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EDITOR'S COMMENTS

At the recent ACML conference in St. Catharines, I was appointed the new Editor of the Bulletin. Previous editors have created a very good reputation for this publication and I will do my best to maintain their tradition. At times, I am sure that I will be calling upon the good graces of the Muses to help me fill the many pages between each cover, but I will ask all of you to help me too.

It is only through a publication like this that we can reduce the vastness and regionalism of our country. Not all of our members can attend the annual conference and so we should use the Bulletin to pass information around.

The purpose of the Bulletin is to help fulfil the purposes of the ACML:
1. To promote interest in and knowledge of maps and map related material.
2. To further the professional knowledge of its members.
3. To encourage high standards in every phase of the organization, administration and development of map libraries by: (a) providing for discussion of mutual problems; (b) exchanging information on experiences, ideas and methods; and (c) establishing and improving standards of professional services in this field.

Bob Batchelder
Editor in Chief
ACML Bulletin

TURNPIKES TO TOWPATHS TO RAILS

Andrew F. Burghardt
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Hamilton, Ont.

I am honoured to serve as the opening speaker of this conference. I assure you, however, that I do not envisage my role so much as being a keynote speaker who aims to inflict his themes and moods on the entire session as serving as an introduction to the more detailed and probably more learned papers which are to follow. In my presentation I hope to be able to set into context the transportation revolution of the 19th century and to point out some of the patterns which emerged. In deference to Alex Ormston and Larry Murphy, who know far more than I on the topic, I will have relatively little to say about the Welland Canal, as such.

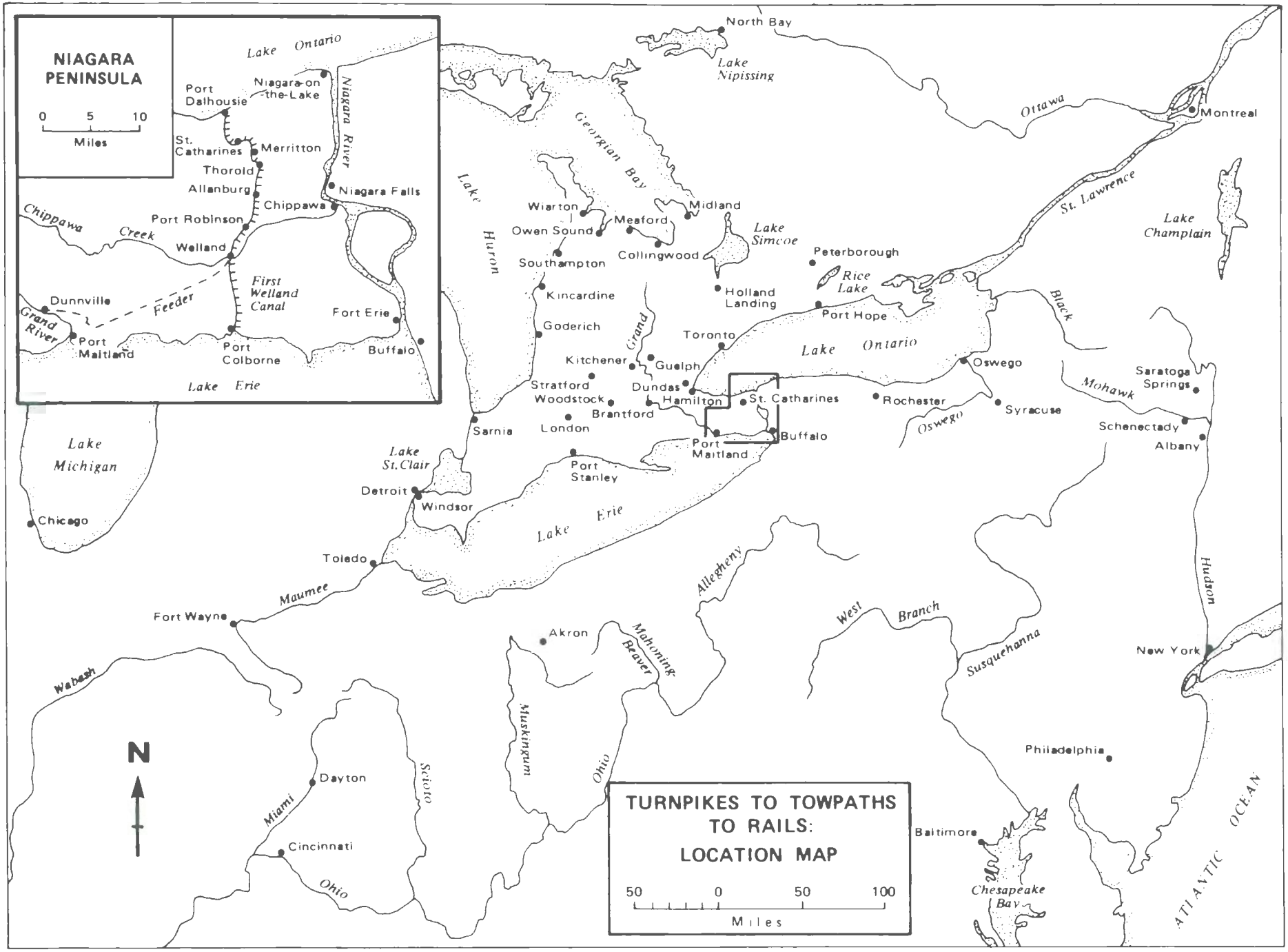
My title, "Turnpikes to Towpaths to Rails" was chosen to indicate in one catchy phrase the amazing revolution in transportation which occurred in the first half of the last century. Nothing quite like it had happened before, and such a breakthrough was to be matched only in the middle of our century when the automobile, truck and airplane effected a similar revolution.

It is true that certain aspects of the 19th century transformation had been developing over a considerable period of time. Kings' highways have existed at least since the time of the Persian Empire, and canals without locks had been known in various parts of the ancient world, notably in China. The modern lock seems to have been developed in northern Italy by 1500, and, after the development of precise surveying techniques in the 16th century, canal construction on a major scale began in France in the 17th century. However, in pointing out this developmental time scale, one must also note that before the mid 18th century these improvements had virtually no impact on the prevailing transportation of the world. When the revolution occurred it swept over Europe with economic, social and political consequences which no one could have foreseen.

In North America the revolution was even more marked, because of the severe compression of the time scale. Everything seemed to happen at once. In Southern Ontario only a quarter century elapsed during the change from mud tracks and trails to turnpikes, canals and railways. The various booms - turnpike, canal and rail - overlapped each other, totally transforming the economy and way of life, and, unfortunately, leaving scores of bankruptcies in their wake.

To understand what all this meant to the people of that time, it is essential to spend a few moments looking at what went before. In particular, I feel that we cannot grasp the significance of canals without such a backward look. The Welland Canal, of course, needs no explanation but the hosts of canals in England or Ohio seem difficult for us to justify. Why were they built at all? Most of them now seem quaint, lovely relics from some dim, distant past.

The fundamental fact to remember is that land transportation was abominable everywhere; it was slow, uncomfortable and very expensive. There are enough accounts of stage coach travel available to let us know that riding the coaches was not the way to go, unless you had no choice. Around 1800 it cost $1.00 each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Miles
Lake Ontario
Port Dalhousie
Niagara-on-the-Lake
Niagara River
St. Catharines
Merritton
Thorold
Allanburg
Niagara Falls
Chippawa
Chippawa Creek
Port Robinson
Welland
First Welland Canal
Feeder
Dunnville
Grand River
Port Maitland
Port Colborne
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Buffalo
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Fort Wayne
Akron
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West Branch
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ATLANTIC OCEAN
TURNPIKES TO TOWPATHS TO RAILS:
LOCATION MAP
50 0 50 100
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way for the 16 miles between Niagara on the Lake and Chippawa. Compared to the incomes of that time, the amount was astronomical. More important yet was the fact that roads were inadequate for the movement of any freight, except those with a high value. This fact was rarely commented upon precisely because it had always been true; the road transport of goods had not changed in at least 2000 years. The judgements of conditions in Roman times, when at least the principal roads were good, can be found again in studies of mediaeval commerce, and indeed right into the 19th century. Famine was endemic in Europe because grain could be shipped economically only by water. In his study of the 16th century Mediterranean, Blaudel mentions that extra wheat could not be transported by road across Italy and that a load of wheat would quadruple in price in the 600 miles between Cracow and Venice. All armies were forced to live off the land; hence any army, friend or foe, was a disaster to the local peasantry.

Basic to the problem was the road itself. I think we've all driven on unsurfaced back roads enough to know what mud, washouts and ruts can be like. Keeping the surface intact, level and relatively dry was almost impossible. Surfacing was attempted, with varying degrees of success. Timber was plentiful in Ontario hence major roads were planked, but the planks split, shifted or sank, and all in all lasted only a short time at best. A better solution was macadamization, but that required a gravel supply close to the road and the movement of the gravel to the required stretches. Macadamization was not introduced into the Niagara Peninsula area until 1837 and then for only three roads. One could imitate the Romans and 'stone' a road, but again there was the difficulty and the cost of obtaining, shipping and setting the stones. Very few roads were macadamized or stoned. According to Christopher Andreae there was no surfaced road - planked or macadamized - connecting Hamilton with either Toronto or St. Catharines in 1850.

The goods were conveyed in wagons and carts pulled by animals. As a rule, the wheels had thin rims which cut road surfaces into glorious ruts. Bridges, where they existed, were not viaducts but rather they tended to be down at stream level so that the loads had to be slithered down one bluff and somehow dragged up the other, by beasts which did not always willingly obey commands. It is interesting to note that in Roman times the principal means of moving freight by road, the ox-cart, achieved 6-7 miles per day, and that in this century Christaller observed that German peasant villages were within 4 miles of a market town because that was the distance an ox-cart could cover there and back in one day. One reads a great deal about stage coaches carrying passengers, but not very often about long-distance goods-carrying wagons, except on the Prairies where, incidentally, to avoid ruts the 'roads' came to be miles wide.

The problems of road construction and maintenance seemed so intractable that they were left by grateful governments in the hands of private enterprise. The turnpike arrived in Southern Ontario in 1827; it flourished in the eastern U.S., in particular. The upkeep of the road was to be paid for by the users. Given the high initial costs, this policy worked only when traffic was sufficiently heavy. In practice this meant that turnpikes were viable only near major towns, for example, Hamilton, where farmers brought produce to the market there. For the user the turnpike was simply another maddening expense superimposed upon an already expensive and exhausting way of moving goods. In reference to Southern Ontario, one is tempted to say that turnpikes were successful only where they weren't really needed, that is, next to cities. The inter-city routes remained ghastly right into our century. It may be well to remind ourselves that there was no Ontario Department of Highways before 1910, and that the first hard-surfaced highway was paved in 1915.

Given such conditions, how did freight move? It moved by water. Until the advent of the railway most heavy goods went by water, no matter how circuitous the stream course or the shore line might be. This had not changed since ancient times. We hear much of the famed Roman roads, yet the Empire was essentially a broad fringe of territory around the Mediterranean Sea and the imperial capital received its precious grain supplies by boat from Egypt and Sicily. All kinds of other examples come to mind. When the Turkish army advanced to the siege of Vienna in 1683 the cannons and supplies were poled, against the current, up the Danube, while the army marched alongside. Following the Battle of Culloden the English forces marched up the Great Glen from Inverness to Fort Augustus, where they waited while their equipment and supplies were brought by barge the length of Loch Ness. We cannot appreciate why Americans were so concerned with the possession of New Orleans unless we realize the predominant reliance on water for the movement of goods. Nor can we understand Governor Simcoe's selection of places such as Dundas, Woodstock and Holland Landing as the vital points in his strategic plan for the colony.

The canal was thus not so much a new departure as it was an improvement and extension of the prevailing system. Streams were notoriously treacherous and variable, and often could be used in only one direction. England was blessed with gentle, relatively narrow rivers, which, given the British climate, rarely suffered from a water shortage. These could easily be regulated and used, and interconnected in the Midlands plain. In North America, on the other hand, the streams were too uncivilized for such demure behaviour. More often than not the canals here developed separately from and immediately alongside the river. In this way the new waterways could be dug in the silty, level bottom land, use river water and serve the existing river towns. Thus canals alongside rivers were far more common than were canals off at right angles to the stream course. Because of terrible road transport, each canal tended to serve its own valley, and the temptation was great to dig parallel 'ditches' only a short distance apart. Thus the Grand River canal was only a few miles from the shores of lakes Erie and Ontario and from the Welland Canal, and at least four Ohio canals extended southward to the Ohio River.

Where usable valley routes came close to each other, man could construct the connections, as he did so notably in France and England. Where nature had, through some oversight, neglected to provide a vital link, man could build that link, as he did at Suez, Panama and right here in the Niagara Peninsula. Canals not only allowed safe, secure movement in both directions, usually at the consistent velocity set by the men and animals on the towpaths, but also, through the ponding of water supplies, created a dependable supply of water power. This juxtaposition of transportation and water power was an enormous industrial asset in the first half of the 19th century and led to the rise of places like St. Catharines, Rochester and Akron.

Although some of the earliest major canals in North America were built in Canada (the Lachine and Ste Anne canals of 1801-1805), canal construction was far more prevalent in the U.S. than in British North America. The U.S. went through a canal boom or craze immediately before and even overlapping the railway boom. I don't have figures available, but the money the U.S. spent on transportation between 1820 and 1860 must have formed a truly awesome proportion of its total national wealth. I'm not sure that I can satisfactorily explain the U.S.-Canadian differential. Perhaps it was the differences in age and density of settlement (in Ontario, at least), perhaps the difference between autonomous state governments and colonial administrations, perhaps the famed boosterism of the Americans

contrasted to a Scottish conservatism north of the border. It is remarkable, though, how few canals were built in Canada.

If the boundary had not been there, the Americans would surely have built a canal through the low, narrow Chignecto Peninsula to join the Bay of Fundy and Gulf of St. Lawrence. A number of other probable routes come to mind in Southern Ontario: the 10 miles between Rice Lake and Port Hope connecting Peterborough directly to Lake Ontario; a Brantford-Woodstock or a London-Port Stanley connection; or even along the old route of the voyageurs up the Ottawa River and across at North Bay into Lake Nipissing and Georgian Bay.

Canadian canal building consisted essentially of what I will call axial routes, that is, strictly main line linkages with no significant feeder lines. The St. Lawrence and Welland canals are, of course, 'missing link' segments of the Great Lakes - St. Lawrence transport route. The Rideau is essentially parallel to the St. Lawrence and was built for strategic reasons. The Trent Canal connects Georgian Bay and Lake Ontario but was built in segments and not completed until the time of the First World War. All of these are simple trunk lines without appreciable branches. The Grand River Canal may be thought of as an offshoot of the Welland, to which it was connected by the Welland's feeder, but it too was a straight line directly into Lake Erie and operated for only 20 years.

Within the northeastern U.S. veritable systems of canals were constructed. State rivalries, local demands and the presence of major river systems flowing away from the lower lakes, all had a hand in the proliferation of branch and feeder lines. Two of the major clusters, those of New York and Ohio, had the function of joining the Great Lakes with the rivers flowing into the Atlantic and the Gulf of Mexico. The most famous and most successful was that pacesetter, the Erie Canal, dug within the floodplain of the Mohawk River and then parallel to the crest of the Niagara Escarpment, from the Hudson River to Lake Erie. It's interesting to speculate on whether the western two thirds of the Erie would have been built at all if the Welland Canal had preceded it. With the Welland in existence a connection to Lake Ontario, at Oswego, could have sufficed. However, the sequence was, of course, the other way around; the Erie Canal instigated the construction of the Welland.

The Erie Canal served as the principal axis for a host of subsidiary canals which fed northward into Lake Champlain and thence into the St. Lawrence; along the Black and Oswego rivers to Lake Ontario; and southward into a number of branches of the Susquehanna River leading to Chesapeake Bay. From the Syracuse area freight could move by water to New York, Baltimore, Philadelphia, Montreal, Toronto or Buffalo. The significance of the Erie Canal has been well documented. After its completion in 1825, mid-western agricultural produce could, for the first time, be shipped economically eastward to the major ports. Previously such goods either had to be sent circuitously through New Orleans, sent on the hoof or converted into that concentrated high value product, whiskey.

Two river-mouth harbours on the southern shore of Lake Erie served as the originating points for canal systems leading to the Ohio River. From the mouth of the Cuyahoga (Cleveland) the Ohio Canal led over the divide at Akron into a number of south-flowing valleys: the Scioto, the Muskingum and the Mahoning-Beaver. The second ran from the south of the Maumee at Toledo across country to the Miami River to Dayton and Cincinnati, or along the Maumee to Fort Wayne and thence via a short connection into the Wabash. Thus three canal systems, terminating at

Toledo, Cleveland and Buffalo, were in direct contact with the Welland Canal at Port Colborne.

Probably, it is just as well that Canada did not participate fully in the canal boom, because the railway boom was soon to relegate all but the axial canals to the ranks of romantic curiosities. Only those canals which formed integral parts of channels of heavy shipping survived. Obviously massive transformations had to be effected to make such survival possible. Even the Erie Canal was completely reconstructed along its entire route. The Welland Canal is, of course, an excellent example of such a transformation and survival.

If we can say that canals represented a continuance and extension of the established primacy of water transportation for freight movement, we must state that it was the introduction of the railway which truly revolutionized transportation. For the first time in human history, the movement of goods was shifted away from water surfaces and courses to the dry land. As a result, transportation was freed from many of the constraints of terrain. Most canals were by nature extremely circuitous since they were as a rule tied to existing lakes and streams; the railway could, except in mountains, aim for those straight line stretches which both cut miles and allowed speed. Although to our minds the allowable grades were low, always below 4%, this was still an extraordinary degree of flexibility compared to the canal which had to be absolutely level, with all differences in elevation taken care of by interminable series of steps up and down through locks.

The use of rails, with a well drained bedding, took care of the problem of mud, dust, ruts, etc., which afflicted all other forms of land transportation, and allowed for velocities beyond the dreams of stage coaches or canal packets. The locomotive represented the introduction of inanimate power units which functioned as parts of the trains. This too was a revolutionary concept since the older forms of movement had all depended on external, animate forms of power. The hosts of problems associated with horses, mules, oxen and their drovers vanished. Initial construction costs were high but once laid down the tracks required far less maintenance than an adequately maintained turnpike would have. The rail companies obtained and owned their own rights-of-way and could exercise considerable selection in the details of routing. They could avoid the expensive, constricted centres of towns and villages, and yet induce financial assistance from municipalities along the way.

Ontario was fortunate in that the mechanics of railroading had been tried out and developed for over half a century beforehand in England and the U.S. The decades characterized by confusion and chaos had largely passed. Ontario did not manage to avoid entirely the stupidity of lines leading nowhere or paralleling each other too closely, but at least the function, role and impact of the railway were clear by 1853.

The first steam railroad in New York State (the third in the U.S.) was completed in 1831 with the purpose of speeding up canal traffic. A line was built from Schenectady to Albany to avoid the eight locks and two aqueducts necessitated by the descent from the Mohawk valley into the Hudson. This vision of the railway as supplementary to the canal was clearly passé by the time Ontario entered upon its first rail boom. The second New York steam railway already pointed to the future; it was a line northward from Schenectady to Saratoga Springs to profit from the fashionable 'carriage trade' to the famed spa. The canal was now left behind.

The first rail boom in Ontario was as much a response to the growing American systems as it was a result of local political developments. I will not go into a discussion of political factors except to point out that the United Canadas enjoyed a greater degree of home rule than they had as separate colonies and that the passage of the Baldwin-Lafontaine Act, implemented in 1850, allowed municipalities to become deeply involved in local financing. As to the emerging American systems, it is important to realize that the New York and Erie Railroad (The Erie) was completed to Lake Erie in 1851, and the various portions of the New York Central system had been completed to Buffalo and Niagara Falls by 1852. Similar developments had occurred in Michigan, with, in particular, the Michigan Central joining Detroit and Chicago.

Initial proposals for the Great Western Railway had been made as early as 1834, when the Welland Canal had just reached Port Colborne and the Grand River Canal had just been started, however, work did not commence until 1847. The intention was clearly to take advantage of Ontario's location, to serve as a profitable link in the American rail system. Since this was well before Confederation, it may be unfair to point out that the notion of uniting British North America by rail played no discernible part in the planning of Canadian railways during the first boom. The lines of Southern Ontario became known as 'the bridge railways', acting as bridges between the systems of New York and Michigan.

The Ontario lines of the 1850's may be classified locationally as belonging to four types: (1) those short lines which aimed to complement or compete with the Welland Canal, (2) the 'bridge' lines, (3) those which aimed to cut off the Detroit angle of the lower lakes, but stayed above the Escarpment and Falls, and (4) those which did likewise, but ran below the Escarpment and Falls.

Under the first heading we may include all those lines which provided service between lakes Erie and Ontario. These included an early Welland line along the Welland Canal route, from Port Dalhousie to Port Colborne and the Erie and Ontario from Niagara on the Lake to Fort Erie. The London and Port Stanley of 1856 could be included too, and also the TH & B line's extension to Port Maitland in 1916.

More significant were the 'bridge' lines, whose purpose was to join the eastern and mid-western American systems. First honours, in early 1854, went to Hamilton's Great Western Railway from Windsor through London, Hamilton and St. Catharines to Niagara Falls. Extensions to Toronto and Sarnia followed quickly. This was soon parallelled by Montreal's Grand Trunk which had reached Sarnia, via Guelph, Kitchener and Stratford, in 1859. The Grand Trunk had already completed the first line from Montreal to the ocean, to Portland, Maine, in 1853, and had completed the Montreal-Toronto link in 1856. Thus the Great Western had the short, direct bridge whereas the Grand Trunk had the longer bridge from Michigan to Maine. In a later decade of railway building, the Great Western was parallelled by the Canada Southern and the Canada Air Line joining the Detroit area with Buffalo. Both of these were subsequently taken over by American systems.

The first railway to try to cut off the Detroit angle above the Falls and the Niagara Escarpment ran from Buffalo to Goderich. This was the Buffalo and Lake Huron, completed in 1858. The hope of this and similar lines was to induce freighters from the upper lakes to unload at a Lake Huron port and use the 150 mile rail connection instead of the 400 mile water route from there to Buffalo. By 1890 Goderich, Kincardine and Southampton were all termini of railways, but none of these blossomed into major ports.

Meanwhile another set of railways was aiming to achieve an even greater short cut, from the Georgian Bay shores to the ports on Lake Ontario, specifically Toronto and Hamilton. The first such line was The Northern Railway from Toronto to Collingwood in 1855. By 1890 Wiarton, Owen Sound, Meaford, Collingwood and Midland were all rail termini hoping to profit from the short cut to Toronto. These lines and ports proved to be more successful than the short cuts to Buffalo, because the land distances were even shorter and the lake distance longer, and for ships to reach Lake Ontario required the time-consuming passage through the Welland Canal. (Before 1930 the canal was also too narrow for many lake steamers). In addition political factors favoured these routes in that they remained within Canada and were part of a greater bridge between the Prairies and the ocean port of Montreal.

A national Canadian rail network did not develop until well after Confederation. Even the Intercolonial was not completed from Montreal to Halifax until 1876, and a Montreal to Saint John line not until 1890. However, the establishment of railways to northern and western Canada made Toronto the great linch pin joining the pre-existent Ontario system, which had been built largely to take advantage of the needs of the U.S. rail networks and lake shippers, joining this to the remainder of the Candian system north, west and east.

Many years ago the notable Canadian-Scottish geographer, Wreford Watson, pointed out the peculiar location of Southern Ontario. The St. Lawrence and the Erie-Mohawk routes came together here. This unique peninsula of Canada lies on and across the major waterway of the continent and also on and across the principal land bridge in the middle of the waters. Both the waterways and the railways have been international from the start, with Canadian transport systems built to satisfy both local Canadian and distant American needs. Here today we are meeting at one of the critical points on a sub-peninsula of the greater Ontario peninsula, honouring the solution 150 years ago of one of the problems and one of the grand opportunities of this location. The Welland Canal and the old Great Western Railway cross here in St. Catharines. Canada may not have built many canals but this one certainly was planned to last.

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AT LEAST NOAH'S ARK WILL FIT; THE KEEFERS AND THE CANALS OF CANADA

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In 1790, when George Keefer (1773-1858) and his brother Jacob (1775-1814) were teenagers, they walked from New Jersey to the Niagara Peninsula. Their father, whose name was George Kieffer (the name was changed from Kieffer after their arrival in Canada to assure correct pronunciation), had been loyal to the Crown in the American Revolution. He was a member of "The Queens Rangers," and died on Staten Island of army fever. In two years the brothers cleared a claim they had purchased (on the site which was to become Thorold) and built a house. They returned to New Jersey in 1792 to bring the rest of the family to their new home.

George didn't have much formal education, but he was hired by the Government to survey the county and lay out roads. In 1797 he married Catherine Lampman, by whom he had nine children. Catherine died of army fever she contracted while serving as a nurse in the Keefer home, which was occupied by American forces and used as a hospital in the War of 1812. After the war, George opened a general store in Thorold, another at Beaverdams, and built mills and other enterprises.

In 1815 George married a widow, Jane Emery, who had five children. Out of this marriage six more children were born. Jane died in 1833 and George married twice more: Mary Wilson in 1836, who died in 1838, and Magdaline Secord in 1839. There were no children from these last two marriages.

With this brief biographical background, we can begin to investigate the role of the Keefer family in the canals of Canada. The Welland Canal was and is considered the most important construction in the Niagara frontier. George Keefer was involved in this project from the beginning. No doubt the idea of skirting the Falls by a canal between lakes Erie and Ontario had been in many minds, but the first definite scheme was put forth by William Hamilton Merritt of St. Catharines. Merritt's business ventures, like those of Keefer, entailed a need for water to run a water mill, but in dry seasons there wasn't sufficient

water to run the waterwheels. Merritt worked out a scheme to supply his mill with water, and this scheme suggested the route for the canal. George Keefer, whose mills also needed water power, would most likely have been attracted to Merritt's scheme. In any case, in 1818 Keefer and Merritt plus three assistants made the first survey for the canal (the original survey is in the Archives at Ottawa). With the War of 1812 still fresh in mind, however, the route was considered too close to the frontier, and the idea was dropped until the Erie Canal was begun. In January 1824 an Act was passed incorporating George Keefer, William Hamilton Merritt and six others "as a Company to be known as the Welland Canal Company with a capital of Forty Thousand Pounds divided into shares of L12 10s. each." George Keefer was the largest stockholder and was elected President of the Company. On November 30th, 1824, at the official commencement of the work, Merritt gave a rather long speech, but George Keefer, when given the spade to turn the first sod, endeared himself to the attendees with the following few words: "Gentlemen, it is with pleasure that I remove the first earth from the Welland Canal, and I ardently hope that the work may continue uninterrupted until the whole[1] is completed." It is not known whether George was prone to puns. The story of the canal's construction is recounted in Alex Ormston's paper.

One more story about George Keefer remains to be told before going on to the next generation of Keefers. From M.W. Keefer's 20 page pamphlet "George Keefer" published in London (Ontario, I assume) in 1931 comes the following: "In 1825, as soon as the work was commenced, an offer was made of free water power forever for two flour mills, each to contain four runs of stones, provided they were completed before the arrival of the water. This offer was accepted by George Keefer and by General Beach of New York. The latter withdrew from lack of confidence in the completion of the canal, but George continued and finished his mill to time, with the result that the mill today still enjoys from the Government the free water power promised by the company.

"Many of George's neighbours urged him not to squander his money in such a wild speculation as the building of a mill in a spot where there was no water. His answer was characteristic. He thanked them for their advice, but said that he was much in the position of Noah when built the ark. Like Noah, he was convinced that the waters were coming, and he proposed therefore to be ready for them."[2]

George's house was located almost on the banks of the canal, and this certainly stimulated an early interest in canals in three of his sons, who were to become civil engineers, and part of whose careers would be involved with canals in Canada. George's son George (born in 1799) was an engineer on the construction of the original canal, and was later in charge of the Chambly Canal. Another son by the first marriage, Samuel (1811-1890) was even better known as an engineer. In view of his age at the time of the construction of the original Welland Canal, he most likely worked on the project as a laborer. In 1833 he became "the secretary of the Board of Canal Commissioners which was investigating improvements to shipping on the St. Lawrence. The following year... [he] became the assistant to the chief engineer of the new Cornwall Canal, a position he held for the next five years.

"At the age of 30, he was appointed to the highest engineering position in Canada,

1. Author's emphasis.
2. M.W. Keefer, "George Keefer," London [Ont.?], np, 1931, p. 13.

the first chief engineer of the Board of Public Works of the United Provinces. This was not a mere title, since the United Provinces had just taken over the Welland Canal, which needed enlarging and reconstructing. Several provincial canals required urgent attention, such as those on the Richelieu and St. Lawrence Rivers,....

"For thirteen years Samuel held this position, during which time he also had to assume the position of Chief Engineer of the Welland Canal for three years, due to the resignation of the engineer in charge. In 1852, he made the first surveys for a canal on the Canadian side of Sault Ste. Marie, which would open Lake Superior to lake shipping. Also during this period he 'personally surveyed and established the line of the Beauharnois Canal, the first enlargement of the Lachine Canal, and the locks and dams at St. Anne's on the Ottawa, and St. Ours on the Richelieu, and directed their construction'."[3]

Samuel, as well as his brother George, was also involved in other types of engineering, especially railroad engineering. Civil engineers didn't specialize then as they do today. In the mid 19th century, civil engineering included all engineering that was not military. This versatility of engineering skills we note even more in the third son who became an engineer - Thomas, the half brother of Samuel and George.

Thomas Coltrin Keefer (1821-1915) was obviously too young to have contributed much to the construction of the original Welland Canal, but since his father's house often served as a 'hotel' and as a meeting place for those involved in the construction, including of course, engineers, Thomas obviously was exposed at an early age to engineers and engineering talk and tasks. Fortunately, around 1906 (when he was about 85), he wrote a series of "Autobiographical Notes," from which we get an idea of events which remained in his memory for over half a century. Recalling the construction of the original canal, he writes: "In 1828, [at age 7] I was taken by [an] elder brother to see the work at the Deep Cut on the Welland Canal. An inclined plane was cut in the clay sides of the deep Excavation and a large 'Drum' was planted at the top, around which was wound a rope, which was attached to the end of the tongue of ox-wagons; the empties were pulled down hill, the oxen thus aided their fellows, who were tugging at the loaded ones coming up. All this labor ended in a 'burst up' of the bottom of the Cut, which changed the whole plan of summit level for the Welland Canal. Quicksand underlaid the clay, and when enough of the latter was removed the bottom burst up, bringing down the sides, and compelled the Company to seek a higher level in order to give the required depth over this uprised bottom."[4]

Another childhood memory was of a "narrow escape...when I was about ten years old. I was imitating the Miller in my father's flour mill [who was] sampling the wheat which was being weighed, [when] the chain holding the scales which contained the wheat, broke from its fastenings overhead, and the long wrought iron beam fell [indirectly] on my head. Had it struck [my head] before anything else, I must have been instantly killed. One end [of the beam] struck first on the wheat holder, [bringing the other end down upon the top of my head]. The crease of a fingerlength has maintained its place for 75 years. I was picked up, and taken

3. Larry Murphy, Thomas Keefer, Don Mills, Ont., Fitzhenry and Whiteside, Ltd., 1977, p. 55.
4. Thomas C. Keefer, "Autobiographical Notes" (mss. in possession of T.C, Keefer of Vancouver). These "Notes" and Thomas's "Inaugural Lecture" as the first Professor of Engineering at McGill (1856) are scheduled for publication in the fall of 1979 by the Phelps Publishing Company, London, Ont.

home unconscious, and remained so for several hours, awakening with dreadful nausea in the stomach, and a violent headache."

Like many of the Keefer children, Thomas attended Grantham Academy (now called St. Catharines Collegiate Institute) in St. Catharines and Upper Canada College in Toronto. He writes: "I left Upper Canada College at the summer holidays, in 1838, and in the autumn of the same year began work on the Erie Canal; which I left in 1839, in consequence of an alien labor agitation in favor of the citizens of the United States."[4]

His stay on the Erie Canal was good for at least two fish stories: "While on the Erie Canal, 1838-39, I was stationed at Black Rock, near Buffalo and at Tonawanda, near Niagara Falls. The canal route followed the bank of the river between Tonawanda and Buffalo. At both places I gathered the materials for a fish story, both of them exceptional because of their absolute truth. Below Black Rock the canal bank was separate from the river channel by a wide marsh overflowed only by the river when its head was raised by long continued gales blowing down Lake Erie.

"During one of them, we were working along the canal bank, when its outer slope was being washed by the raised waters, when I was surprised to see a number of large fish floating on the surface of the water, and they looked remarkably white and fresh. When one floated over near enough to the bank, I prepared a pole to test its vitality. On touching it, the fish immediately darted off, but almost immediately came to the surface and floated as before on its side. Our whole party suspended work and as there was no house or boat in sight, our axmen were set to work to form a raft of any driftwood in the neighborhood, on which we pushed out to seize the fish. The fish apparently, could neither hear or see us - they were all large 10 to 15 lb. trout.

"The raft was poled near enough without touching, to seize the fish, but on our first attack the raft all went to pieces, and we found ourselves in about 3 or 4 feet of water. The floating fish paid no attention to us, and we waded near enough to seize them, and tucked the struggling fish under our arms and waded ashore. We caught nearly 200 lbs. weight, which were carried suspended from a strong pole, resting on the shculders of two men.

"The long-continued Lake Erie gale had lashed the sandy shores of the Niagara on the American side at this point, so that when these fish came into these waters, their gills were so clogged with the sand that they were obliged to come to the surface to breathe.

"We were surprised that none of the natives who had boats did...appear to join in the fishing, but this was explained when we returned to work at the same place the next morning. The three days' south west gale had blown out, and was followed by a frost during the night, the waters had retired from the marsh, leaving tiny pools bordered with thin ice, and scattered over the surface, were, frozen in and dead, our fish of the previous evening, and all that was necessary to do was to walk out and pick them up. This we found the natives did annually, and took them to Buffalo. We found [from] experience that they were much fresher than those offered in the market.

"These fish were not only obliged to come to the surface to breathe but they could not escape because they were blind. The sand laden water had destroyed

their eyesight and prevented them from seeing our approach.

"The other fish story is a smaller affair, but equally incredible inasmuch as I did not catch the fish, but made it jump into my canoe.

"The scene was the East Channel of the Niagara River, between Tonawanda and Grand Island, the largest Island in the Niagara River.

"this Island in 1838, was covered with wood to the water's edge, and as the river runs from south to north, the afternoon sun threw a shadow from the Island trees, nearly half way across the East Channel, and made this part of the river a favorite boating course in the hot afternoon.

"I had a deep log canoe moved steadily and quietly by my paddle at the stern over the calm shaded water. As the canoe moved along the overshadowed fish would jump vertically, and the canoe bow would be under it before it returned to the water. this was considered worse than the story of catching live ten pound trout with the naked hands.

"The canoe had a projecting bow which threw a moving shadow over the surface of the water, and the smaller fish evidently mistook this for the suck of a larger fish, and leaped with all its power so high that the canoe was under it before it could return to the water.

"Not all which leaped fell into the canoe, a fair proportion were outside of the canoe path, but a catch was just as certain here as elsewhere."[4]

To let Thomas C. Keefer continue in his own words: "In 1840, I was employed by the Welland Canal Company to prepare for the Enlargement, as it was then understood that the Canal would be assumed by the Government of United Canada as soon as the Union was brought about in 1841. I remained on this Enlargement until 1845, when at the age of 23 I was appointed Chief Engineer of the Ottawa River Works for the facilitating the descent of timber at the falls and rapids of the main river and its more important branches. I was dismissed from this position after completion of Slides at the Falls of Chaudiere, Chats, Deux Joachim, Madawaska High Falls, Booms, etc., in the latter part of 1848, with flattering acknowledgements of my services - ostensibly on the ground that an Engineer was no longer required, but really on the demand of Two Members of Parliament, on whom the Government depended for their majority - because I had reported against the Chats Canal, a work which was soon after abandoned after about half a million of dollars of expenditure,....

"In 1849, Lord Elgin offered a prize for the best Essay, on the 'Influence of the Canals of Canada on her Agriculture.' I competed for this along with ten others,....

"In 1850, I was awarded Lord Elgin's Prize, and was honored with an interview in which his Lordship took exception to some view expressed in the Essay, but which I was unable to modify. His Excellency was kind enough to write the Introduction to the Essay when it was published.

"In the Essay I had advocated a 'revenue tariff' to procure such manufactures as Canada required; chiefly on the ground of the necessity of diversity of employment in order to keep our brightest young people at home as all would not be farmers, but as England had only a few years before, in 1845, become a free trade

country, I suppose His Excellency felt it his duty to discourage anything savoring of Protection. In 1850 the Hon. Hamilton Merritt, having become Minister of Public Works, I re-entered the Government service in charge of a survey of the rapids of the St. Lawrence and afterwards an Inspection of the St. Lawrence below Quebec for a harbour of refuge,...."[4]

Thomas also worked on shortening and straightening the channel through the Flats of Lake St. Peter. He recommended that all the shoals between Montreal and Lake St. Peter should be dredged to at least a 20-ft depth, thus allowing more ocean-going ships to dock at Montreal.

Probably the key contribution of Thomas, aside from his writings on the canals of Canada, on one of which I'll close, was his idea that "...the St. Lawrence-Great Lakes System was created by God to ensure the greatest good to the greatest number of inhabitants of North America. [He] passionately believed that the political boundaries established between the United States and the Canadas had shattered the basic unity of the 'great aorta of the North' and had thus blatantly undermined the divine plan."[5] He seized every opportunity to promote what he called the "air-line" route to Europe, tilting the traditional map of North America and Europe to show that the most direct route to European markets from the Great Lakes was through the St. Lawrence System, on a "great circle" path, as the airlines fly today.

It was not only the "engineering Keefers" who were involved in canals in Canada. A nephew of George, Samuel and Thomas, Francis Henry Keefer, a lawyer, MP (1917-1921) and later Under Secretary for External Affairs, continued Thomas's promotion of an international waterway between Canada and the U.S. The St. Lawrence Seaway was the ultimate result. Fittingly, when the Lakehead Terminal at Port Arthur - Fort William was dedicated, it was named the Keefer Terminal in honor of the family which had done so much to promote inland water transportation in Canada for over a century.

Even the in-laws of Thomas were involved in the canals of Canada. His father-in-law, the Hon. Thomas McKay, and his brother-in-law, John MacKinnon, were engineers for Colonel John By (for whom Bytown, later Ottawa, was named) in the construction of the Rideau Canal.

I believe that Thomas Keefer's major contribution to Canadian canals is not so much his 'hardware' output - the actual work performed on canals and other water transportation projects - as his 'software' contribution. He was able to present his ideas interestingly and persuasively to the public through his lucid writings. In addition to the Lord Elgin prize-winning essay on the Canals of Canada in 1850, he wrote a lengthy section in Travel and Transportation (1863), in which he discussed all forms of transportation, but gave canals their due, even in a time of great railroad promotion. He knew that railroads couldn't compete with water transport for payload, except of course when the waterways were frozen. "There is little question that he was one of the most effective propagandists in the nineteenth century for the vital economic significance of the St. Lawrence - Great Lakes Commercial System."[6]

5. George A. Rawlyk, "Thomas Coltrin Keefer and the St. Lawrence - Great Lakes Commercial System," Inland Seas, Vol. 19, No. 3 (Fall 1963), pp. 191-192.
6. Ibid., p. 191.

In 1893, Thomas was invited to the Columbian Exhibition in Chicago, "to contribute to the World's Water Commerce Congress a brief communication upon 'New and Enlarged Water Ways Required to Meet the Wants of Canadian Commerce,' with special reference to a 'Proposed Enlargement of the Welland Canal and Improvement of the St. Lawrence River'." In the same year he addressed the Royal Society of Canada, of which he was a member, on "The Canals of Canada." Both of these papers are full of historical details and statistics about the canals of Canada, but even in his 70's he hadn't lost his sense of humor and his ability to take a jab at a Government Commission adoption which seemed to him inappropriate. He ended both of these talks with: "The next further enlargement which may be undertaken by Canada with respect to canals, will be confined to lengthening the locks, which is practicable at reasonable cost. When this is done nearly every Lake craft now afloat could pass out to sea with 14 feet draft, and load down to 20 feet or more at Montreal. There are over 2,500 steamers in Lloyd's Register of less width, but of greater length, than the Canadian lock chambers. The modern proportions of length to beam are 8, 9, and 10 to 1. The Canadian Commission adopted the proportions of Noah's Ark, and made the lock chambers 6 to 1. At present the tendency is toward an increase of beam in proportion to length, and there may be a return to these scriptural proportions in future naval architecture; but this will not increase the capacity of those locks, though it may prove that they are not too short for their width or too wide for their length." Thus, "At Least Noah's Ark Will Fit."

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REPORT FROM THE SURVEYS AND MAPPING BRANCH, CANADA DEPARTMENT OF ENERGY, MINES AND RESOURCES

George Falconer
Surveys and Mapping Branch
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Ottawa, Ont.

The Surveys and Mapping Branch produces the fundamental surveying and mapping of Canadian territory. Its outputs include geodetic control networks, land boundary services, and topographical and geographical maps and information.

A highlight of 1978 was the publication of the report of the Task Force on National Surveying and Mapping. This Task Force made an examination of the future needs for branch products and services. Planning has started on the implementation of recommendations contained in the report. A further item of note is the continuation of the Branch's commitment to increase the amount of work contracted out to industry.

The National Topographic Series (NTS) maps, of which the 1:50 000 and 1:250 000 are the primary scales, constitute the principal topographical informational product of the Branch. Coverage at the 1:250 000 scale is complete in 918 maps; however, 36 maps were revised and published as new editions last year. At the 1:50 000 scale, production now stands at about 7400 of 13 150 maps. Completion of coverage at the 1:50 000 scale is anticipated by the year 2000. New topo mapping was done in response to requests from resource development agencies, while revision mapping was done in accordance with cycles set to take into account the varying rates of topographical change depending on regional activity.

The integration of software and hardware sub-systems for the digital stereocompilation system is basically complete and production of 1:50 000 mapping has begun. As a pilot project this system collected the data for a new edition of the 1:50 000 map of Ottawa, which was printed in November 1978. Final improvements have been made to the automated cartography system which has now been put into production to automatically draw the colour plates needed for map printing. This system thus forms the connecting link between the digital stereocompilation system and the printing presses.

Geographical map work has been concentrated on the production of the gazetteer atlas of Canada, which is scheduled for 1980 completion, and further research and cartography for the 5th edition of the National Atlas of Canada (to be available by 1984). Canadian coverage of the International Map of the World (IMW) series continued with the production of two new maps last year. A thematic map of interest was the production of the CANADA-ENERGY map which provides an overview of energy resources in this country. Toponymic achievements included the production of 9 gazetteer supplements and the verification of more than 50 000 geographic names. Work was initiated on the computerization of a national toponymic data base - completion is scheduled for 1981.

The Canada Map Office (CMO) concentrated on strengthening its authorized topographical map and aeronautical chart dealerships throughout North America. There

are now 342 topo map dealers, 298 aero chart dealers, 7 consignment centres and 141 depositories. CMO received more than 100 000 requests and distributed 3.7 million items last year. The National Air Photo Library (NAPL) received almost 17 000 requests and distributed over 800 000 products. Net revenue from map sales and air photo imagery totalled $3.3 million, an increase of 8% from the previous year.

The second edition of the three-sheet index of maps of the National Topographic Series will be published shortly and may be obtained free on request from the CMO. These new indexes do not show sheet titles for the 1:50 000 series. We have available an alphabetical listing of all sheet titles together with their NTS numbers and also an alphanumeric listing of all sheet titles together with their corresponding titles. These are available on microfiche through CMO. The listings are updated every 4 weeks and a subscription service can be arranged.

This brief overview of the activities of the Surveys and Mapping Branch during 1978 focusses on items of special interest to members of the Association of Canadian Map Libraries. More details are available in our publication ACTIVITES 1978 ACTIVITIES.

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MINUTES OF THE THIRTEENTH ANNUAL GENERAL MEETING of the ASSOCIATION OF CANADIAN MAP LIBRARIES/ASSOCIATION DES CARTOTHEQUES CANADIENNES held at Brock University, St. Catharines, Ontario, on Thursday May 24 at the hour of 13:30 o'clock

With the unanimous consent of the meeting Thomas Nagy took the chair and Maureen Wilson acted as Secretary.

Constitution of the Meeting

A quorum was recognized and the chairman declared the meeting to be duly constituted.

Minutes of the 12th Annual General Meeting

On motion duly made, seconded and unanimously carried, the minutes of the 12th Annual General Meeting held at the University of Victoria, Victoria, B.C., on June 13, 1978 were adopted as printed in the ACML Bulletin of September 1978.

Officers' Reports

(i) Treasurer's Report - On a motion duly made and seconded, the treasurer's report was unanimously accepted.

Following the report, the treasurer asked for an increase in the fee structure. After some discussion on a motion duly made and seconded, the following fee structure was accepted: full member, $15.00; associate member, $15.00; institutional member, $25.00.

On a motion duly made and seconded, it was decided that copies of the proposed budget for the upcoming year be circulated with the treasurer's report prior to the annual business meeting.

(ii) Membership Status Report - On a motion duly made, seconded and carried, it was decided that all new members should receive a copy of the by-laws.

On a motion duly made, seconded and carried, it was decided that a list of members should be included in the June issue of the ACML Bulletin.

(iii) Committee Chairmen's Reports - On a motion duly made, seconded and carried unanimously, the committee chairmen's reports as printed in the March 1979 issue of the Bulletin were adopted.

The following reports were given verbally: (a) Handbook Committee - Barbara Farrell presented a report on the progress of the Handbook. (b) Union List of Atlases, Atlantic Provinces Committee - Bill McKinnon presented the report on behalf of Brad Fay. The list is virtually complete. On a motion duly made, seconded and carried unanimously, it was decided that the Association set up a Union List Committee to look into the implementation of a National Union List of Atlases. (c) National Cartographic Committee Report update - Barbara Farrell reported a Task Force to look into the possibility of forming a joint cartoassociation was proposed. ACML would be asked to send two members.

Reconstitution of Awards Committee

It was suggested that the reconstitution of the Awards Committee be referred to the new Board of Directors and the new President agreed to this.

Editorship of the Bulletin

The editor, Ron Whistance-Smith gave his reasons both for accepting the position and for resigning from it. Robert Batchelder volunteered to be the new editor and called for papers.

Election of Officers

The Secretary announced the results of the election of the new Board of Directors as registered by the Nominations and Elections Committee as follows: President, Thomas Nagy (acclaimed); 1st Vice-President, Lorraine Dubreuil (elected); 2nd Vice-President, Geoff Castle (elected); Secretary, Margaret Chang (elected); Treasurer, Grace Walsh (acclaimed).

Publications

Thomas Nagy announced the publication of the new Folio of Map Library Plans.

ACML Conference 1980

Ron Whistance-Smith announced that the 1980 conference would be held in Edmonton.

Other Business

On a motion duly moved, seconded and unanimously carried, it was decided to send a resolution to the Deputy Minister, Energy, Mines and Resources regarding the urgency of making an appointment to the EMR map collection, with Barbara Farrell to word the resolution.

There being no further business to come before the meeting, the meeting was adjourned at 15:50 o'clock.

Maureen F. Wilson
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REPORT ON THE SPECIAL LIBRARIES ASSOCIATION: First Worldwide Conference on Special Libraries, Honolulu, Hawaii, June 10-14, 1979

This conference was sponsored by the Japan Special Libraries Association (Senmon Toshokan Kyogikai) and the International Federation of Library Associations Special Libraries Division, as well as by the Special Libraries Association. The theme of the conference was "Politics and Economics: Their Impact on Library/Information Service." The conference was attended by several thousand persons, representing 17 nations. More than 100 exhibition booths were available for viewing.

A conference-wide reception was held the evening of Sunday, June 10, during which delegates were welcomed to Honolulu and to the conference; Polynesian entertainment was provided. Open houses by division followed, which provided an opportunity to meet socially with others with similar interests.

On Monday morning, June 11, the conference keynote address was delivered by Margreet Wijnstroom, Secretary-General of IFLA. This was followed by the second plenary session on the politics and economics of international transfer of information.

The Geography and Map (G & M) Division, the division of particular interest to me, also held its annual business meeting on the Monday morning. The first formal session of the G & M Division was held Monday afternoon. David Cobb, University of Illinois, in his paper "The politics and economics of map librarianship" provided a strong argument for the G & M Division to leave the Special Libraries Association and join the American Library Association (this was a topic of conversation throughout the week with a number of persons proposing an independent association, often referring to the Canadian example).

The second speaker was Larry Cruse, University of California at San Diego, on "Collecting microcartography: sources and prospects;" an abstract of his paper follows:

> The interest of a number of map librarians, archivists, and cartographers has begun to coalesce around the idea of raising consideration of microfilm from a poor relation of paper to a first line information carrier in its own right. The effort to exploit the film medium is still in its infancy, as is the knowledge of what has already been produced. Since this is the case, some of the basic sources of cartographic microforms are discussed.

James Minton, University of Michigan discussed "Standard Map records: OCLC/MARC and the map librarian:"

> The history of map cataloging is rampant with a variety of schemes, techniques and preferences for processing cartographic materials; however, none are standard. Map librarians, who heretofore have worked with their own systems, now must learn how to catalogue maps by a uniform code, through the MARC/OCLC methods of map cataloguing. Many librarians who have never catalogued maps are most interested in doing so with a system that is similar to the one used for books, serials, documents, and so on. However, map librarians are not always familiar with AACR and LC

classification or with the tools and wherewithal to tag the various elements into an on-line cataloguing system. Yet it is only by learning a standard cataloguing process that a national cartobibliographic record can be generated for use by students, researchers, the general public, as well as by other map librarians for a variety of uses beyond cataloguing.

The session on Tuesday morning, June 12, had as a theme "Distant Parts: Cartography and map librarianship." One of the speakers, Sen-dou Chang, University of Hawaii, discussed the LANDSAT color composites for China; this imagery has great importance for an area for which little mapping is available. Two speakers - Lilian Griffin, Massey University, New Zealand, and Don Wise, Library of Congress - discussed the present situation for map libraries in two geographic areas, New Zealand and the Philippines. Ms. Griffin's paper discussed in detail the need to establish a national map collection in New Zealand.

The luncheon meeting featured Gary North of the National Cartographic Information Center as speaker, his topic being "So You Want to Find a Map:"

> The National Cartographic Information Center (NCIC) collects information about the nation's maps and charts, both past and present. Information gathered both from index data banks and from physically handling source materials and encoding index information is entered into an automated Map and Chart Information System. Irregularly shaped maps (3 to 27 corner points) may be described, and information on up to 999 sheets with intermixed insets may be entered in the case of a map set. Retrieval is batch oriented and up to 25 searches may be made simultaneously. Search criteria are determined in a dialog between the user and the computer. The user may search by subject, scale, producer, publication date, grids, contour intervals, and inset information. Geographic searches are by polygon, corridor, and point-radius. The retrieved information may be displayed in four report formats or on a plotted index map, tailored by the user as to size and projection. Standard products consist of microfiche or computer printouts arranged by state and county or latitude and longitude.

The afternoon session was dedicated to a discussion of practices in map preservation and conservation. James Craven, University of Michigan, and Mary Lee, Bishop Museum, Honolulu, discussed restorative conservation techniques, including encapsulation. Betty Kidd, Public Archives of Canada, discussed preventative measures, including handling and processing, storage, protective folders, reference, exhibitions and photocopying, including microfilming.

The Tuesday evening session, held jointly with the Honolulu Academy of Art, at their premises, featured three speakers on the history of cartography of Hawaii - Gary Fitzpatrick, Library of Congress, a general survey; Stanley Stevens, University of California at Santa Cruz, the mapping of Hawaii by Lapérouse; and Peter Morse of Honolulu, the Lahainaluna maps, drawn by Hawaiian school boys in the 19th century. The abstracts follow:

> Fitzpatrick, "The History and Geography of Hawaii in Maps"
>
> The physical and cultural landscapes of Hawaii have been drastically altered since the arrival of the first Europeans in 1778. Cartography was a flourishing art by Cook's time, so the entire spectrum of change from a traditional Polynesian society to a modern, urbanized economy is

reflected and documented in the maps of Hawaii. Hawaiian cartography also illustrates the geologic and geomorphic processes which created and shaped this chain of volcanic islands. The development of the three facets of the Hawaiian economy, agriculture, military, and tourism, can be shown through the use of maps. Each segment is represented by a unique form of cartographic materials. The way land is used for each of these segments can also be traced historically through maps.

Stevens, "The Pacific Maps of Lapérouse. An Acquisitions Guide"

A bibliographic description of the maps created as a result of the Pacific voyage of Lapérouse (1785-1788) is provided as a tool for the geography and map librarian. Recent price quotations are provided to help determine values in a highly inflationary market of antiquarian maps and atlases.

Morse, "The Lahainaluna Maps"

The Lahainaluna Maps are a little-known, unpublished group of maps. The eighty-odd copperplate engravings were made by native Hawaiians at Lahainaluna High School on Maui between 1834 and 1844. The plates were produced originally as a help to Hawaiian people in their studies of the Bible and general geography. Crude at first, they increased steadily in quality. The Lahainaluna maps of some Pacific islands are considered superior to any in the world at the time. Aside from the conventional maps, there are also a few fantasy maps that deserve special attention.

The Association's annual business meeting was scheduled for Wednesday morning, June 13, during which time I and many others took the opportunity to relax, see the sights and/or shop.

The Geography and Map Division luncheon session included a slide presentation and discussion, by William Roselle, University of Wisconsin, on the move of the American Geographical Society's library and map collection to Milwaukee:

In November 1974, The University of Wisconsin, Milwaukee initiated a four-year effort to acquire the American Geographical Society Collection and to move that resource from New York City to Milwaukee. On July 26, 1978, after some 45 months of investigation, negotiation, and legal proceedings, a justice of the New York State Supreme Court signed an order providing permission for this historic transfer. The move of the 600,000 item collection approximately 1,000 miles required sixteen moving vans and was completed on September 12, 1978. This was one of the largest collection transfers in U.S. academic library history. The four-year history of this effort, the details of the move, and plans for the future of the collection are discussed.

The afternoon session included a report on the Midwest Map Catalog, read on behalf of Patricia Moore, Newberry Library, a description of a planned cartobibliography of a small historical map collection, the Sang Collection, by Jean Ray, Southern Illinois University, and a report on the production of the new California Water atlas, by Kay Mowery, California Office of Planning and Research:

Moore, "The Procedure and Effects of the Midwest Map Catalog"

From 1975 to 1979, a cooperative group of catalogers received from the National Endowment of the Humanities two two-year grants to prepare a

regional cartobibliography of maps of the Midwest printed before 1900. Twelve Midwestern institutions and The Newberry Library participated by contributing catalogers to catalog maps of their respective states, which were held in various local libraries, the Library of Congress and other east coast libraries, and The Newberry Library. Over 20,000 maps, atlases, and birds-eye views were cataloged in the project. Catalog entries will be published in book form by G.K. Hall, and the catalog records will be distributed to their cataloguing institutions for use in local catalogs. Personnel, equipment, housing, and specific work procedures will be discussed in the light of setting up a budget for this type of project. Contractual agreements and grant provisions will also be discussed. Numerous slides will be shown to illustrate the type of materials included and work forms used in the four-year project.

Ray, "Cartobibliography of the Mississippi Valley, Especially as Represented by Maps in the Sang Collection at Morris Library, Southern Illinois University - Carbondale"

In 1965 the Map Library of Morris Library, Southern Illinois University - Carbondale received as a gift from Philip Sang a collection of some sixty rare maps of the Mississippi River and Valley, which were assembled by Kenneth Nebenzahl, a Chicago dealer in rare maps. The maps range from a leaf from an Ortelius atlas dated 1560, reputed to be the earliest separate map of the American Southeast, to French and English material of the early nineteenth century. A project will be undertaken to identify these precisely.

Mowery, "California Water: Politics and Economics of a New Atlas"

When the 1976-77 drought intensified the need for California water resources data, the Water Atlas Project was conceived to compile the varied and voluminous information collected by government agencies and provide a single-volume point of access for researchers and the public. The atlas includes 37 pages of multicolored original graphics incorporating advanced design and cartographic techniques. The graphics operate at several levels of understanding and are complemented by 83 pages of narrative. Production of the atlas demonstrates that customary political and economic constraints can be overcome when extraordinary cooperation is directed toward objectives shared by the participating government agencies.

The last formal session of the G & M Division was held Wednesday evening at the University of Hawaii Map Room where the mapping of countries in the Pacific Basin was displayed, including mapping from Australia, New Zealand, Tasmania, Fiji and Papua New Guinea. Unfortunately the Japanese material did not arrive in time for the exhibition.

Betty Kidd
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REPORT ON THE MEETING FOR CANADIAN MEMBERS AND AFFILIATES OF IFLA: June 16, 1979

No formal minutes for a similar meeting held in June 1978 were issued but notes taken at that meeting were used as an agenda for the 1979 meeting.

1. IFLA UBC Office

Miss Hope Clement commented on the following points: MARC tape exchange agreements; the need for an international MARC centre at Frankfurt; the establishment of a new IFLA programmes management structure, i.e., UBC, UAP, IMNO; and the need for a study of the function of an international MARC centre. Dr Sylvestre commented that he felt it was a move in the right direction to have a management committee (i.e., one body) to monitor the three main IFLA programmes.

2. Access to Standing Committees of Sections

Miss Gifford quoted from the IFLA Journal that "most standing committees have permanent observers." People wishing to become permanent observers may ask the chairman of the standing committee for such status. (Each standing committee can make its own decision concerning admittance of permanent observers.) Mr Ed Buchinski commented that the standing committee on cataloquing and mechanization tried to get a roster of knowledgable people who could then become members or experts to work on specific projects, but they have since changed tactics on this score.

3. Desire of Art Librarians to Form an Art Section in IFLA

A project is under way - a world directory of art libraries, part of which will be available at the Copenhagen conference.

4. Association Fees

Miss Gifford repeated the information she had issued in her memo of May 9, 1979, which discussed the great increase in IFLA fees. Despite the fee increases, participants at the meeting indicated that Canadian institutions would retain IFLA membership.

5. Representatives at Copenhagen Meeting

Representatives of Canadian institutions will have to vote on the following major items at the Copenhagen meeting: presidential elections (Dr G. Sylvestre has been nominated as IFLA president), IFLA executive board elections and IFLA fees.

Miss Gifford is concerned that votes by proxy should conform to IFLA regulations and she will be sending a questionnaire and attempting to arrange such voting for members who cannot attend the meeting. This will be sent out around June 26, 1979. If a sufficient number of Canadians attend IFLA in Copenhagen and a number of proxy votes can be organized, Canada will then be able to utilize almost all of its 70 votes. N.B. Only one proxy vote per member is allowed under IFLA regulations. Membership certificates are necessary in order to vote by proxy.

6. Canadians Involved in the Copenhagen Meeting

Several Canadians will be giving papers or reporting on progress in various areas,

including: H. Campbell who will be talking on public library legislation, H. Clement who will be talking on authority files, T. Delsey who will be giving a progress report on the working group on authority systems.

7. UNESCO and the General Information Programme (GIP)

It is necessary to develop a wider knowledge about GIP in Canada. The Programme is not a large operation but it does cover a wide range of subjects. The Canadian National Commission and Department of External Affairs are in discussion concerning this programme. It was pointed out that Canada is privileged to be one of 30 governments who have a representative on the Intergovernmental Council.

8. Elections to be Held in Copenhagen

Dr G. Sylvestre has been nominated for IFLA president.

Dr Sylvestre raised a problem about the election of members for the executive board of IFLA. He felt there should be at least one person on that board from a developing country, although this is not in the by-laws of the Association. He suggested that Canada, along with other countries who have large blocks of votes, should support a candidate from a developing country.

9. Other Business

Elections for officers of standing committees - these are elections that take place within the standing committees and are often conducted through a ballot by mail.

10. Resignation of Canadian IFLA Co-ordinator

Miss Gifford is resigning as co-ordinator. Dean Halliwell has agreed to become co-ordinator as of August 15, 1979.

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Matthews, Geoffrey J. Atlas of Canada in Bold Print. Toronto, Canadian National Institute for the Blind, 1978. 45 p. $8.95

It is virtually impossible for a person with impaired vision to use regular maps and atlases. This imposes severe limitations on children in school who are trying to cope with geographical studies and adults who would like to use maps and atlases for reference purposes. I was, therefore, immediately attracted to the Atlas of Canada in Bold Print designed and produced by Geoffrey J. Matthews for the C.N.I.B.

This reviewer speaks from experience, having reduced vision, and I can say that it is a delight to be able to use an atlas for general and specific reasons. producing the atlas in bold print has not, in my opinion, interfered with its effectiveness as an atlas or distorted the perspective an atlas should convey to its user. This atlas does not lose its integrity because it deviates from certain accepted norms of cartography.

The quality of the atlas is assured as it is the work of an outstanding cartographer, Geoffrey Matthews. The atlas includes maps of lakes and rivers, population, transportation, climate, geology, soils, vegetation, agricultural land use and the economic regions of Canada. There is a glossary and a section on basic statistics. The bold primary colours and large typefaces make the content of the maps marvellously clear so that learning is easier and reference use is quick and precise. The details on maps always present a serious problem, but the symbols designed make such details intelligible. Many people, for the first time, will be able to comprehend what is on a map aside from the obvious name and outline of a province or area or major city. The regional economic map index, for instance, in its clarity demonstrates the effectiveness of the well chosen colour schemes and symbols which are prevalent throughout this atlas.

I would suggest, however, that even closer attention might be given to spacing; for example, on page 2, Cape Breton appeared to me as all one word. I am sure that, as the atlas is put into use, there will be many suggestions to refine the excellent work that has been produced.

In summary, this atlas achieves its purpose in that it enables people with reduced vision and, I might add, people with specified learning disabilities to read a map and, subsequently, to grasp basic geographic concepts. The C.N.I.B. and Geoffrey J. Matthews are to be congratulated on this endeavour and I hope that further projects of a similar nature will be undertaken.

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Karan, P.P. and Mather, Cotton (eds.). Atlas of Kentucky. The University Press of Kentucky, 1977. xii + 188 p. ISBN 0-8131-1348-2. $19.50 U.S.

The popular North American stereotype of an atlas has long been a collection of maps of the world, the continents, the major countries, and the states and provinces, almost entirely locational, emphasizing cities, villages, rivers and railroads (or more recently major highways) against a background of either political units or hypsometric relief. Topical maps, if present at all, were marginal and little used or understood.

We are now witnessing almost a flood of a new breed of atlas, dominated by topical maps and covering a single province or state. Whether this is leading or following a shift in the sort of information the general public wants from an atlas is hard to say. It does present a new problem for the librarian. How much of such coverage can be justified? Will the public learn the new reference habits assumed by the designers?

Of such atlases designed for the public and school reference clientele, the Atlas of Kentucky is certainly one of the best. The maps are clear and informative; the accompanying text well written and pertinent; most of the half-tones are relevant, though an occasional one seems more ornamental than useful. I cannot imagine any school or public library in Kentucky not finding it immensely valuable.

This atlas has gone the whole way; there is no general locational map at all, just a double page entitled "Physical Framework" with only a dozen towns shown and fewer than a dozen physical features named. An opportunity was missed to design something more informative than the old style atlas map with a greater variety of features located.

Thematic information is generally presented on a county base. The counties are unlabelled, but an acetate overlay in a pocket provides their names for the three most frequently used scales: 1:2 500 000, 1:3 900 000, and 1:5 000 000. There are five on larger scales, and unaccountably five that fall within the range of the standard scales but do not fit the overlay - one (76) missing by only 4%!

Most maps show current conditions, but there are a number of interesting time series, the most notable perhaps being seven maps showing the development of the urban hierarchy from 1800 to 1970. Most use data from standard sources and generally use them well, occasionally innovatively. Two, however, dealing with Church Affiliations (15 and 16) have accepted too nearly at face value data that are inadequate. (D.W. Johnson, P.R. Picard and B. Quinn, Churches and church membership in the United States, 1971.) Twenty-four counties are shown as having less than 53% of adults church members. I doubt that any fall below this figure. For example, the source lists 11 churches in Martin County, whereas in my still incomplete mapping I have found 49, and I know the situation is comparable in several other counties.

I am sure others might cavil at some of the material in their specialty; however, by and large, Karan and Mather have produced an atlas that will be very useful and will contribute strongly to establishing a standard for the type.

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Sommers, Lawrence M. (ed.). Atlas of Michigan. Lansing, Michigan State University Press, 1977. ISBN 0-87013-295-9. Distributed by Wm. B. Eerdmans Publishers. $27.50 U.S.

This work is one of the latest general atlases of U.S. states to appear. With some reservations, it can be recommended to Canadian users. The stated purpose of the atlas is to serve as a basic reference volume for the general reader, students, teachers and specialists. The level of the essays is a bit simple for university students; however, because of the great range of subjects mapped, it is worthy of university map libraries. There is some coffee table orientation, as evidenced by pictorial sections on waterfalls, statues, etc.

The atlas is arranged into eight topical sections, each prefaced by an essay of approximately six pages. The 256 pages contain 400 maps, 85 graphs and 160 photographs. There is a three-page index, an extensive bibliography divided according to the subject sections and one appendix containing selected statistics by county. A useful addition would have been an appendix of urban statistics. Each section uses a different page background colour for ease of theme identification. Most maps are half-page size or smaller, with descriptive text neatly boxed below each map. In the socio-economic sections there are two or three maps per page, with one per page in the physical section.

The Atlas of Michigan contains few cartographic innovations, except for the computer-produced isometric projection. Most maps employ isoline or choropleth techniques on a base map of the state showing county divisions. All maps are in colour and the tones are very pleasing. Population maps using isodemographic and yellow dot on black background techniques look very familiar. The atlas measures 31 x 24 cm. Paper and binding are satisfactory, but the cover is a bit flimsy for library use. Printing is generally good, although a few coastlines are poorly registered.

A particularly interesting feature is a section on "Michigan Tomorrow" containing projected socio-economic changes through the year 2000. Noteworthy are maps showing proposals for the reformulation of U.S. state and administrative boundaries. Contrasted with this excellent feature, however, are several faults. There is very little coverage of metropolitan Detroit. In the historical section, there is a curious lack of information for the period 1812-1815. A serious deficiency is that the only general reference map of Michigan is a reprinted Rand McNally road map; surely something original could have been produced. Despite these faults, however, the Atlas of Michigan is a useful addition to the developing collection of U.S. state atlases.

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Robinson, Arthur, Sale, Randall and Morrison, Joel. Elements of Cartography. Fourth edition. New York, John Wiley & Sons Inc., 1978. 448 p. ISBN 0471-01781-7. $19.95 U.S.

"Cartography is in the midst of a revolution" state the authors in their preface

to the fourth edition of this well known and well established basic textbook. Technical developments in cartography have been considerable since the last edition was published in 1969 and the new edition goes to some lengths to incorporate the new developments and new knowledge which have enabled cartography to progress so rapidly. However, "We have tried not to be lured too far from the basics by the excitement of innovation, but have tried to integrate modern developments with the fundamentals of this age-old field." They would appear to have succeeded in their aim.

The fourth edition offers us an additional author, two-colour printing, metricated text, much of it re-written, and a reorganized series of chapters. The projections chapter is reduced in size and much of the information is now in appendix form. Remote sensing is added to the chapter on photogrammetry. There is a new chapter on generalization and a more thorough treatment of symbolization. The application of computer and automated methods is included wherever appropriate and a separate chapter deals with computer-assisted cartography with a glossary of terms. Graphic design is treated in greater depth than previously with very full coverage of compilation methods, typography, and colour proofing and printing.

From the production aspect, there is a notable improvement with the introduction of two colours providing contrast within the text and greater clarity in the maps and diagrams. The book has thus more visual unity. The new type face, though interesting graphically, contains defects detracting from the visual 'flow' of the text.

With the use of definitions of cartography as "a communications system," and a map as simply "a drawn representation of geographical space," we are entering into an era of increased sophistication where the journeyman cartographer finds it difficult to assess the usefulness of this type of labelling. However, as the communications bandwagon rolls on, we shall await further developments. It is, nevertheless, useful to students of cartography to have new ideas and themes aired in a basic cartography textbook. Elaborating on the theme of cartography as a communications system, the authors describe it as including "any activity in which the preparation and use of maps is a matter of basic interest. This includes teaching the skills of map use, studying the history of cartography, maintaining map collections and the associated cataloguing and bibliographic activities, and designing and constructing maps, charts, plans, and atlases." Tomorrow's (and today's) cartographers need to keep in mind the interdependent nature of their profession, avoiding fragmentation of knowledge by over-specialization and thus impeding the useful interchange of ideas.

In essence, this new edition of Elements of Cartography continues in the excellent path set by previous editions in providing a first-class textbook for cartographers both at student and practising levels, while definitively reflecting the state of cartography as we approach the 80's.

Fiona Cowles
Free-lance cartographer
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Otness, Harold M. Index to Early Twentieth Century City Plans Appearing in Guide Books. Western Association of Map Libraries Occasional Paper No. 4, 1978. xxx, 91 p., ill. $6.00. Available from: WAML c/o University Library, University of California, Santa Cruz, CA 95064.

This paperback is an index to city plans in a number of guidebooks which span the years 1902 to 1936. Baedeker guides form the greater part of those indexed with 28 guides, followed by Muirhead-Blue Guides, Murray, Thomas Cook and lesser known guides such as the Madrolle guidebooks covering China and French Indo-China and the Aspinwall guide to the Caribbean. All of these important guidebook series are useful for their city plans and provide a cartographic cross section of the guides of the period. In the introduction the author describes in considerable detail the major guidebooks of the period, the description of the Baedeker guides being of particular interest (for example, in 1942 Goering ordered that all the sites in Great Britain having stars in the Baedeker guidebook be bombed).

Altogether there are over 2000 plans to over 1200 communities, found in 74 guidebooks.

The index itself gives city, country, scale, size in centimetres and an abbreviation of the guidebook in which the plan appears. No date is given, but the list of the guidebooks, with the key to abbreviations (at the end of the book), gives edition and date. No page references are given since the guides have their own indexes. Most of the plans are in colour, "b & w" indicates those that are not.

The scale of the plans ranges from 1:4500 to 1:100 000 and the size from a 3 x 6 cm plan of the environs of Fredrikshold, Norway, to a 28 x 25 cm plan of Bologna. The arrangement is alphabetical by place name, usually the commonly used English name, with a cross reference if there is more than one commonly known name, i.e., a reference is made from Aswan to Assuan, or from Ancon to Panama City.

All major cities were not mapped and therefore are not included in the index. Omissions occur for the names of some of the capitals of South American countries; Buenos Aires, Lima, Rio de Janeiro and Santiago are listed as appearing in plans in H.L. Foster's If you go to South America, but not La Paz or Quito, the capitals respectively of Bolivia and Ecuador. The capitals of Argentina and Chile have town plans which appear in the Argentine and Chile "Baedekers," which Otness says were blatant attempts to cash in on the Baedeker reputation. Their city plans were crude, but they were about the best available in guidebook format.

The best city plans are found in the Baedekers, and cartographically and geographically, the best Baedekers appeared just prior to World War I. Those editions are included in this index. Only three of the indexed volumes, all dated 1914, are considered scarce: Konstantinopel, Indien and Russia.

The Baedeker plans were made by the firm of Wagner & Debes of Leipzig. The firm was formed late in the 19th century when Eduard Wagner, his son Heinrich, and Ernest Debes, an outstanding cartographer from Gotha, combined to provide Baedeker with outstanding maps and city plans.

The Muirhead-Blue Guides are dated between 1922 and 1928. Over 400 city plans

are indexed here. Otness points out that interesting comparisons can be made of European cities by examining the pre-World War I plans found in the Baedekers ... and the post-World War I plans found in the Muirhead-Blue Guides.

This index will be particularly useful for a library with a large collection of guidebooks from the early part of the century, or for the individual interested in the city plans of this period.

Pat Fysh
Reference Department
University of Toronto Library
Toronto, Ont.

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New Titles

The following titles have been received by Joan Winearls, Review Editor:

Atlas of fantasy, by J.B. Post. Revised. 1979.

Climatic atlas of Nebraska, by Merlin P. Lawson et al. 1977.

Hydrological atlas of Canada/Atlas hydrologique du Canada, by Environment Canada. 1978.

Map use, by Philip Muehrcke. 1978.

New Zealand in maps, by Anderson A. Grant. 1977.

New Oxford atlas. 1978.

Penguin atlas of world history, v. 2. 1978.

If you are interested in reviewing any of the above, or if you wish to suggest other items for review, please contact Joan Winearls, ACML Bulletin Review Editor, Map Library, University of Toronto Library, 130 St. George Street, Toronto, Ont. M5S 1A5.

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THE WESTERN ASSOCIATION OF MAP LIBRARIES has announced that their fall meeting will consist of a special two day map cataloguing workshop using resource people from the Library of Congress Geography and Map Division, the School of Library Science at the University of Arizona, and the Cataloguing Department at the University of Arizona. Objectives of the workshop are to explore AACR II (authority files and uniformity of entry) and MARC-MAP (OCLC and developments in data bases). Hands-on cataloguing is being planned. Registration fee $5.00; materials fee (includes cataloguing procedures manual) $5.00. Registration for principal region members (includes Alberta and British Columbia in Canada) to August 31. Registration opened after that if spaces left to other interested persons. For further information, contact Linda D. Cottrell, Map Librarian, University of Arizona Library, Tucson, Arizona 85721, U.S.A. (phone: 602/626-2596).

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THE COURSE ON CARTOBIBLIOGRAPHY to be given by Coolie Verner at the University of Toronto which was announced in the last Bulletin was cancelled due to lack of registrants.

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A course entitled "HISTORY OF CARTOGRAPHY (A guide to map collecting)" is being offered by Algonquin College in Ottawa. The course is designed to provide the basic background information for the formation of a collection of antique maps and for those interested in the field of cartographic history and early Canadian exploration. Topics will include: history of surveying; map production; care of the collection - preventive and restoration measures; authentication and use of reference material; history of cartography from the Byzantine to the present day, with emphasis on the mapping of Canada from 1600 to 1920; there will be a tour of the National Map Collection and conservation section. The course will last 10 weeks, starting Thursday, September 27, 1979, from 7 to 9 p.m. every Thursday evening. Fee: $45.00 payable with registration. For further information, contact the Continuing Education Office of Technology and Trades Division, 200 Lees Ave., Room 105, Ottawa, Ont. (237-8101).

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GEOGRAPHY AND MAP LIBRARIES SECTION, IFLA: (Special) Newsletter No. 9.

Dear Colleagues,

On the occasion of the 70th Annual Conference of the Special Libraries Association, the IFLA Geography and Map Libraries Section sends a special newsletter. This newsletter is dedicated entirely to the organization of a "Practical Seminar for Map Curators, with special reference to developing countries" planned for 1981. The seminar will last 10 working days and will be organized in Utrecht (the Netherlands) in the summer of 1981. The maximum number of registrants will be 25. For some of the registrants we hope to have stipendia available at that time. In this respect it is important for us to receive tentative applications as soon as possible. If the seminar turns out successfully in Utrecht, we hope to repeat it in developing countries. The organizing committee consists of dr. Helen Wallis (Map

Library, British Library, London, England), dr. Lothar Zögner (Staatsbibliothek Preussischer Kulturbesitz, W-Berlin, Germany) and dr. Hans van de Waal (Geografisch Instituut, Utrecht, the Netherlands). The committee's address is Geografisch Instituut, Heidelberglaan 2, Utrecht, the Netherlands.

For this seminar a "Manual for map curators, with special reference to developing countries" will be published. Some of the authors of the Manual (which has as yet to be printed) will give instruction during the seminar. At a meeting of the organizing committee in November 1978, the subjects and chapters of the manual were tentatively fixed. At the IFLA Conference in Copenhagen (August 1979) the programme of the seminar and the contents of the manual will be fixed more definitely. Till now we have only decided that the manual will contain the following chapters:

I Introduction and Objectives - Cartographic materials play an important role in all matters that have spatial aspects. They are the only means to gain an insight in the spatial coherence of phenomena that surpass our perceptive faculties. Cartographic materials make it possible to reproduce historical situations as well as actual and future situations, which gives them a leading role in preparation and execution of development policies. The increasing numbers of maps produced in developing countries prove that this thesis is generally accepted; but much of the information goes astray because of faulty documentation.
The main objective of the seminar and the publication of the manual will be to stimulate the documentation and preservation of cartographic materials. It is the only way to make investments for the production of maps remunerative and to employ these sources of information.

II Introduction to Cartographic Materials - 1. History: from portulan charts to national atlases and from primitive maps to satellite images. 2. Types of cartographic materials: e.g., line maps, aerial photographs, computer maps, remote sensing images and their technical/informative characteristics. 3. Cartographic materials as sources of information: topographic as well as thematic maps and other images on scale represent all kinds of processes occurring on the earth. Because of the fact that each scale requires its own degree of generalization, cartographic images can help with the integration of different levels of policy making and its realization. Representing different phenomena at a common scale benefits the horizontal integration also.

III The Collection - 1. History of map collections. 2. Cartographic materials in libraries, archives and museums. 3. Physical planning of the collection: the housing of the collection and the necessary facilities, such as a reading room and equipment for the use of the public, with special attention to the storage. 4. Acquisition and reference works. 5. Documentation: bibliographic descriptions and entries for retrieval in automated and non-automated systems. 6. Conservation and restoration.

IV Map Lore - cartographic folklore.

V Cartographic Characteristics - 1. Technical aspects: introduction to subjects such as map production, cartometry, scale and coordinates. 2. Cartographic terms: types of thematic and topographic maps.

VI Management and Staff Training - Stimulation of the use of cartographic materials by attracting public, for instance by organizing exhibitions, publication of acquisition lists and cartobibliographies.

VII National and International Organization - 1. National and regional map curator's circles. 2. International cooperation among map curators. 3. Liaisons with other organizations.

VIII Index, Including Terms and Abbreviations

IX Literature Concerning Map Curatorship

May 1979
For the organizing committee,
dr. Hans van de Waal

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NOUVELLES DU QUEBEC

Les derniers mois ont été marqués, au Québec, par le départ d'un certain nombre de cartothécaires; ils ont été remplacés par les personnes qui suivent à qui nous souhaitons la bienvenue. (Afin de tenir le Répertoire des collections des cartes canadiennes à jour, nous référons à la page où il sera bon d'indiquer le changement.)

Monsieur Roland Bélanger assume la responsabilité de la Collection de cartes de la Société historique du Saguenay en remplacement de Mgr Victor Tremblay qui est décédé il y a quelques semaines (Répertoire, p. 72).

Monsieur Pierre Gaudreau, bibliothécaire de référence en géographie, histoire et sciences de la Terre assume la responsabilité de la Cartothèque à l'Université du Québec à Chicoutimi en remplacement de Luc Guinard (Répertoire, p. 73).

Mrs. Carol B. Marley a remplacé Mrs. Elaine Yarosky à la McLennan Library de l'Université McGill, en tant que cartothécaire au Department of Rare Books and Special Collections (Répertoire, p. 76).

Madame Christiane Desmarais occupe le poste de cartothécaire à l'Institut national de la recherche scientifique de l'Université du Québec en remplacement de Mme Céline Laperrière-Boyer (Répertoire, p. 82).

Madame Claudie Ochietti occupe le poste de chef de la Cartothèque à l'Université Laval en remplacement de Monsieur Yves Tessier; Monsieur Yves Tessier est maintenant directeur du Secteur de l'exploitation et du développement de la Bibliothèque générale de l'Université Laval (Répertoire, p. 90).

Madame Marie-Thérèse Gagné a remplacé Mme Diane Boisvert comme responsable de la cartothèque à l'Université de Sherbrooke (Répertoire, p. 91).

Pierre Lépine
Bibliothèque nationale du Québec
Montréal (Qué.)

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FROM THE AMERICAN CONGRESS ON SURVEYING AND MAPPING, CARTOGRAPHY DIVISION

The Cartography Divison of the American Congress on Surveying and Mapping is pleased to announce that Professor Arthur H. Robinson, the Lawrence Martin Professor of Cartogrphy at the University of Wisconsin - Madison, is the first recipient of its newly established Cartography Division Award for Meritorious Service to the Discipline of Cartography.

Professor Robinson's many contributions to the discipline need no detailed restatement for most members of the surveying and mapping profession in the United States. Some highlights of Professor Robinson's distinguished career include his service as President of the International Cartographic Association, and currently as Vice President of that Association, Chairman of the Cartography Division of ACSM, recipient of the Earle J. Fennell Award, Honorary Membership and Life Membership in ACSM, author of the basic English language textbook Elements of Cartography, now in its 4th edition, and service as the first editor of the American Cartographer.

Professor Robinson, perhaps more than any single individual alive in the United States today, has fostered the specification of a foundation and a methodology for the cartographic discipline. The Cartography Division is proud to present its first Award for Meritorious Service to the Discipline of Cartography to Dr. A.H. Robinson.

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BOARD ON GEOGRAPHIC NAMES ADOPTS PINYIN NAMES FOR THE PEOPLE'S REPUBLIC OF CHINA
(from: Foreign Names Decisions of the U.S. Board on Geographic Names,* no. 2, January 19, 1979)

On 23 January 1979, the U.S. Board on Geographic Names announced its approval of Pinyin names for geographic features in the People's Republic of China (P.R.C.). The Board also pointed out that it would regard an atlas of China produced by the P.R.C. in 1977, "Zhonghua Renmin Gongheguo Fen Sheng Dituji (Hanyu Pinyinban), Ditu Chubanshe" [Provincial Atlas of the People's Republic of China, Hanyu Pinyin Edition, Cartographic Publishing House], as the primary source of Pinyin names for the time being. While approving Pinyin names, the Board recognized that full conversion by U.S. agencies would require a considerable period of time because there are vast numbers of maps, reference works, and library documents that would require changing, and because the Pinyin romanization system, designed for Han characters, cannot be applied with certainty to large parts of the P.R.C. where Chinese is not the local language. To complete the conversion process, many more names from the P.R.C. will be required. The new policy does not affect Taiwan where the Wade-Giles romanization system is still in use. The use of conventional names (Canton, Szechwan, and other traditional forms) in the P.R.C. is also approved.

*Foreign Names Decisions of the U.S. Board on Geographic Names is an irregular bulletin containing information about recent decisions made by the Foreign Names Committee of the U.S. Board on Geographic Names. It is designed to list new names approved by the Foreign Names Committee.

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AN APPEAL FOR MAPS FROM THE 1980 IGU-ICA MAP DISPLAY COMMITTEE

Dear Colleague,

The Canadian Committee for Geography and the National Commission for Cartography have accepted the task of organizing the Canadian contribution to the joint map exhibits at the 24th International Geographical Congress and 10th Conference of the International Cartographic Association to be held in Tokyo, Japan, in August-September 1980. The 1980 IGU-ICA Map Display Committee now seeks your assistance in collecting maps produced in Canada and suitable for the national display.

The themes selected by the Japanese Exhibits Committees to which Canada will contribute are as follows: (1) recent thematic maps (1976-1979); (2) recent national and regional atlases (1976-1979); (3) latest geo-information systems including remote sensing techniques, which can be utilized for geographical investigation and research, particularly on natural resources and environment; (4) experimental maps and maps for the future including computer-assisted cartography and new cartographic ideas; and (5) recent literature on cartography (publication display).

These themes are sufficiently broad to permit consideration of a wide variety of maps relating to many subject areas. The basic criteria to keep in mind are: maps should relate to one of the above themes; maps and publications must be printed between 1976 and 1979; and maps should be innovative in content, technique or presentation.

Anyone wishing to send material for consideration is asked to follow the directions given below: (1) Send two copies of the material (flat or loosely rolled, not folded). (2) Ensure that materials are safely wrapped in sturdy map tubes or boxes. (3) Send materials to: Neil G. Grant, 1980 IGU-ICA Map Display Committee, c/o Geographical Services Directorate, Surveys and Mapping Branch, Energy, Mines and Resources, Room 178, 615 Booth Street, Ottawa, Canada K1A OE9. (4) Prepare a brief caption of 200 words indicating: who produced and published the map; the purpose for which the map was developed; the type of information portrayed; any outstanding or unique features related to the map's content, technique or design; the users of the map; the languages in which the map is available; and how copies may be obtained (give full details).

Submissions must be received by October 1st, 1979. All materials will become the property of the 1980 IGU-ICA Map Display Committee and the decision of the Committee will be final.

In order to prepare an interesting and impressive exhibit for Tokyo, we require co-operation across Canada. Your assistance would be greatly appreciated.

Wendy Simpson-Lewis, Chairman
1980 IGU-ICA Map Display Committee
Ottawa (819)997-2100

1980 IGU-ICA Map Display Committee:

Michael Coulson	Neil Grant	Lou Skoda
Aileen Desbarats	Pierre Hubert	Wendy Simpson-Lewis

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Anglo American Cataloguing Rules (AACR II). (Canadian Library Association, 1978, $15.00.)

Where's That New Rule, by Ronald Hagler. (Canadian Library Association, 1978, $5.00.)

Both publications are available from: Canadian Library Association,
151 Sparks St.,
Ottawa, Ont. K1P 5E3

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Wheeler, by Esther Fraser. (Banff, Summerthought Ltd., 1979, 156 p., $14.95.) This is a biography of A.O. Wheeler upon whom a paper was given at last year's conference

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Natural resources inventory information, 1979. (Edmonton: Alberta Energy and Natural Resources, 1979. Report 37.) This comprehensive inventory of resource information keyed to 71 maps covering geology, non-renewable resources, hydrology, pedology, ecological land classification studies, general inventories and climatology is available from: Resource Evaluation Branch, Alberta Energy and Natural Resources, Petroleum Plaza North, 9945 - 108 Street, Edmonton, Alta. T5K 2C9.

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Répertoire toponymique du Québec. (Québec, La Commission de toponymie, 1978, 1200 p., $15.00.) Prepaid to Ministre des Finances du Québec (order from: L'Editeur officiel du Québec, 1283, boul. Charest ouest, Québec (Qué.) G1N 2C9).

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Ontario geological map, 1:1 013 760. Revised compilation 1976. (Toronto: Ontario Geological Survey [1979], Maps 2391 to 2396.) Address: Ontario Geological Survey, Ministry of Natural Resources, Parliament Buildings, Toronto, Ont.

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1976 CENSUS OF CANADA: maps showing geostatistical boundaries

Reference maps: census divisions & subdivisions, census metropolitan areas and census agglomerations. (Census 1976, catalogue 92-811, $4.25.)

Provincial census tracts. [Shows census tract boundaries on maps 1:665 000.]
Atlantic Provinces. (Census 1976, catalogue 95-851, $3.00.)
Quebec Province. (Census 1976, catalogue 95-853, $3.00.)
Ontario Province. (Census 1976, catalogue 95-855, $3.00.)
Western Provinces & Territories. (Census 1976, catalogue 95-857. $3.00.)

Agriculture graphic presentation. (1976 Census, catalogue 96-871, $6.00 in Canada, $7.20 elsewhere.) "114 colour and black and white maps display at a

glance information about many aspects of Canadian agriculture - and from the numbers of farms, the density of croplands or the change in wheat acreages since 1971, to the proportion of Canadians who live on farms or the regions where farm real estate values are highest."

Maps are available from: Publications Distribution, Statistics Canada, Ottawa, Ont. K1A 0S9. Enumeration areas are available on microfilm; for more information, contact: Census Information Services, Statistics Canada, Ottawa, Ont. K1A 0T7.

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The Atlas of British Columbia has just been released. The atlas consists of 144 pages with 115 colour maps and was edited by A.L. Farley. It is available for $45.00 from: University of British Columbia Press, 2075 Westbrook Mall, Vancouver, B.C. V6T 1W5.

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Atlas of index maps: large scale mapping projects. (Victoria: Surveys and Mapping Branch, Ministry of the Environment, 1979-).

Atlas of index maps: air photo mosaics completed. (Victoria: Surveys and Mapping Branch, Ministry of the Environment, 1979-).

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Skylab 4 photography catalog, multispectral, earth terrain, Hasselbad, Nikon cameras. (Albuquerque: Technology Application Center, University of New Mexico, 1976, 2nd ed. $30.00.)

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PUBLICATIONS UPCOMING

The northpart of America [an atlas of facsimile maps], by Coolie Verner (Toronto, Longman Canada) has been tentatively scheduled for printing in late 1979.

A concise atlas of world geology and mineral deposits, by Duncan R. Derry (Suite 2302 - 401 Bay Street, Toronto, Ont. M5H 2Y4). The author hopes that the atlas will be published in the latter part of 1979 - further information is available from the above address.

Guides to official mapping: Canada, by Norman Nicholson and Lou Sebert, will be copublished by Dawson in England and Archon Books, Shoestring Press in Hamden, Connecticut, Mass. in December 1979. Volumes for the United States and Africa are in planning.

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(Associate)

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Université du Québec à Chicoutimi
930 est, rue Jacques Cartier
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Attn: Luc Guinard
(Institutional)

Archeotec
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Attn: Lorraine Dubreuil
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Concordia University
Geography Department
2080 Mackay, Room X-105
Montreal, P.Q. H3G 1W4
Attn: K. Fitzpatrick
(Institutional)

Cartothèque - INRS Urbanisation
3465 Durocher
Montréal (Qué.) H2X 2C6
Attn: Celine Laperrier-Boyer
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Cartothèque de Département de Géographie
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(Institutional)

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Université du Québec a Montréal
C.P. 8888
Montréal (Qué.) X3C 3P8
Attn: M. Bernard Chouinard
(Institutional)

Archives Nationales du Québec
Ministère des Affaires Culturelles
Parc des Champs de Bataille
Québec (Qué.) G1A 1A3
(Institutional)

Université Laval
La Cartothèque
Bibliothèque générale
Québec (Qué.) G1K 7B4
Attn: M. Yves Tessier, Directeur
(Institutional)

Université du Québec à Rimouski
La Cartothèque
300, avenue des Ursulines
Rimouski (Qué.) G5L 3A1
Attn: M. Yves Michaud
(Institutional)

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Département de géographie
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Linda Camponi
National Map Collection
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Louis Cardinal
104-257 Lisgar
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Gilbert Caron
Collection nationale de cartes et plans
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Geological Survey of Canada
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120 Metcalfe Street
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University of Ottawa
Morisset Library
Serials Current (ML)
Ottawa, Ont. K1N 9A5
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80 Elgin Street
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Orders/Serials Department
Metropolitan Toronto Library Board
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Royal Ontario Museum
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Faculty of Library Science
Library, Room 404
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University of Toronto Library
Serials Department
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Dora Hood's Book Room Ltd.
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34 Ross Street
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Downsview

Serials Department
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Provincial Archives of Manitoba
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California State University at Fresno
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Serials Department
University Research Library
University of California
Los Angeles, CA 90024
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Serials Records C-075A
Acquisitions Dept. Library
University of California, San Diego
La Jolla, CA 92093
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Columbia University Libraries
Book Acquisitions Dept.
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New York, NY 10027
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Periodicals Desk - RS
Libraries
University of Georgia
Athens, GA 30602
(Institutional - other)

Serials Section
Illinois State Library
Centennial Building
Springfield, IL 62756
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Serials Department
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Indiana University Library
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University of Minnesota Libraries
Serials Records
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Pattee Library
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University of Iowa Libraries
Iowa City, IA 52242
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Surveying College
P.O. Box 1844
Tehran, Iran
Att: Col. (Ret) Baba Moghadam
(Institutional - other)

NEW ZEALAND

Alexander Turnbull Library
(USSI 4652)
12-349 Wellington N.
Wellington, New Zealand
(Institutional - other)

SCOTLAND

National Library of Scotland
Book Purchasing Section
Edinburgh EH1 1EW, Scotland
(Institutional - other)

SOUTH AFRICA

State Library, Order Division
P.O. Box 397
Pretoria 001
South Africa
(Institutional - other)