP 47°N/62°N. [Washington, D.C. : Central Intelligence Agency, 2000]. "Base 802559AI (R00455) 1-00"

Central Africa. Scale 1:12,400,000 at 0° ; Mercator proj. [Washington, D.C. : Central Intelligence Agency, 1999]. "802642AI (R02414) 6-99"

Central America and the Caribbean. Scale 1:12,500,000. Lambert conformal conic proj., standard parallels 9°N and 17°N. [Washington, D.C. : Central Intelligence Agency, 1999]. "802635AI (R02068) 6-99"

Central Balkan Region. Scale 1:3,550,000. Lambert conformal conic proj., standard parallels 40°N and 56°N. [Washington, D.C. : Central Intelligence Agency, 1999]. "802638AI (R02592) 6-99"

Commonwealth of Independent States. Scale 1:20,700,000 ; Lambert conformal conic proj., standard parallels 47°N and 62°N. [Washington, D.C. : Central Intelligence Agency, 1999]. "802644AI (R02110) 6-99"

Ethiopia : political. Scale [ca. 1:11,000,000] ; Mercator proj., 72°N [Washington, D.C. : Central Intelligence Agency, 1999]. "802399AI (R02760) 12-99"

Ethiopia : relief. Scale [ca. 1:11,000,000] ; Mercator proj., 72°N [Washington, D.C. : Central Intelligence Agency, 1999]. "802400AI (R02760) 12-99"

Europe. Scale 1:19,500,000 ; Lambert conformal conic proj., standard parallels 40°N and 56°N. [Washington, D.C. : Central Intelligence Agency, 1999]. "802637AI (R01083) 6-99"

Indonesia : Timor. Scale 1:1,000,000 ; Mercator proj. [Washington, D.C. : Central Intelligence Agency, 1999]. "802662AI (R02748) 9-99"

Iqaluit, Nunavut / produced by the Centre for Topographic Information, National Resources Canada. Special ed. Scale 1:50,000. 1 cm to 500 metres ; Transverse Mercator proj. Ottawa, Ont. : Centre for Topographic Information, Natural Resources Canada, c1999

Iraq: political. Scale [ca. 5,500,000] ; Lambert conformal conic proj., SP 12N/38N. [Washington, D.C. : Central Intelligence Agency, 1999]. "Base 802668AI (R00667) 12-99"

Iraq: relief. Scale [ca. 5,500,000] ; Lambert conformal conic proj., SP 12N/38N. [Washington, D.C. : Central Intelligence Agency, 1999]. "Base 802669AI (R00667) 12-99"

Kosovo. Scale 1:1.060,000 ; Lambert conformal conic proj., standard parallels 38°N and 47°N. [Washington, D.C. : Central Intelligence Agency, 1999]. "802639AI (R02194) 6-99"

Land cover of Canada = Couverture de sterres du Canada / Canada Centre for Remote Sensing. Scale 1:6,000,000. Ottawa, Ont. : National Atlas Group, GeoAcess Division, 1999. (MCR 103)

Major North American oil & gas pipelines. Scale indeterminable. Regina, Sask. : IPSCO Inc. And Canadian Energy Pipeline Association, 1999

Metamorphic maps of Alps / eds M. Frey, J. Desmons & E. Neubauer. Scale 1:1,000,000 and 1:500,000. Basel, Switzerland : Institute of Mineralogy and Petrography, 1999. (2 maps on 1 sheet)

Middle East. Scale 1:21,000,000 ; Lambert conformal conic proj., standard parallels 12°N and 38°N. [Washington, D.C. : Central Intelligence Agency, 1999]. "802640AI (R02107) 6-99"

Physical map of the world, August 1999. Scale 1:35,000,000 ; Robinson proj., standard parallels 38°N and 38°S. [Washington, D.C. : Central Intelligence Agency, 1999]. "802657AI (R00349) 8-99"

Political map of the world, June 1999. Scale 1:35,000,000 ; Robinson proj., standard parallels 38°N and 38°S. [Washington, D.C. : Central Intelligence Agency, 1999]. "802632AI (R00349) 6-99"

New century map of Canada / cartography by the Royal Canadian Geographical Society and the National Atlas of Canada. Scale 1:6,000,000. 1 cm represents 60 km. ; vertical near-side perspective proj., centred at 50°00'N 90°00'W, altitude 12,500,000 metres. Ottawa, Ont. : Canadian Geographic, c1999

North America. Scale 1:38,700,000 ; Lambert conformal conic proj., standard parallels 37°N and 65°N. [Washington, D.C. : Central Intelligence Agency, 1999]. "802633AI (R02067) 6-99"

Oceania. Scale 1:36,000,000 at 30°S ; Mercator proj. [Washington, D.C. : Central Intelligence Agency, 1999]. "802646AI (R02111) 6-99"

South America. Scale 1:35,000,000 ; Azimuthal equal-area proj. [Washington, D.C. : Central Intelligence Agency, 1999]. "802636AI (R02108) 6-99"

United States. Scale 1:27,000,000 ; Albers equal-area proj., standard parallels 28°30'N and 45°30'N. [Washington, D.C. : Central Intelligence Agency, 1999]. "802634AI 6-99"

NEW BOOKS AND ATLASES

Frank Williams

Ambroziak, Brian M. 1999. *Infinite perspectives : two thousand years of three-dimensional mapmaking.* New York: Princeton Architectural. 109 p. $75 (US). ISBN 1568981953 (hc)

Atlas of the world. 1999. 7th ed. Washington, D.C.: National Geographic Society. 415 p. $125 (US). ISBN 0792275284

Atlas of world history. 1999. O'Brien, P.K., ed. New York: Oxford University Press. 368 p. $85 (US). ISBN 0195215672

Christopher, A.J. 1999. *The atlas of states : global change, 1900-2000.* New York: J.Wiley. 274 p. $250 (US). ISBN 0471986135

Clark, Audrey N. 1999. *The new Penguin dictionary of geography.* 2nd ed. New York: Penguin Books. (Penguin reference books). $14.95 (US). ISBN 0140513884

Collins, Mary Rose. 1998. *The aerial photo sourcebook.* Lanham: Scarecrow. 197 p. $45 (US). ISBN 0810835193

Hourcade, Bernard ... [et al.] 1998. *Atlas d'Iran.* Montpellier-Paris: RCLUS-La Documentation française. 192 p., 252 cartes. 320 FF. ISBN 2110040475

Geographica : the complete illustrated reference to Canada and the world. 1999. Forbes, Scott, ed. Vancouver: Raincoast Books. 618 p. $89.95 (CAN). ISBN 1551922509 (hc)

Man, John. 1999. *Atlas of the year 1000.* Cambridge, MA: Harvard University Press. 144 p. $26 (US). ISBN 0674000854 (hc)

Mappings. 1999. Cosgrove, Denis, ed. London: Reaktion Books. (Critical views). 311 p. GBP 16.95 ISBN 1861890214

The Mapping of the Entradas into the greater Southwest. 1998. Reinhartz, Dennis & Saxon, Gerald D., eds. Norman: University of Oklahoma Press. 227 p. $37.50 (US). ISBN 0806130474

Maps and plans in the public record office. Vol. 4, Europe and Turkey. 1999. Beech, Geraldine, ed. London: Stationary Office Books. 426 p. GBP150. ISBN 0114402752 (hc)

Mills, A.D. 1998. *A dictionary of English place-names.* 2nd ed. New York: Oxford University Press. (Oxford paperback reference). 442 p. $12.95 (US). ISBN 0192800744

Moore, Patrick. 1998. *Atlas of the universe.* Rev. ed. Skokie, IL: Rand McNally. $29.95 (US). ISBN 0521642108

Multimedia cartography. 1999. Cartwright, W., Peterson, M.P., and Gartner, G., eds. Berlin: Springer-Verlag. 343p. + 1 CD-ROM. DEM 89. ISBN 3540658181 (hc)

Remote sensing for the earth sciences. 1999. 3rd ed. Rencz, Andrew and Ryerson, RobertA., eds. New York: John Wiley & Sons. (Manual of remote sensing, Vol. 3). 672 p. $198 (US). ISBN 0471294055

Sanders, Rickie. 1998. *Growing up in America : an atlas of youth in the USA.* New York: Macmillan Library Reference. 291 p. $125 (US). ISBN 0028972627

Surveying the record: North American scientific exploration to 1930. 1999. Carter, Edward C., II, ed. Philadelphia: American Philosophical Society. (Memoirs of the American Philosophical Society. Vol. 231). 344 p. $25 (US). ISBN 0871692317

REVIEWS

Tim Ross

THE HISTORY OF CARTOGRAPHY, VOLUME TWO, BOOK THREE. CARTOGRAPHY IN THE TRADITIONAL AFRICAN, AMERICAN, ARCTIC, AUSTRALIAN AND PACIFIC SOCIETIES. D. Woodward and G.M. Lewis (eds). Chicago: University of Chicago Press, 1998. xxi, 639 pp., illus., 22 x 29 cm. $231.50 CAN, $150.00 US. ISBN 0226907287.

The History of Cartography Project is justly renowned for - so to speak - 'rewriting the book' on early maps and mapping. It is a work of superlatives, in its size and scope, its scholarly prestige and many well-deserved awards, so much so that it is scarcely necessary to add to the praise already heaped on this undertaking. It will suffice to say that this fourth book in the series continues the tradition of painstaking and exploratory scholarship established by its predecessors.

Volume One concerned material already dealt with at length in previous histories of cartography: the ancient and classical cultures of Europe and the Mediterranean area, and medieval Europe. Writers like Bagrow had already said much about this material, though the authors of Volume One said more and had new perspectives. As successive books of Volume Two have appeared, we have been drawn into progressively less familiar territory. Bagrow, for instance, described Islamic and Chinese cartography, though not in much detail. In this new book we enter a realm little known to earlier historians of cartography. Perhaps the only artifacts in this book which were widely known from previous works are the famous 'stick charts' of the Marshall Islands, one or two illustrative Aztec or related maps, and some Inuit maps. They may have been known widely, but I believe they were for the most part known only superficially. One difference here, apart from the considerable increase in the number of examples described and illustrated, is that many of these maps are compared directly with the areas they represent. This makes a great difference to the understanding of an unfamiliar cartographic tradition, and in many cases perhaps even to our willingness to accept that a certain artifact is indeed a map. This comparison is not just a matter of showing how accurate a map may be (however accuracy might be assessed) – it is essential for showing the extent of the region with which a person or culture was familiar, or which features were considered significant enough to include in the map. The wealth of illustration and explanation provided here enriches us all.

The editors, and eleven co-authors, present a broad survey of mapping from the regions specified in the book's lengthy title. Other regions, of course, have been covered previously in this series. This survey extends from Arctic to African to Polynesian cultures, from maps carved on rock outcrops to maps scratched in sand, from maps preserved in paintings to maps woven into textiles and to maps preserved in nothing at all (hand gestures, skin decorations, traditional processions and the like). Much of this material has been described in the literature of disciplines other than cartography, as the numerous footnotes indicate, but such is, or has been, the compartmentalization of knowledge that few people who call themselves cartographers, or perhaps even historians of cartography, will have had ready access to this material before. One of the great virtues of this book and this series of books is the gathering of such scattered information. Opportunities for future scholarship abound here, as one of the greatest benefits of compilation on this scale is that it creates a foundation in which future work can take root. Indeed, we may already wonder, twelve years after the appearance of Volume One of this series, when a revision will be needed! I can't help but look at a particular cosmographic chart in

this new book and wonder if some of its elements should not be called maps of the Moon - my own area of interest. Doubtless other scholars will see other things that will lead them off in fresh directions, and so we all benefit. I would like to draw particular attention to the introductory and concluding sections by the editors, which discuss important definitions of terms such as 'map' and look ahead to future scholarship in this field. I have found the definition of 'map' from the introduction to Volume One to be by far the most useful ever published from the point of view of my own work, and it is further amplified here.

I cannot imagine any large scholarly library or map collection which could justify not owning a copy of this book. It is somewhat expensive, but not overly so for a book of this size and importance. As for me, I can hardly wait for the next volume!

Phil Stooke
Department of Geography
University of Western Ontario
London, Ontario

INTO THE MILLENNIUM...

CARTOGRAPHY AND MAP COLLECTIONS FOR A NEW CENTURY

May 31 - June 4, 2000
University of Alberta
Edmonton, Alberta

A Joint Conference of
ACMLA - Association of Canadian Map Libraries and Archives
CCA - Canadian Cartographic Association
WAML - Western Association of Map Libraries

PRELIMINARY PROGRAM

Tuesday May 30th

Executive Meetings - ACMLA, WAML

Wednesday May 31st

Afternoon

Executive Meeting - CCA

Pre-conference Workshop - "Cataloguing Geospatial Digital Data"

Convenor: Trudy Bodak (York University)

Leaders: Mary Larsgaard (Map and Imagery Laboratory, Davidson Library, University of California, Santa Barbara), Velma Parker (National Archives of Canada) and Grace Welch (University of Ottawa).

Pre-conference Workshop - "Global Data Publishing with the Georama World Atlas" - Hrvoje Lukatela (Geodyssey Inc.)

Evening
Ice Breaker

Thursday June 1st

Morning
Opening Ceremony and Welcome

Plenary Session: "Developments in Cartography"

Keynote Speaker - "The Shapely Earth: Measuring and Mapping" - Don Fenna (University of Alberta)

"The Excel Generation in Automated Cartography" - Ray Boyle (University of Saskatchewan)

"Digital Map Publishing - The Next Generation" - Lou Skoda (Canadian Cartographics Ltd.)

"The Future of GIS and Electronic Cartography in the 21st Century - Bringing Land Use and Land Cover Information to the Public: The Role of Map Servers and the Internet" - Arturo Sanchez-Azofeifa (University of Alberta)

Afternoon
Session: "Models for Geospatial Data Distribution and Sharing"
Convenor: Barbara Znamirowski (Trent University)

"GEODE - A Prototype for Web-based Delivery of Canadian Spatial Data and Metadata"

"GEODE: Conceptual Design" - Chuck Humphrey (Data Library, Univerisity of Alberta)

"Presentation of GEODE System Prototype and Future Directions" - Sharon Neary and Laurie Schretlen (Maps, Academic Data and Geography Information Centre, University of Calgary)

"Data Distribution:Technical Aspects of Sharing and Cooperation" - Jim Chorel (AltaLIS Ltd.)

"Canadian 1:250,000 Map Sheets as Data Source for a Country-wide Digital Atlas" - Hrvoje Lukatela (Geodyssey Ltd.)

"Advancements in Cartographic Design at Statistics Canada" - Lea Shelley (Statistics Canada)

"The National Atlas of Canada and GeoGateway" - Claire Gosson (Natural Resources Canada)

"Questions and Discussion on Cooperative Sharing Initiatives" - Barbara Znamirowski (Trent University)

Evening
Orienteering event

Friday June 2nd

Morning
Session: "Moving a Map Collection"

"Planning for Our Future: Moving and Storing Map Collections" - Joanne Perry (Pennsylvania State University)

"Relocation of a Regional Map Library— Considerations and Assessments" - Linda Newman (University of Nevada)

"The Care and Handling of Fragile Materials" - Tom Nagy (National Archives of Canada)

Session: "Map Design and Use"

"What Is It With Parallel Line Patterns?" - Cliff Wood (Memorial University of Newfoundland)

"Where are the Pretty Maps: the Internet Representation of Cartographic Societies and Associations" - Anita Muller (Carleton University)

"The Power of Maps in Resource Management Decision-Making" - Jean McKendry (University of Idaho)

"Hazards Mapping: A Need for Guidelines" - Ute Dymon (Kent State University)

Session: "Demystifying Metadata: What It Is, Why It Is Important and What Our Clients Need to Know About Metadata"
Convenor: Grace Welch (University of Ottawa)

"Using and Understanding Metadata: Experience from the Alexandria Project" - Mary Larsgaard (Map and Imagery Laboratory, Davidson Library, University of California, Santa Barbara)

"Metadata: An Integral Component of Managing Data as a Valuable Corporate Resource" - Carol Kennedy (Alberta Environment, Resource Data Division)

"Metadata for Web Pages: Standards, Uses, Limitations - Experiences from Natural Resources Canada" - Beverley Kouri (Natural Resources Canada, Earth Sciences Sector)

"Metadata, A Reference Service in Map Libraries and Geographic Information Centres" - Carol Marley (Hitschfeld Environmental Earth Science Library, McGill University)

Session: "Atlases"

"Canada Atlas 2000/Award in Geomatics Project" - Lou Skoda (Canadian Cartographics Ltd.)

"The Atlas Saskatchewan - A Product of Developmental Change" - Ka Iu Fung (University of Saskatchewan)

"A Socioeconomic Atlas Series for U.S. National Parks" - Jean McKendry (University of Idaho)

Afternoon
Demonstrations - "GIS on the Web" - Phil Dodds (Intergraph) and Daniel Munroe (ESRI)

Site visits and tours

Evening
Banquet

Saturday June 4th

Morning
"Report of the Visual and Sound Archives Division, National Archives of Canada" - Betty Kidd (National Archives of Canada)

Annual Business Meetings - ACMLA, CCA, WAML

Session: "Cartosophy"

"Cartography as Rhetoric" - Mark Denil (Dartmouth, Nova Scotia)

"Cartosemiotics after Three Decades" - Hans Schlichtmann (University of Regina)

"A Sociological Perspective on Map Makers and Maps With a Special Focus on Gender" - Will C. van den Hoonaard (University of New Brunswick)

"Francis Barrallier: An Emerging Story" - Henry Steward (Clark University)

Afternoon
Session: "Historical Roots"
Convenor: Frances Woodward (University of British Columbia)

"Popular Impressions - Images of the West on Maps to 1900" - Alice Hudson (New York Public Library)

"The Hudson's Bay Company Archives" - Tammy Hannibal (Hudson's Bay Company Archives)

"The Canadian County Atlas Digital Project" - Lorraine Dubreuil (McGill University)

Session: "Cartographic Education"

"Visualization and Interactive GIS: Implications on Cartographic Education" - David Broscoe (Algonquin College)

"GIS Education and Training: Monograph 43 -10 Years Later" - Sally Hermansen

"Geomatics in the New Millennium: Bridging the Secondary/ Post-Secondary Divide" - Andrew Millward (University of Waterloo) and Susan Pannell (Queen's University)

"Cartography and Children - The International Scene" - Jacqueline Anderson (Concordia University)

"Manipulative Map Projections: What Can be Discovered From Their Classroom Use" - Henry W. Castner (Pittsboro, North Carolina)

Session: "GIS in Libraries: An Open Discussion Session"
Convenors: Linda Zellmer (Arizona State University) and David Deckelbaum (University of California, Los Angeles)

Sunday June 5th

Walking Tour
Sunday Brunch
Field Trip: "Fort Edmonton"

For more information....

See the conference webpages
http://library.ualberta.ca/maps2000/

REPORT ON ICA EXECUTIVE COMMITTEE MEETING December 10-11, 1999

Prepared by Alberta Auringer Wood, ICA Vice President (Canada)

The ICA (International Cartographic Association) Executive Committee met in Utrecht, The Netherlands, on Friday December 10, and Saturday December 11. All members were in attendance for at least part of the meeting: President Bengt Rystedt (Sweden), Secretary-General and Treasurer Ferjan Ormeling (The Netherlands), Past President Michael Wood (U.K.), and Vice Presidents Kirsi Artimo (Finland), Milan Konecny (Czech Republic), Li Li (China), Elri Liebenberg (South Africa), Robert McMaster (U.S.A.), Takashi Morita (Japan), and myself.

Activities started in Ottawa were discussed. The association may become registered in some country, with Sweden being considered. Certification continues to be an issue in ISO (International Standards Organization). All will look at a document relating to it.

The Working Group on Publications reported that the contract with Elsevier will be renegotiated. One idea considered was to do a book every two years using papers from the conferences. One problem area is special journal issues growing out of workshops and commission meetings.

It was agreed that the Working Group on Archives chair would draft guidelines for preserving materials relating to the association to give to past and present commission chairs, conference directors and officers, directly or via the ICA newsletter. The Documentation Centre of the Institute Geographique National will archive the material.

It was noted that the secretarial materials and treasury have been mostly transferred from France to the Netherlands. Thanks were conveyed to our French colleague for the work in this area.

Takashi Morita reported on an ISO/TC211 meeting and noted that the item about qualifications and certification of personnel was in the second stage of a five step process. He will keep us informed.

Relationships with other international organizations were discussed. The designated contact person will note items of which ICA should be aware.

We will soon have a new association web page. Ferjan and the University of Utrecht will host it. The address will be http://www.icaci.org/.

The latest issue of the ICA newsletter was reviewed. There were 1,500 copies printed with 10 going to each member country. There is a possibility of it being mailed to individuals or institutions by request. It is on the new web page already.

Ferjan and Bengt reported on a liaison meeting with officers of ISPRS (International Society for Photogrammetry and Remote Sensing). They plan to meet in January in New York City with Hermann Habermann of the United Nations.

Commission plans and budgets were discussed. The Board liaison person reported in each case. The funding requests were more than funds allocated in the budget. It was decided that each commission would be allocated $1,200 for administrative support, including web site maintenance, as well as funds toward proceedings and conference related expenses not related to proceedings, depending upon what had been planned. For travel assistance, all would be directed to the "solidarity" fund. The meetings scheduled by the commissions will be on the web page. Each commission will be informed of its budget.

It was noted that the 50th anniversary of ICA is not very far off. All Executive members were asked to bring ideas to the next meeting of ways to celebrate it.

All Executive Committee (EC) members were urged to increase the visibility of the ICA. For example, do a plan of what you would like to do and indicate how the EC can help. Milan noted the Digital Earth conference he had just attended, and reported that one was in the planning stages for Canada. He felt that it needed more direct reference to cartography.

The ICA information booklet was reviewed. January 10th was given as the deadline for any changes.

Two cartographic "summer schools" were noted. One will be in Finland with Robert Weibel as the lecturer. It will be five days in length, 30 people are expected, and will be in English. Another one will be in a central European location.

The list of ICA liaison officers to various organizations was reviewed. I have been given responsibility for IFLA (International Federation of Library Associations) and will make a contact or contacts.

As requested by the Commission on Children and Cartography, the EC reviewed the proposed rules for judging of the Barbara Petchenik Children's Map Competition. The suggestions will be relayed to the Commission Chair by me as the liaison with the commission.

The next meeting of the EC will be August 7-9, 2000 in Beijing.

In addition to the business sessions, there was a visit by Sinterklaas, and the EC made a visit by bus to the International Training Centre (ITC) at Enschede, about an hour and an half away. Introductory remarks were given by Menno-Jan Kraak, head of the cartography program. The Dutch Cartographic Society composition, structure, and activities were described. In 1998, they had 513 common members, 71 student members, and 104 institutional members (788 total) as well as 134 subscribers to their cartographic magazine which is published four times a year. Their membership fees are 65 Guilders for regular members and 165 Guilders for institutions. Their regular members include academics, practicing cartographers, draft people and map librarians. They have had a steady growth of about 1.4% each year over the last 18 years. They have several one day workshops each year or in the case of the history of cartography two day ones, and every few years have a 2-4 day congress. They recently supported a study of the society by a communications student who reported on the results at our visit. They were interested in what the image of the society was to members and the outside world. The results are probably of interest to other cartographic organizations. The society web page is at http://www.kartographie.nl/. Their 1999 congress at Maastricht was described. There were 500 attendees. It included a children's map competition and the top three were sent to Ottawa for the 1999 ICA meeting. A European Cartographic Union was established as a communication tool. The Nederlandse Vereniging voor Kartografie (Dutch Cartographic Society) is considering a bid to host the 2005 ICA conference in Maastricht, and if so, it would be done jointly with Belgium. They expect to decide early in 2000.

Menno-Jan gave a description of the Division of Geoinformatics, Cartography and Visualization and its programs. They cover all aspects of the visual display of geospatial data. Approximately 50% of staff time goes into teaching. They also give courses at other institutions and support alumni by a journal and a newsletter. In two years, ITC will be part of a university, but which one is not yet known. There are almost 300 staff with 160 FTE (full time equivalent) in science disciplines and 115 FTE in support departments. They usually have about 400 students per year of an average age of 34. Since 1950, they have had 13,745 students from 161 countries, including 85 from Canada and 111 from the United States. They offer a MSc, a professional masters and a diploma, as well as a PhD, and also numerous special courses. One of the current core activities is web cartography about which a new book by Menno-Jan and Alan Brown will shortly be published. There will be a web site for it at http://kartoweb/.itc.nl/webcartography/ soon.

Edzard Bos, former ICA Vice President and recently retired ITC faculty member, gave a talk on the building followed by a tour of it. ITC moved to Enschede in 1971 as part of the Netherlands government decentralization process. This building was the result of planning from 1985 to 1992. It is an example of organic architecture, and while very functional, has few 90 degree angles except between walls and floors. Windows, mirrors, and ceilings include polygon shapes of considerable variety. The same architect designed both exterior and interior.

Informal discussions took place over meals. The visit to the ITC also involved the senior Ormelings, Past ICA President and Secretary-General Fer, and his wife Rinni. They and other ITC faculty and students went with us to eat nearby, through the rain, but protected by ITC umbrellas! Sharp as tacks, they contributed to making it a memorable event.

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University of Alberta
Edmonton, Alberta

A Joint Conference of

ACMLA - Association of Canadian Map Libraries and Archives
CCA - Canadian Cartographic Association
WAML - Western Association of Map Libraries

For more information....

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