

CANADIAN CARTOGRAPHIC ASSOCIATION



ASSOCIATION CANADIENNE DE CARTOGRAPHIE

Published quarterly

NEWSLETTER

Editor: Roger Wheate, Department of Geography, University of Calgary

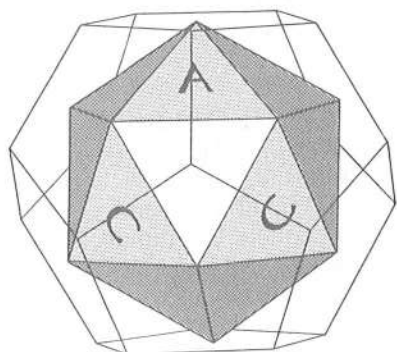
Volume 13, Number 3, Autumn 1987

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TIME TO RENEW!!

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NEW CCA OFFICE ADDRESS

All members please note that effective September 1, 1987, the mailing address for the CCA is as follows:

Canadian Cartographic Association,
c/o Department of Geography,
Memorial University of Newfoundland,
St. John's, Newfoundland, A1B 3X9.

Tel: 709-737-8988.

Bitnet: CHWood@MUN.BITNET

The CCA sincerely thanks the University of Ottawa, Department of Geography for acting as the central office of the CCA from 1981 to 1987.

CCA EXECUTIVE

President: Chris Gold
Vice-President: Norman Drummond
Past-President: Malcolm Brown
Treasurer: Louis Cardinal
Secretary: Roger Wheate
Manager: Cliff Wood
Cartographica: Bernard Gutsell

INTEREST GROUP CHAIRPERSONS

Automation: Ron Eastman
Education: Peter Keller
History of Cartography: Gordon Shields
Map design: Claudette Leblanc
Map Use: Bob Packer
Technology: David Mark

CORPORATE MEMBERS

Alberta Energy and Natural Resources, Edmonton
GeoVision Inc., Ottawa
GIMMS, South Orange, N.J., and Edinburgh
Intergraph Systems Ltd., Calgary
J.M.Ellis Ltd., Metcalfe, Ont.
Maritime Resource Management Service, Amherst
Metropole Litho Inc., Anjou, Que.
Matric Mapping Ltd., Calgary
PAMAP Graphics Ltd., Victoria
SPAD Systems Ltd., Columbus, Ohio
Statistics Canada, Ottawa

The Canadian Cartographic Association gratefully acknowledges the financial support given by the Social Sciences and Humanities Research Council of Canada.

L'Association Canadienne de Cartographie remercie vivement le conseil de recherches en sciences humaines du Canada pour son apport financier.

CCA Newsletter Editor:

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Electronic (BITNET) address:
Wheate@UNCAMULT.BITNET

Any contributions, questions or comments, please send to the Editor at the above address. Letters, articles, reviews, queries of any kind will be guaranteed attention.

Next newsletter (Winter 1987):
approx. deadline January 31, 1988;
approx. deadline for 1988 #1: Mar 31, 1988.

This newsletter was produced using "Ready Set Go 4", and outputted to a laser printer. My apologies for some inconsistencies in the printing of the last newsletter, (summer 1987). If your copy had a page missing, please contact the editor for replacement copy.

LOST SHEEP

The following CCA members have paid their dues but are apparently attempting to conceal their location so as not to receive the benefits! If you know of their whereabouts, please contact the CCA office in St. John's.

Peter W. De Krom, St. Bruno, Que.
Gregoire Gagne, Calgary, Alta.
Michel Guenet, St-Redempteur, Que.
Michele Hamel, Montreal, Que.
Stephen Parker, Surrey, B.C.
Denis Piche, Longueuil, Que.
Spencer Sutton, Lindsay, Ont.
Gary Wagner, Calgary, Alta.
David Wigle, Calgary, Alta.

WELCOME NEW MEMBERS:

William Blake, Wasilla, Alaska
James Britton, Lindsay, Ontario
Lauren Crooks, Edmonton, Alberta
Beverley Dixon-Lennett, Dartmouth, N.S.
Doug Gerull, Calgary, Alberta
Dru Murdock, Nepean, Ontario
Kenneth, Annapolis, Maryland
Kelly Steinhauer, St. John's, Newfoundland
Bruce Wood, Nepean, Ontario



FROM THE EDITOR'S DESK:

GIVE ME YOUR MAPS/IMAGES!

The toughest part of editing the newsletter is collecting sufficient and appropriate material to excite the membership and thus justify the issue's publication. Although we try not to 'judge a book by its cover', there is little question that a first impression helps in no small way to seduce readers into further perusal. Hence, I invite all members to send in any maps or cartographic images as potential cover illustrations or backgrounds.

Just as the newsletter compilation is an ongoing process, so as soon as one annual meeting is over, the next is being planned. The 1988 CCA annual meeting is being held in Toronto in May, at the University of York. The first announcement appears in this issue. Each year at the meeting, the President's Prize is awarded in several categories for cartographic achievement by students and junior cartographers. We do not always receive as many entries as we would like and some categories are not awarded. So take some time to consider entering this year or urging your students/co-workers to participate. In particular, take note of the journalistic cartography category, established by Paul Pugliese and Time Magazine, which this year carries a cash prize of US\$200.

Also at the annual meeting, new executive members are elected. The nominating committee has prepared a slate of nominees, but there is still room for further nominations. The positions up for election are: vice-president, secretary, and the following interest group chairs: automation, history of cartography and map use/design.



FROM THE PRESIDENT:

As the new President of the Canadian Cartographic Association I have been asked to write a short note on possible future directions for the Association, but first I would like to provide a brief review of my previous (vice-presidential!) activities. As you may know, my own personal interests are in the automation field - Automated Cartography, and Geographic Information Systems, both of which are very active subjects right now. In April I gave a CCA - sponsored guest lecture at the University of New Brunswick in Fredericton, and in June I participated in another CCA - sponsored event, a one-week International Workshop on GIS held at the College of Geographic Sciences in Lawrencetown, Nova Scotia. The bulk of the work for this event was performed by Bob Maher, of the College, and Michael Goodchild, of the University of Western Ontario, together with all the students and staff associated with the GIS program at the College. Apart from a lobster cook-out on the Bay of Fundy, and a canoe trip down the Annapolis River, the 31 registrants had a week of non-stop evaluation and demonstrations of several major GIS systems, and hopefully left with a much clearer feel for the current state and direction of this rapidly developing field.

I was asked some time ago to help with the CCA'S contribution to the Canadian National Report on Cartography, to be submitted to the International Cartographic Association in Mexico this fall. Our task was to review the state of cartography in educational organizations. Consequently I sent out a questionnaire to all Canadian universities and colleges asking their opinions on current cartographic activities, needs and trends. Some of you will have responded to this, and others will have read the request for information in the last Newsletter. To

all of you who responded - many thanks. We had an excellent response rate, and a long (probably over long) report was prepared and submitted, almost on schedule, to the editors. Many of you were quoted directly, and the results were surprisingly consistent: automation is here to stay; the market place demands it of our graduates; employment opportunities in the field are expanding with automation (with new users such as municipal planning departments); and there is a drastic shortage of resources to teach these new skills. I am not yet sure how much of the report will be used, but if you would like a copy of the whole (gulp) thing, please write to me.

This brings me to my main point - where do I see the CCA going in the next year or so? Clearly the movement to automation is going to firstly change many things about the way we operate and secondly provide many new and exciting opportunities. These opportunities will not only apply to computer freaks like myself, but also to more traditional cartographic disciplines. I would like to expand on this point.

When I was going to school in England, I was taught Latin for the (somewhat unconvincing) reason that it taught you to think clearly and precisely. I have felt for many years that computer programming was the 20th Century's version of Latin. Even as you cursed it, the constraints of instructing a stupid (if fast) machine forced an analysis of the manual procedures you were attempting to replace. Many early attempts were crude, and many still are. The pressure of automation, and the development of expert systems and similar expensive toys will nevertheless force many of us to define even more rigorously, precisely what we think we are doing - which for me is part of the fun.

The trend is there, and will happen whether we like it or not. The CCA therefore *must* be ready to contribute to this, as must cartography in general or else others will happily do so.

The question is - how?

I myself feel that the answer to this question is not as intractable as it may first appear. Most of the automation activities currently in progress are large-scale, commercial or government ventures. This causes those of us in the educational world several initial difficulties. For a few of us large systems are available and we can teach their use in real-world applications. For most educators there is no hope of finding funds to cover software costs, let alone the hardware to run it on. We are limited to a few small packages and simple demonstrations. Even here we are

merely users, because source code and algorithms are usually unavailable for commercial reasons.

Whether for large-scale systems or small, therefore, there is a massive shortage of available programs, available methods and even available data sets for demonstration purposes. Yet we need to teach both applications and methods. Clearly, both within Canada and elsewhere there is a significant shortage of educational materials. I believe that the Canadian Cartographic Association can be of significant service to both its members and the wider community by disseminating educational materials, whether in the computer or non-computer fields. While there are obvious issues to resolve, I would like *all* members therefore to perform the following brief meditation:

- a) do I have any particular needs or requirements in order to present my course material?
- b) do I have any resources that might meet someone else's requirements for teaching purposes?
- c) could they be easily made available?

Resources should probably be considered on a small scale e.g. a dozen slides covering some aspect of historical maps, plus explanatory notes; the source code, documentation and algorithm description of a polygon shading routine; or a test data set, plus description for a digital elevation model.

If steps a), b), or c) above produce anything other than a blank stare - *please* drop me a note - by mail (if functioning) or BITNET (to CGold @ MUN). I will attempt to collate any responses, and generate a follow-up procedure. My experience with the Canadian National Report suggests that there is a significant need for educational resource materials, especially in the new technologies. If we, as CCA members or cartographers, are to meet the challenges in this new direction it will only be by collaboration.

So collaborate - let me know what you can contribute - whether needs or resources.

—Chris Gold

THOUGHT FOR THE DAY:

In today's dynamic world of cartography, there are three types of cartographers: those who make things happen, those who let things happen, and those who ask "what happened?"

CCA / OICC JOINT ANNUAL CONFERENCE

York University, Toronto

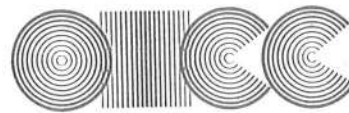
May 25-27, 1988

First announcement and call for papers

The executive are pleased to announce that we have arranged to join with the OICC in holding a joint meeting in Toronto, May 25-27, 1988. York University have agreed to host the meeting and provide dormitory housing, meeting rooms and display space.

Potential authors are encouraged to submit abstracts of papers for presentation at the joint annual meetings of the Canadian Cartographic Association and the Ontario Institute of Chartered Cartographers, to be held at York University in May, 1988. papers may be on any topic while sessions will include the following:

Map use and design
Geographic information Systems
Map semiology
Map technology
History of Cartography
Environmental mapping
Urban mapping
Commercial vendor sessions
Student paper sessions (and competition)
Cartotechniques workshops



THE ONTARIO INSTITUTE OF CHARTERED CARTOGRAPHERS

For further information and to send paper abstracts, write to:
Dr. Gerald Walker
Department of Geography, York University,
North York, Ontario, M3S 1P3
Deadline for abstracts: Feb 25, 1988.

Organising committee:
Gerald Walker (York University)
Shelley Laskin (CCA)
Claire Gosson (OICC)

THE CCA PRESIDENT'S PRIZE, 1988

The President's prize is awarded at the annual meeting in up to five categories, open to students and junior cartographers. In addition to the prestige of winning, the prize money in each category is generally \$50; however, the "Journalistic Cartography" category, which has been generously donated by Time Magazine following a similar action personally last year by Paul Pugliese, Chief Cartographer for Time, carries with it a prize of US\$200. This category is designed not just for those actively involved in producing media published maps, but primarily for students who create a 'media-type' map relating, for example, to current affairs.

Educators and supervisors should do all they can to encourage their students and juniors to take advantage of this opportunity by designing projects suitable for entry, and submitting these to the CCA Office by April 20, 1988.

NORMAN L. NICHOLSON SCHOLARSHIP

This scholarship in Cartography for Canadian students is awarded annually at the annual meeting of the CCA. Pictured below is the first (1987) recipient of the scholarship, Derek Peddle of the Memorial University of Newfoundland receiving the award from Cliff Wood, CCA office manager.





1987-88

CANADIAN CARTOGRAPHIC ASSOCIATION

PRESIDENT'S PRIZE

COMPETITION

Submissions are invited for the 1987-88 President's Prize competition. The competition is open to students of post-secondary institutions, and to persons occupying junior positions in places of employment where maps are made or used. The competition this year will be for awards in four general categories, each with a small monetary component, (i.e. in the order of \$50.00 each), and certificates which will be presented at the 1988 Toronto Annual meeting. In the Monochromatic and Colour Map categories, awards will be given both to the best submission from a technical institution and to the best submission from a degree-granting university.

The categories of award are:

1. Monochromatic Map (Formal or journalistic style): A printed map in black and white suitable as an accompaniment with a submission to a learned academic journal, with a brief written description (i.e. less than 500 words) stating the purpose of the map. Emphasis in this category will be placed on innovation with respect to subject selection and interpretation, symbolization and graphic design.
2. Printed Map in Colour (or taken to the proof stage): submitted with a brief written description (i.e. less than 500 words) stating the design objectives of the map. Emphasis in this category will be placed on excellence of execution and fulfillment of stated design objectives.
3. Formal Written Paper: on any theoretical, administrative or practical topic related to cartography. The paper of approximately 2000 words should be submitted in the style and format required by CARTOGRAPHICA.
4. Computer Algorithm (specific to a cartographic problem): submitted in code form in any language along a brief description and evidence of operation.
5. Best 'journalistic' map design. (prize is US\$200.00, donated by Time Magazine). Map should be accompanied by a brief written description, stating the purpose of the map.

Submissions should reach the CCA office by 20 April 1988. Membership in the CCA is not required. CCA, c/o Department of Geography, Memorial University of Newfoundland, St. John's, Newfoundland, A1B 3X9.

NORMAN L. NICHOLSON SCHOLARSHIP IN CARTOGRAPHY

A Geographer's Geographer

Norman L. Nicholson first came to Canada as a Meteorological Officer with the Royal Air Force, seconded to the Canadian Met. Service. He served at R.A.F. Stations Mount Hope and Port Albert, during the Commonwealth Air Training Plan. He returned to the U.K. and saw service in Norway as a meteorologist. While in the UK he completed his undergraduate degree at the University of London. He returned to Canada after the war and registered as a graduate student in Geography at the University of Western Ontario. After completion of the M.A. he continued here as a lecturer in Geography. His thesis involved field research in one of the early River Conservation Authorities; the Ausable. In 1949 he was offered and accepted the post as Director of the Geographical Bureau; later the Geographical Branch of the Federal Department of Mines and Technical Surveys. While there he took a Ph.D. in Geography at the University of Ottawa. The Geographical Branch was the envy of geographers throughout the world since it was a government department that hired Geographers and Geography students in the summers to do meaningful geographic research, published the results in the *Geographical Bulletin*, edited by N.L. Nicholson and also were called Geographers. Very few Canadian Geographers of that time had not some experience with Nicholson's Branch. When the Canadian Association of Geographers was established in 1950 he was a founder member and became the first editor of *The Canadian Geographer* from 1951 to 1960. In fact the journal was for many years supported by the Geographical Branch and owes its present prestigious reputation to his work.

One of his major contributions was the production of a new Atlas of Canada in 1957 to replace the earlier edition of 1906. Nicholson and the Branch received recog-



nition of the excellence of the work by a major internal government department award. But the Geographical Branch also supported Geomorphological Research in the Arctic, particularly Baffin Island, Railway Rationalisation in the Prairies, Ice conditions in Baffin Bay, and Coastlines in the Maritimes. If it was Geographical and Canadian, it was supported. He was a consummate civil servant and knew how to deal with bureaucracy so as to get things done.

In the 1960s the universities suddenly realised that the student population was going to grow — but who was going to teach them? The then Ontario Minister of Education was persuaded to set aside a certain amount of money to attract people back to the Universities from business and government. Nicholson was persuaded to return to Western with a newly established rank of Senior Professor. The Royal Canadian Geographical Society was in trouble. Nicholson joined the advisory and editorial Board. Norman was never happier than when he was in the classroom and teaching but the university needed experienced administrators and the post of Principal of University College tempted him. While there he was well regarded as someone who would support with money disciplines which normally had little access to research funds. He became Assistant Dean of Graduate Studies and then moved to Althouse College. He perceived a need for more information so he took a second doctorate at the Ontario Institute of Secondary Education. Finally the Geography Department reclaimed him as Chairman for three years during which he still managed to write with L.M. Sebert the definitive work on the Maps of Canada.

His service to the profession of Geography is unparalleled.

The Canadian Cartographic Association is proud to offer the Norman L. Nicholson Memorial Scholarship in Cartography in honour of our late colleague. This scholarship, initially valued at \$500, is awarded annually by the Canadian Cartographic Association. It is intended to recognize and encourage exceptional student achievement and ability in any aspect of cartography.

To qualify, an applicant must be:

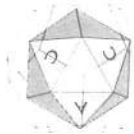
1. a Canadian citizen or landed immigrant
2. a student who proposes to continue full-time studies in cartography in one of the following situations:
 - a) entering the final year of community college or C.E.G.E.P. program;
 - b) entering the final year of an undergraduate honours program;
 - c) entering the first year of a graduate program.

To apply, the applicant must submit the following:

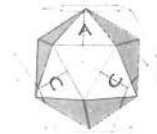
1. a completed application form;
2. an official transcript of all college/university courses completed and grades received;
3. letters of recommendation from two faculty members who are familiar with the work and abilities of the applicant. Letters must be sent directly to the Awards Committee;
4. a one-page, typed statement outlining the applicant's goals for continuing education in cartography.

All materials are to be received by the Awards Committee no later than March 15.

Persons wishing to apply may request an application form by calling (709) 737-8988 or writing:



Awards Committee — Canadian Cartographic Association
c/o Department of Geography
Memorial University of Newfoundland
St. John's, Newfoundland A1B 3X9



INTEREST GROUP NEWS AUTOMATION

WANTED ... Contributions to the CCA public domain on-disk library for computer-assisted cartography. Have you:

- created a program you might wish to share with your colleagues?
- implemented a known algorithm in a well-documented fashion?
- created a new algorithm you might wish to distribute?
- created a set of exercises for teaching?
- developed a teaching data set?
- worked on a project that might provide the basis for a teaching data set?

If so, consider contributing them to the new **CCA on-disk library**. The final format for this library is open for discussion, and suggestions would be welcome. At present, I envision a centralized holding of disks that would be made available to CCA members at a nominal fee. Any collection of digital files that you feel might be of interest to your colleagues is of interest. Data sets are particularly encouraged when they provide illustrations of the use of automated cartography/GIS technology. Algorithms and complete programs are also of major interest -- particularly when they are well documented. Also, they do not have to be new or innovative. A library of tried and true procedures is very much of value.

Send contributions on either 5.25" DSDD (IBM compatible), 3.5" 720K (Toshiba/DG-One / IBM PS-2 compatible), 5.25" SSQD (DEC Rainbow) or 3.5" Macintosh to **Ron Eastman**, at the address below. All contributors will receive a free library disk in return.

Suggestions for the **88 AGM at York** would be very much welcome. I am currently exploring the idea of a series of vendor "spotlight" sessions where we could hear from system designers (rather than salesmen) about selected automated mapping/GIS products. In addition, I hope to organize a least one GIS workshop. If you have any ideas, or would care to help in the organization, please contact me as follows:

1. Telephone : (617) 793-7321
2. BITNET : REASTMAN@CLARKU
3. Mail : Ron Eastman
Graduate School of Geography
Clark University, 950 Main Street,
Worcester, MA 01610, USA

If you are on the BITNET system, please send me your address. In this way I can communicate with you on a more regular basis.

AIG BITS and PIECES

Can anyone suggest an efficient "viewshed" algorithm for raster systems?

Does anyone have any suggestions or recommendations concerning color printers (dot matrix/ink jet) under \$1000?

Wanted .. lonely DEC Rainbow users to exchange mapping software. The Rainbow was released with graphic capabilities far ahead of its time. Unfortunately, it never really caught on. If you are working with Rainbows, please contact me. I have a variety of software that I am contributing to the CCA on-disk library. Included in this is a choropleth mapping program that produces high resolution output on an LA50 and a GKS binding that for Turbo Pascal that adheres to the VAX Pascal binding conventions.

The CCA on-disk library now contains :

1. CAMS (Clark Automated Mapping System) Utility Disk 1 (IBM)
 - a) Chain Generalization : Generalize a chain file by any of Point; Selection (thinning), Low-Pass Filtering, or Tolerance Band Techniques.
 - b) Polygon Cycling : Performs node snap and cycling on a chain file to yield a clean polygon file.
2. CAMS (Clark Automated Mapping System) Utility Disk 1 (DEC Rainbow) - same as Disk 1, but for the DEC Rainbow.
3. GEODASYS Demo Disk (DEC Rainbow)
 - the GEODASYS thematic mapping program for the DEC Rainbow. The demo disk will allow choropleth mapping to any of the DEC GSX supported devices (eg. monochrome and color monitors, LA50, LA100, etc.). Requires the DEC Rainbow graphics option, and the MBX BASIC interpreter.
4. Turbo GKS (DEC Rainbow -- IBM to follow soon)
 - an implementation of the GKS graphics programming standard for the DEC Rainbow. Requires Turbo PASCAL 3 for CP/M-86.
5. The World Digitized -- Disk 1 (IBM)
 - Coastlines and political boundaries. A public domain sphagetti file.
6. The World Digitized -- Disk 2 (IBM)
 - more sphagetti
7. The World Digitized -- Disk 3 (IBM)
 - yet more sphagetti

8. World GKS (IBM format or DEC RX50 for the MicroVAX II)

- A VAX GKS driver for the WORLD projections package. Drives all DEC devices including VAXstations, Postscript devices, HP plotters, LAXX printers, VT240/340/ReGIS terminals, Tektronix 4010/4014 terminals, etc. Distributed as linkable FORTRAN code.

Our distribution procedures and costs have not yet been worked out, so these are not yet available for distribution. Specific details will be distributed with the next newsletter. However, you can get an idea from this list of the kinds of things that might be included.

MS-DOS programmers -- if you haven't seen it yet, the new Turbo PASCAL 4.0 has added significant enhancements to its graphics capabilities -- it now provides a GKS-like interface and device drivers for the CGA, MCGA, EGA, VGA, Hercules, AT&T 6300, and IBM 3270 PC boards.

TECHNOLOGY

Computer Languages for Instruction, Research, and Applications in GIS and Computer Cartography.

David Mark (Technology group chair) is attempting to collect opinions of the choice of computer languages (and, on the role of programming) in the curriculum. Should we require programming as part of our curriculum? Should we teach it, or require our students to take computer science? If we require programming, should we specify a language, or let students choose the one with which they are most comfortable? Should the language used in an advanced course with prerequisites be different from the one used in a first course in programming? Among the languages commonly in use in cartography and GIS are FORTRAN, Pascal, C, and Basic, and other languages are employed as well.

One possible outcome from this would be a short article in this Newsletter. Other possibilities are a panel discussion or a paper session at the CCA in Toronto. Please send opinions on the topic and on the best way to disseminate results to:

David Mark,
via Bitnet (GEODMM@UBVMS.BITNET)
or by mail (Department of Geography, SUNY at Buffalo, Buffalo, NY 14260 USA).

EDUCATION

The following issues are those I would like to address and act upon during my term as chairperson for the Education Interest Group:

1. I would like to make sure that the **Student Paper Session** is continued at the annual meetings of the CCA. I intend to send an announcement and call for entries to the newsletter in the near future.
2. I would like to organise a session at the **1988 annual meeting** in Toronto (or wherever) in which the issue of "what is the ideal GIS curriculum" and "how to persuade your Chairman and Dean to establish a GIS automated cartography lab" is addressed. This could be done in conjunction with the new GIS specialty group.
3. It has come to my attention on numerous occasions that we lack publications discussing "the state of the art" and "who is who" in cartography in industry and government in Canada. I would like to look into the possibility of organising a publication through the CCA which addresses this lack of readily accessible information.

—C. Peter Keller

HISTORY OF CARTOGRAPHY

As interim chairperson of the History of Cartography Interest Group, I am hoping to organize a session at our forthcoming annual meeting at York University. I foresee the possibility of a paper session or perhaps a workshop on some aspect of early Canadian cartography.

I have also compiled a list of individuals, primarily Canadian, who are interested in the history of cartography.

The sources of information for this listing include the International Directory of the History of Cartography, CCA membership files and records of publication in various journals etc. It is my expectation that this list will serve as a resource for future chairpersons of the history group.

—Gordon Shields

MAP DESIGN

The following is a report on the present status of the Canadian Cartographic Association Survey on Official Tourism/Highway Map Design:

1. Two hundred survey packages were assembled, each consisting of an overall questionnaire, three individual questionnaires, twelve tourism/highway maps and self-addressed postage paid envelope;
2. The survey packages were distributed mid-October to:
 - a. the general public
 - b. persons with a cartographic background
 - c. tourism or transportation department officials
3. To date, 35 (18%) survey packages have been returned.

Following the survey closure date of November 30, 1987, the information collected from the returned questionnaires will be analyzed and evaluated;

4. The survey results will be presented in the form of a technical paper at the 1988 annual CCA conference. The results will also be made available to the participating official tourism/highway map publishers throughout Canada.

- Claudette Leblanc

MAP USE

Non Cartographic journals have been approached with regard to the interest group acting as reviewers for their map content, with mixed success. The findings will be reported at the annual meeting in Toronto at York University in May, 1988.

- Bob Packer

SUC : DUBLIN

The Society of University Cartographers met in Dublin, Republic of Ireland, October 7-10, 1987 for their 3rd annual summer school. A residential conference atmosphere was emphasised with accomodation and most papers at Carysfort College of Education. Almost 80 members, mainly technical staff, attended and enjoyed a varied and informative programme, complete with equipment, map and book exhibits, developed by the local organisers, Ed Buckmaster (University College, Dublin) and Paul Ferguson (Trinity College). Most of the lectures were integrated with tours or demonstrations. Such combinations included information on the Ordnance Survey Organisation of both the Republic and Northern Ireland, the Trinity College Map Library, the Remote Sensing Facility at University College, mainframe computer graphics 'copy art', and the development of Dublin itself. Other lectures were on the Irish Historic towns Atlas, an introduction to Irish Cartography, mapping Connemara, problems of population mapping and Dr. Chris Board's "Neglected aspects of modern map design". Finally, a seminar on "University Cartographers are a dying breed" pointed at the sad state of British Universities.

As can be seen, the programme was not overloaded with lectures, in fact an almost equal amount of time may have been spent trying to do justice to abundant meals and snacks. The summer school provides an excellent opportunity for members to become familiar with problems, developments and colleagues in all parts of the British Isles, as well as to visit universities and their local regions. This was a thoroughly friendly and informative conference in which Ed Buckmaster and Paul Ferguson not only displayed excellent organisational skills, but as well developed anticipatory and sensitive understanding of all their visitors' needs. Congratulations.

Michael R.C.Coulson (Calgary)

ICA MEETING, MORELIA, MEXICO: FRASER TAYLOR ELECTED AS PRESIDENT

. At the recently concluded 8th General Assembly-13th International Conference of the International Cartographic Association held in Morelia, Mexico, CCA Past-President Fraser Taylor of Carleton University was elected President of the ICA. His term of four years will include the 14th International Conference scheduled for Budapest, Hungary and the 9th General Assembly to be held in Bournemouth, England in 1991. Our heartiest congratulations and best wishes to Fraser during the next four years.

The Morelia Conference which took place from October 12-21, saw about 700 representatives from 35 member nations exchanging information in a series of plenary sessions including cartographic communication, history of cartography, education, cartography as a management and planning tool, technology in cartographic production, tactual mapping, and thematic and natural resources mapping. Although there were a few no-shows in the program, there were sufficient alternate presenters in attendance to allow the 'show to go on'. In fact, some of the best papers were given by the alternates.

Morelia, the capital city of the state of Michoacan, located approximately mid-way between Mexico City and Guadalajara, was a beautiful site for such a meeting. With a population of about half a million and a rich and diverse cultural history, delegates were never short of things to do and see. The weather co-operated perfectly with warm, sunny days and cool nights, and the Mexican hosts kept all attenders well entertained throughout the conference with a variety of festivities.

- Cliff Wood



Fraser Taylor being interviewed for Mexican television.

THIRD INTERNATIONAL SYMPOSIUM ON SPATIAL DATA HANDLING CALL FOR PAPERS AND SHORT COURSE PROPOSALS

The International Symposia on Spatial Data Handling represent a continuing opportunity for research workers in the disciplines concerned with geographic information systems and spatial data handling to meet for small group, in-depth discussions of leading edge research topics. The first two Symposia (Zurich - 1984 and Seattle - 1986) each attracted about two hundred of the leading research professionals in the GIS area. The Third Symposium will be held in Sydney, Australia during the third week of August of 1988. Co-sponsors of the Third Symposium include the International Cartographic Association and the International Soil Science Society.

The orientation of the Symposium is technical in nature. Sessions at the Seattle Symposium addressed such topics as "Quadtree Representations of Spatial Data", "Expert Systems for Spatial Data", and "Storage and Accuracy of Digital Elevation Models". While the professional papers solicited for the Symposium should generally reflect this strong technical orientation, papers stressing application topics with a pronounced technical orientation may also be submitted (e.g., a session is being organized on linkages between the GIS and archaeological modelling of space-time phenomena). Please consult the *Proceedings* of the first two symposium for examples.

Interested professionals are invited to submit abstracts for consideration by the Program Committee. Abstracts must be typewritten and must begin with a full, descriptive title and provide the names and full mailing addresses of all authors. A telephone number should also be provided for the senior author. The body of the abstract should provide adequate information (about 800 words) so that the paper may be properly evaluated. Short, uninformative abstracts will not be considered by the Program Committee. Abstracts should reach the Commission as soon as possible, and in case later than *November 10, 1987*. The Program Committee will announce their decisions early in 1988, and camera-ready copy for the *Proceedings* will be required by late Spring. The Commission anticipates that supplemental travel grants will be available for some of the persons presenting papers at the Symposium.

A series of half - or full-day short courses are normally held in conjunction with the Symposium. Income from these courses frequently provides a source of travel funds for the instructor. Individuals interested in presenting such a course should submit a detailed, written proposal

on the same time schedule as that required for abstracts of papers.

For purposes of future planning, the Fourth Symposium is scheduled for Zurich, Switzerland in July of 1990 and the fifth Symposium will be held in the United States during the Summer of 1992.

Please direct all abstracts and correspondence to: Professor Duane F. Marble, Department of Geography, The Ohio State University, Columbus, Ohio 43210. Telephone: 614 - 292-2250. Telex: 650-218-4975 MCI.

UNIVERSITY EDUCATION IN GEOGRAPHIC INFORMATION SYSTEMS April 30-May 2, 1988, Columbus, Ohio

The growth of interest in geographic information systems has been explosive over the last few years and this, in turn, is placing considerable stress on the few university training programs with a long term history in this area. On the other hand, departments wishing to start new programs are facing problems of what should be taught, how to teach GIS, how to integrate GIS topics with traditional curricula in geography and other disciplines, and how to structure and support the necessary laboratory facilities.

The Commission is organizing a special conference addressing these topics which will permit members of the academic community to meet and address the common problems which have developed. We envision a series of papers, discussions, demonstrations of teaching software and - hopefully - the emergence of a continuing organization which will permit those engaged in teaching GIS within the university environment to do so in a more efficient and organized fashion. The development of mechanisms for inexpensive interchange of software, databases, exercises, etc., will be addressed. Persons wishing to participate or to receive further information should write or call:

Professor Duane Marble,
Department of Geography, The Ohio State University,
Ohio 43210 - telephone 614-292-2250
Bitnet: TS4628@OHSTVMA

My apologies as editor for the tardiness of this issue, preventing it reaching most members before Christmas. I hope to 'get back on track' in the next two issues.

GIS

Primera Conferencia Latinoamericana Sobre Informatica en Geograficos (First Latin American Conference on Computers in Geography), San Jose, Costa Rica, 5-9 October 1987.

This conference was held under the auspices of the International Geographical Union's Commission on Geographical Data Sensing and Processing. The meeting was highly interdisciplinary, and the program included papers on geographic information systems, cartography, remote sensing, archaeology, climatology, energy planning, ecology, urban planning, and conservation. There were about 40 papers in all, and the authors came from 11 Latin American countries and 8 others. Participants from Canada included Ray and Grace Boyle from Saskatchewan and Gilles Lemieux from Chicoutimi-- certainly no strangers to CCA members!

The main conference was preceded by a 2-week workshop on GIS, conducted by Duane Marble (Ohio State), Armando Guevara (E.S.R.I.), Merrill Lyew (Costa Rica) and Juan Cebrian (Spain). The workshop attracted many young scientists and engineers, people actually involved in practical GIS applications in Latin America. Their enthusiasm and camaraderie at the end of the workshop were obvious, and the impact of the workshop on GIS use in Latin America may be felt long after the paper sessions are forgotten.

It was unfortunate that a fairly high proportion of the authors did not attend the meeting, and so there were many gaps in the program. Also, a lack of translation facilities detracted from communication at times. The program gaps did, however, leave time for much informal discussion, and the meeting may turn out to be a landmark in GIS and other geographical computing in Latin America.

The conference proceedings, produced from camera-ready copy supplied by the authors, contain 841 pages, and include the full text of 25 papers (14 in English, 11 in Spanish), and summaries of 10 others. Copies may be ordered from:

Direccion de Distribution de Materials
Universidad Estatal a Distancia
Apartado 474-2050
San Pedro de Montes de Oca
San Jose, Costa Rica.

-David M. Mark, Department of Geography,
State University of New York at Buffalo

International Geographic Information Systems (IGIS) Symposium: The Research Agenda, November 15-18, 1987, Hyatt Regency, Crystal City, Virginia, USA.

This first international symposium on Geographic Information Systems (GIS) was convened by the Association of American Geographers in cooperation with the Federal government of the United States, academia and the private sector. The objective of the conference was to address a number of sub-themes listed below:

GIS research Needs: The Federal Agencies View
GIS Research Agenda: The Scientific Community Perspective
Trends in Hardware and Software for GIS
Spatial Analysis and Artificial Intelligence
GIS Management and Implementation

At US \$225 registration (\$185 early reg.) this was not one of the cheaper of the many GIS conferences organised recently. However, a promising program attracted high attendance. A plenary session for each sub-theme noted above, including presentations by highly placed representatives from the different interest groups proved the highlight of the conference. Concurrent sessions, organised to fill the remaining time, yielded relatively little new. All in all, one could not help but get the impression that the real action during IGIS was active lobbying for where the proposed new GIS centre would be housed, and who would move where to assure the winning bid. Let's hope that the location will be decided soon. It is time that the cream of GIS researchers return to their research labs and classrooms, brewing up some new and exciting breakthroughs in GIS to be presented at future conferences. The conference proceedings had not been published in time for the conference, but ought to be available sometime soon.

- Peter Keller, University of Victoria

The Commission on Geographical Data sensing and Processing is pleased to announce that the Headquarters of the Commission will be located in the Geographic Information Systems Laboratory of the Department of geography of the Ohio State University. All communications regarding Commission business should be directed to:

Dr. Duane F. Marble, Chairman,
IGU Commission on Geographical Data Processing,
Department of Geography, Ohio State University,
Columbus, Ohio, 43210, USA.
Tel: 614-292-2250; Telex: 650-218-4975 MCI

Proceedings, International Workshop on GIS, Beijing '87

The IGU Commission on Geographical Data Sensing and Processing, in conjunction with the Laboratory of Resource and Environment Information Systems of the Chinese Academy of Sciences, recently sponsored the first workshop on GIS in the people's Republic of China. The proceedings of the workshop contain over 500 pages of technical and descriptive papers which provide the first unified examination of GIS activities in the PRC.

The Proceedings are available in English and copies may be obtained at a cost of US\$45.00 (including air mail postage) either by transferring funds to Bank of China account no. 71401725 (Chinese Academy of Sciences) and forwarding a notice to this effect, or by mailing a cheque, payable in US dollars through the Bank of China, to:

Mr. Yuan Xiansheng, Laboratory of Resource and Environment Information Systems, Institute of Geography, Chinese Academy of Sciences, Building 917, Datun Road, Anwai, Beijing, People's Republic of China.

CSG PROGRAM AT AAG, PHOENIX

The following is planned by the Cartographic Specialty Group (CSG) at the Annual Meeting of the Association of American Geographers at Phoenix, Arizona, April 7-10, 1988:

Three workshops will take place:

1. organised by Tom Hodler and Howard Schretter of the University of Georgia, will address issues related to the planning, production and marketing of state atlases;
2. "Elements of map critique" by Andrew Wahll of the National Geographic Society;
3. "Microcomputers in Cartographic Education", by Frank Gosette of Cal State, Long Beach.

Paper sessions:

1. CSG's first annual Student Honours Competition attracted enough entries to fill two paper sessions.
2. A special session on cognitive and perceptual research in cartography has been organised by Babs Buttenfield;
3. Two sessions on "Innovations in Cartographic Display for GIS", organised by Matt McGranahan.
4. Two paper sessions on Computer Mapping.

Poster sessions, displays, other sessions, etc..

(from the CSG newsletter, Vol. 8 No. 2, December 1987)

TECHNICAL NOTES AND QUERIES

Several members in the past have commented on problems in the process of cartographic production at the color proofing stage, where colors may either not hold or conversely have a background stain. The following tips have been contributed by J.M.Ellis, a corporate member of the CCA, and supplier of cartographic materials:

Colours not holding

1. Check that colour is not outdated as colours loose strength with age.
2. Be sure you are using the matte side of the base.
3. Colour must be buffed dry leaving only the thin film which is readily held by the surface matte.
4. Check for proper exposure time using test strip with Stouffer Sensitivity Guide. Underexposing can result in failure to hold image.
5. Note that low humidity and temperature require increased exposure items.
6. Colour will tend to wash off if you have not *stirred* well before using.
7. Bottle should always be recapped to retain strength.
8. Base sheet and colour should be at room temperature (70°).

Background stain

1. Humidity over 60°.
2. Exposing coated sheet to strong fluorescent light or daylight before exposure in frame can cause background tinge. (Yellow light is completely safe - subdued roomlight for short period)
3. Sheets may not have been given ammoniated water wash as first step in developing after exposure.
4. Possible burn through on inadequately opaque film or masking material.
5. Delay in processing after coating sheet (particularly under hot and humid conditions) or sheet left near heat source.
6. K/P Brightener can be used to eliminate a light background tinge that does not respond to the regular ammonia wash. Follow instructions on bottle.
7. Outdated colours have an increased tendency to tinge the background.

Note: New exposure times and instructions are now available. For further information, write to: J.M. Ellis Ltd., P.O.Box 370, Metcalfe, Ontario, K0A 2P0.
Tel:613-821-1759

AN OVERVIEW OF "BITNET"

By Brian Traynor,
Academic Computing Services,
University of Calgary.

Early in 1987, BITNET, a new off-campus communications service will be available to University of Calgary users. BITNET is essentially an academic communications network for educational institutes throughout North America and Europe. This article presents an historical overview of BITNET.

In 1981 a leased telephone line signified the beginning of a new type of computer communications between City University New York (CUNY) and Yale University. This line was intended to allow researchers, faculty, administration and students to exchange information and ideas at a cost significantly lower than long distance telephone calls. The project originated at these universities because of the distributed computer networks they already had in place. CUNY is made up of 19 colleges throughout New York State while Yale also had an established local area network.

After the CUNY-Yale communications became established a number of nearby academic institutions were approached to develop an academic communications network. A network employing an IBM protocol was decided upon although there were more DEC computers than IBM computers locally, the IBM mainframe computers constituted more users. The name given to this cooperative network was BITNET (Because It's Time). BITNET differs from other communications networks as it charges no user fees and allows virtually unrestricted access.

BITNET provides the following services:

- electronic mail and file transfer;
- remote job entry;
- interactive message facility;
- limited remote logon;

There are three main constituents of the network:(table 1)
BITNET in the United States and Mexico,
NETNORTH in Canada, and
EARN (Europe Academic Research Network) in Europe;

Table 1: BITNET hosts as of May 1, 1986 (from Quarterman and Hoskins, 1986)

	Country	Hosts
BITNET	U.S.A.	844
	Mexico	1
NETNORTH	Canada	91
Asianet	Japan	7
EARN	Austria	6
	Belgium	13
	Israel	38
	Switzerland	22
	Germany	130
	Denmark	13
	Italy	31
	Spain	8
	France	39
	Netherlands	39
	Finland	7
	Greece	2
	Ireland	4
Norway	1	
Portugal	1	
Sweden	8	
	U.K. (JANET)	1
Total No. of hosts		1306

To join BITNET an institution must pay for its own communications link and provide facilities for at least one new member to connect to their computer (node). The BITNET communications protocol uses the IBM Remote Spooling Communications Subsystem (RSCS) software to "store-and-forward" any files, messages, or mail commands until they reach their final destination. The cost for an institution to gain access to the network is minimal. Any computer with an RSCS emulator can connect to BITNET; one-time equipment costs are around \$5000. The leased telephone lines to connect to the network, are dependent on distance, with a \$300 to \$1000 cost range per month.

BITNET sites are called nodes; information is transferred from one node to another until it reaches its final destination. Most institutions have incorporated BITNET access into their local mail systems allowing for easy user interface.

The Organisational structure of BITNET

Until recently BITNET had no centralized support or development centers. Initially, all development was carried out by individuals at various institutions. Over time the communications programs were made more user friendly and CUNY developed a file repository and user maintained directory called BITSERV. BITSERV allowed users to search for and retrieve files as well as names and electronic mail addresses of those who registered themselves in the directory. Since BITNET grew rapidly the need for specific management and central support structure was recognized.

Turnaround time

The time required to deliver mail on BITNET depends on two factors:

- a. how often sites (BITNET nodes) exchange mail. Since most BITNET sites exchange mail on a regular basis, BITNET mail is usually transmitted quickly. However, since BITNET mail is transferred in a store-and-forward mode, if one node is shut down because of emergency or routine procedures, mail will be significantly delayed.
- b. the number of intermediate sites that must process the mail before it reaches its destination. CUNY (US) and Guelph (Canada) act as national centres through which all international mail flows. In Canada, regional centres are at Edmonton (U. of Alberta), Lakehead, McGill, Ryerson College, Waterloo, York, and the University of New Brunswick. Hence mail to Calgary (for example) from an American node other than CUNY would go through one node more than the same mail to Edmonton, and two nodes more than to Guelph.

BITNET and Its Future

BITNET appears to have reached a critical mass to the effect that it has become the established communications network for the academic communities in North America. Virtually all major research institutes are now members. International links have also been developed and cooperation between networks provides coordinated information exchange with the sharing of technical developments among networks. But for the most part, BITNET allows academics an alternative communication service to avoid time delays, slow postal service and high telephone that currently characterize interuniversity communication.

References:

- Oberst, D.J. and S.B. Smith (1986) BITNET: Past, Present and Future. EDUCOM Bulletin, Vol 21, No. 2, pp 10-19.
- Quaterman, J.S. and J.C. Hoskins (1986) Notable Computer Networks. Communications of the ACM, Vol 29, No. 10, pp 932-971.

ELECTRONIC MAIL ADDRESSES

We currently have the following electronic mail addresses for cartographers; if your name is not on this list, and you have an address, please forward it to the newsletter editor/secretary (Roger Wheate).

Vince Andrews:	ANDREWS@GE.BBK.AC.UK
Marc Armstrong:	BLAMMGPD@UIAMVS
Alan Baker:	ABAKER@UTORONTO
Mike Blakemore:	GGMO@UK.AC.DUR.MTS
Kurt Brassel:	K505820@CZHRZU1A
Malcolm Brown:	MABROWN@UOFMCC
Bill Carstenson:	CARSTENS@VTVM1
James Carter:	CARTERJR@UTKVVX1
Nick Chrisman:	CHRISMAN@WISCMACC
Keith Clarke:	KCCHC@CUNYVM
David Douglas:	DHDAD@UOTTAWA
Ron Eastman:	REASTMAN@CLARKU
Martin Feuchtwanger:	USERCJSW@SFU
Chris Gold:	CGold@MUN
Mike Goodchild:	A3751@UWOCC1.
Bernard Gutsell:	GUTSELL@YORKVM1
Peter Keller:	SEAMUS@UVVM
Nina Lam:	GANLAM@LSUVM
Brian Klinkenberg:	USERKLNK@UBCMTSG
Y.C.Lee:	SE@UNBMVS1
Mark MacLennan:	MMACLENN@WATDCS
Duane Marble:	TS4628@OHSTVMA
David Mark:	GEODMM@UBVMSA
Robert McMaster:	IIL2RBM@UCLAMVS
Hal Moellering:	TS4053@OHSTVMA.
Mark Monmonier:	MMONMONI@SUNRISE
Donna Peuquet:	PEUQUET@PSUVAX1
Tom Poiker:	USERTONI@SFU
Wilfred Reedijk:	9069135@UNBMVS1
Michel Rheault:	CCIB@UDESVM
David Rhind:	RHIND@GE.BBK.AC.UK
Vince Robinson:	VBRobinson@UNCAMULT
Bob Rugg:	RUGG@VUUMVS
Mike Shasko:	Dallas@UVVM
Gordon Shields:	SHIELDS@VAXR.UWO.CDN
Fraser Taylor:	FTaylor@CARLETON
Ren Vasiliev:	V073GXHM@UBVMS
Tom Waugh:	TCW@GEOVAX.ED.AC.UK
Roger Wheate:	Wheate@UNCAMULT
Cliff Wood:	CHWood@MUN
Leon Yacher:	YACHER@CTSTATEU

Note: More substantial lists for North America and the UK are held by David Mark and Michael Blakemore respectively.

CORPORATE MEMBERS NEWS

GeoVision Corporation has announced that it has been awarded the Cdn \$2.5m contract by Orange county and the City of Orlando, Florida for a comprehensive Geographic Information System (GIS). The large integrated system will provide sophisticated mapping and land records capabilities for a planned multi- participant project through which 13 city and county agencies will team up to share costs and resources to build a common digital database.

Orange County covers an area of 1,000 square miles, with a population of 580,000. The region has experienced annual population growth in excess of 5%. the number of land parcels increased by 10,097 in 1986 to 230,000, with 195 subdivisions recorded. With this pressure on land records management and regulation functions, map and record updates could no longer keep pace with the high volume of transactions.

While the initial benefits of the Geographic Information System will be automated graphic and database support for the departments responsible for land development, regulation, and infrastructure, the city and county's ultimate goal is to

GEOPROCESSING APPLICATION SPECIALISTS

If you enjoy working in a software support role then please read on.

Our **Client Services Group** provides and maintains the high standard of support demanded by our geoprocessing user community. We are looking for bright, innovative individuals who can assist in customer training, on-site installations, software testing, quality assurance and on-going customer support.

Your experience in providing assistance to solve specific user application problems will be an asset to our organization.

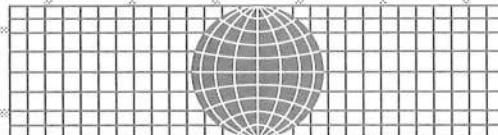
Qualifications

Working knowledge of Unix, VMS or HP-RTE combined with an understanding of geoprocessing applications that includes Municipal Cadastral compilation, digital mapping techniques and telephone record management is desirable.

Your availability to travel is a necessity.

Since 1974, GeoVision Corporation (formerly SHL/ Systemhouse Graphics) has built an enviable reputation for quality solutions in automated mapping and geographic-based information processing around the world. GeoVision clients include urban and regional governments, utilities, engineering firms, survey and mapping organizations, hydrographic, and natural resource agencies in six countries.

If working with an expanding, results-oriented company in the National Capital Region appeals to you, write to:



GEOVISION

1600 Carling Avenue, Suite 350, Ottawa, Canada K1Z 8R7

Attention: Ms. Sylvia Kinach-Howard, Office Administrator (No Agencies Please)

provide highly accurate and timely information to their private and corporate citizens.

The system will link information from several city and county departments and allow management to easily access and display accurate information in the ways that best suit their needs. "Much of the information was available under manual systems, but the new computerised system will provide flexible, rapid and effective management and retrieval of the large volumes of ever changing data that is processed by a county of our size", said Piertce Eichelberger, the GIS co-ordinator.

The system includes six GeoVision GIS and fifteen Advanced Mapping System licences operating on VAX host processors and VAXstation graphics workstations which are manufactured by Digital Equipment Corporation.

More information:

Anita Stewart
(613) 722-9518

PUBLICATIONS AVAILABLE

CCA PUBLICATIONS

1. **Basic Cartography, for students and technicians, Volume I**, a text dealing with chapters contributed by different authors on the history of cartography, the field of cartography, theory of cartographic expression and design, techniques of map drawing and lettering and map reproduction. Published by the ICA (1984) Price: \$15 (members), \$18 (non-members).

2. **Computer Assisted Cartography and Geographic Information Processing: Hope and Realism**; David H. Douglas and A. Raymond Boyle. (1982). This collection of papers by experts in these fields was compiled by two ex-presidents of the CCA from a conference at the University of Calgary in 1981. Price: \$7.95 (members), \$5.95 (students), \$9.95 (non-members).

3. **CCA lapel pins**. Not exactly a publication, but this handsome 3 colour pin is available for \$2.50.

Send orders to: Louis Cardinal (CCA), Maps Division, National Archives of Canada, 395 Wellington St., Ottawa, Ont. K1A 0N3 (tel: 613-996-7619)

From University of Toronto Press:

Cartographica Monograph 37, Volume 24, # 2, 1987
Studies in Cartography: A Festschrift in honor of
GEORGE F JENKS
Deluxe bound edition (leather): \$17.00

ICA Publications:

Available from Geo Books, Regency House, 34 Duke Street, Norwich, NR3 3AP, UK. Pay by Pounds sterling/US dollars, Access, Visa, Mastercard accepted. (Prices are in \$US)

La Formations des Cartographes Compte Rendues du Seminaire de l'A.C.I., Rabat (Maroc), 16-21 Avril 1984, Edited by R.J.M.J. Bertrand, 1985, \$24.00.

Proceedings of the International Seminar on Computer Assisted Cartography, Organised by the Survey of India in collaboration with the ICA, New Delhi, India, November 22-29, 1983, \$32.25.

National and Regional Atlases: a Bibliographic Survey (up to 1978). W. Stams (1984), \$24.00.

Computer-assisted Cartography. Research and Development Report, July 1984. Compiled by Lowell E. Starr, 1984, \$20.50.

Methods and Display of Ocean Survey Data, Vols 1 and 2, Edited by R.H.W.Linton, 1983, \$24.75.

Computer-assisted Cartography; Cartographie assistee par ordinateur, Edited by L.Van Zuylen, 1979; papers presented at the seminar, 6-11 November 1978, Nairobi, Kenya, \$32.25.

Further examples of Environmental Maps: encore des exemples des cartes de l'environnement, Edited by D. Bickmore, 1984, compiled by the ICA/IGU Working group on Environmental Atlases and Maps, \$24.00.

Oceanic Cartography: Cartographie Oceanographique, Edited by A.J.Kerr and A.Kordick, 1972; papers presented at the 6th technical conference on Oceanic Cartography, held in Ottawa, August 1972, \$24.00.

ICA Bibliography 1956-1962-1972, E.Meynen, 1972, \$20.50.

NEW LOW PRICE!

Leo Bagrow's 2 volume history of Russian Cartography, edited by Dr. Henry W. Castner.

Volume 1: Cartography of Russia up to 1600

Volume 2: Cartography of Russia up to 1800.

These two volumes were derived from a translated manuscript left by the late Leo Bagrow at his death in 1957. The editor spent 10 years with both the original Russian and translated English manuscripts in various map collections in nearly two dozen major libraries in North America and Europe. The two volumes contain 452 pages, 157 map illustrations and a bibliography of over 1200 items, as well as a glossary of Russian terms.

The author was the founder and editor of *Imago Mundi*, the authoritative journal of the history of Cartography, and the author of over 70 scholarly books and papers. The editor teaches courses in map design and perception, and has published in the area of cartographic communication at the Department of Geography, Queen's University, Kingston, where he is also Director of the Cartographic Laboratory. Dr. Castner is a past president of the CCA and has represented Canada on the ICA working group on the History of Cartography.

The price for the pair of books is ONLY Cdn \$20.00 prepaid. For overseas orders, please add \$4.00 for postage and handling. Send orders to:

The Limestone Press, P.O.Box 1604,
Kingston, Ontario, K7L 5C8.

POSITIONS AVAILABLE

TENURE TRACK POSITION IN COMPUTER CARTOGRAPHY/GIS. DEPARTMENT OF GEOGRAPHY, UNIVERSITE LAVAL, QUEBEC. A tenure track position in Computer Cartography/Geographical Information Systems is available in the Department of Geography at the Université Laval in Québec City. The successful candidate should have a good knowledge of computer assisted cartography and geographical information systems; additional interests in remote sensing and/or quantitative methods, computer science would also be appreciated. Candidate must be committed to undergraduate and graduate teaching and research. *The teaching language is French.* Appointment starting on June 1 or September 1, 1988. Applications, including a curriculum vitae, names and addresses of three referees, should be sent before January 15, 1988 to Dr. Benoît Robitaille, Chairman, Department of Geography, Université Laval, Québec, Québec. CANADA G1K 7P4 (telephone: (418) 656-2512).

ACADEMIC, NEW YORK, BUFFALO 14260. STATE UNIVERSITY OF NEW YORK AT BUFFALO. Assistant, associate, or full professor in *Geographic Information Systems*, for Fall Semester, 1988, contingent upon availability of funding. Ph.D. required. Applicant should have strong research and graduate and undergraduate teaching interests in GIS, with emphasis upon algorithms and data structures and spatial data handling. Additional interests in one or more of the following will be considered an asset: data base design, artificial intelligence, cognitive science, computer cartography, spatial statistics, and GIS applications in urban, physical, and/or environmental areas. Must have strong commitment to securing external funding and supervising graduate research. The department has several microcomputer-based GIS workstations and ARC/INFO running on a Vax cluster. Please send letter of application, curriculum vitae, and names of three referees by December 15, 1987. We are particularly interested in identifying prospective minority and women candidates. No person in whatever relation with SUNY-Buffalo shall be subject to discrimination on the basis of age, creed, color, handicap, national origin, race, religion, sex, marital or veteran status. Apply: James E. McConnell, Chair, 419 Fronczak Hall, Department of Geography (716) 636-2722.

FACULTY POSITION ANNOUNCEMENT. DEPARTMENT OF GEOGRAPHY, UNIVERSITY OF WATERLOO. The Department of Geography at the University of Waterloo invites applications for two tenure track appointments at the Assistant Professor level beginning September 1, 1988. One appointment will be for a person with research expertise related to the biophysical aspects of global environmental change and the other for a person with research expertise related to social and/or economic aspects of global environmental change. Undergraduate teaching activity will focus upon physical geography, air photo interpretation and remote sensing, cartography, quantitative methods, and international development. Expertise in computer-aided education is being sought in at least one of these appointments.

Closing date for applications is March 15, 1988. Women are particularly encouraged to apply. Applications should include a curriculum vitae and names of three referees.

Apply to: Dr. Bruce Mitchell, Chair, Department of Geography, University of Waterloo, Waterloo, Ontario, N2L 3G1.

UNIVERSITY OF WESTERN ONTARIO, DEPARTMENT OF GEOGRAPHY, LIMITED TERM FACULTY POSITION.

Faculty position for up to three years, in Cartography, at Assistant Professor level, Ph.D required. To teach one course in Cartography, another in another area of expertise, conduct research, supervise graduate/undergraduate students. Start: July 1, 1988, application deadline: Feb. 29, 1988. Applications (with CV and name of three referees) to: Dr. R.W. Butler, Chairman, Department of Geography, University of Western Ontario, London, Ont. N6A 5C2.

UNIVERSITY OF NORTHERN IOWA, DEPARTMENT OF GEOGRAPHY, CEDAR FALLS, IA 50614-0406. Position: This position is for a cartographer to teach Advanced Cartography, Remote Sensing, and World Geography. It is a temporary, full-time, one-semester only appointment for Spring semester 1988 to replace faculty members on leave. The teaching load is nine hours per week (three classes). Successful applicant will be appointed at the rank of instructor

or assistant professor. Applications* should be sent to: Dr. Jonathon J. Lu, Acting Head, Department of Geography, University of Northern Iowa, Cedar Falls, IA 50614-0406. Telephone: (319) 273-2772.

*Applicants should send a letter of application together with a *complete set* of personal data, as well as to arrange for three letters of recommendation to be sent directly to the name and address listed above. Review of application will begin about mid-November 1987 and will continue the process until the position is filled.

CARTOGRAPHIC LAB MANAGER : CLARK UNIVERSITY, WORCESTER, MASS, USA.

Masters degree preferred. Experience in cartography and related fields essential. Responsible for operating a cartographic production center for departmental and university needs. Competence in all facets of cartographic production including compilation, drafting, design, and darkroom techniques. Knowledge of remote sensing and geographic information systems required and ability to act as systems manager for the school's growing network of computer equipment. Salary dependent upon qualifications. Send resume and three letters of reference to: Jean Heffernan, Graduate School of Geography, Clark University, 950 Main Street, Worcester, MA 01610, USA. Deadline for applications is January 25, 1988. Position to begin as soon as possible thereafter. Clark University is an Affirmative Action / Equal Opportunity employer. Minorities and women are encouraged to apply.

**UNIVERSITY OF WISCONSIN -
MADISON, ASSISTANT PROFESSOR**

Ph.D required. Any combination of: cartographic methods, environmental studies, GIS, physical geography, quantitative methods, urban/economic geography. Send application, list of references, CV and transcript by December 15 to:

Robert D. Sack, Chair, Department of Geography,
M383 Science Hall, University of Wisconsin-Madison,
Madison, WI 53706. USA.

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Canadian Cartographics Ltd., a thematic cartography consulting office in Coquitlam, British Columbia, needs senior cartographers to manage the production side of its operation and to look after marketing. Suitable candidates will be expected to become partners in the firm and take on other responsibilities.

Canadian Cartographics Ltd. has been in active business since 1973 providing thematic cartography services, including research and design as well as production and printing services, to federal and provincial government departments, regional and local governments and private sector organisations. Since 1983, the firm has been placing increasing emphasis on publications of its own "popular" maps, i.e., street and recreational guides. We currently have four maps published, twelve maps in varying stages of completeness and a major innovative mapping concept well past the R & D stage.

Contact Lou Skoda for full details at:

Canadian Cartographics Ltd.,
508 Clarke Road,
Coquitlam, B.C., V3J 3X2.
604-936-8544.

John Balodis, professor emeritus at **Curtin University, Western Australia**, has started his most recent extended visit to Canada. During his stay, he will be associated with Canadian Cartographics Ltd., Coquitlam, B.C.. John is not new to the Canadian cartographic establishment: in 1985, he spent a sabbatical year with Canadian Cartographics Ltd., as a visiting research cartographer.

A Fellow of the Royal Geographical Society and the Australian Institute of Cartography, John has taught cartography since 1966, first at Wembley Technical College and later at the Western Australian Institute of Technology. He was actively involved in the establishment of a Master of Applied Science degree course in cartography at WAIT.

- Malcolm Brown

1987 CANADIAN NATIONAL MAP EXHIBIT AT MORELIA, MEXICO

Index of maps

1. Ecological Regions of Southern Quebec – Second Approximation, *Michel Thibault, Service de la Cartographie, Ministère de L'Energie et des Ressources, \$5.50*
2. Inventory of Peat Bogs in Tête-À-La-Baleine Region, *Service de la Cartographie, Ministère de L'Energie et des Ressources, Free.*
3. Ontario Intercity Transportation Guide 1986-87, *Cartography Section, Ministry of Transportation and Communications, Free.*
4. Ecological Framework of the Quebec Region at the Time of the Stadacona Indians *Francois Morneau, Departement de Géographie, Université Laval.*
5. Geological Map of the Cochrane Hill Open-Pit Gold Deposit, Guysborough County, Nova Scotia, *Maritime Resource Management Service, Amherst, NS, \$8.00*
6. Official Nov Scotia Highways Map, *Maritime Resource Management Service, Amherst, NS, Free.*
7. The Muskoka Tapestry, *Tapestry Graphics Inc., Collingwood, Ont., \$4.50.*
8. (Alberta) Summary of 1986 Game Bird Regulation, *Alberta Forestry, Lands and Wildlife, Resource, Evaluation and Planning Division, Free.*
9. Vancouver as Seen From Space, *MacDonald Dettwiler and Associates Ltd., Richmond, BC., \$30.00.*
10. Gradient Map of the Dewdney Cycling Trail, *Steve Cohen, Sir Sandford Fleming College, Lindsay, Ont., Free for educational use.*
11. Junior Atlas of Newfoundland and Labrador – Pilot Project (3 plates). *Department of Geography, Memorial University of Newfoundland, St. John's, \$1.50/sheet.*
12. Surficial Geology, Northeastern Manitoba; Geological Survey of Canada, Map 1617A L.A. *Dredge/F.M. Nixon, Geological Survey of Canada, EMR, Ottawa, \$4.00.*
13. Horizontal Gradient of the Bouguer Gravity Anomaly of North America, *Geological Survey of Canada, EMR, Ottawa Price: TBA.*
14. Magnetic Anomaly Map – Timmins, Ontario and Quebec, *Geological Survey of Canada, EMR, Ottawa, \$3.50.*
15. Facsimile Reproductions of the British Admiralty Charts of the Great Lakes. Lake Huron, *Hydrographical Office of the Admiralty (Great Lakes Cartographic Resource Centre, UWO) \$2.00*
16. National Capital Region, *Canada Centre for Remote Sensing, EMR, Ottawa, Free.*
17. Eleventh International Conference on the History of Cartography, *National Map Collection, National Archives of Canada, Ottawa, Free.*
18. Alberta Provincial Base Map 1:1 000 000, *Alberta Forestry, Lands and Wildlife, REAP, \$4.75.*
19. Biogeoclimatic Units of the Vancouver Forest Region *F.C. Nuszdoefer, K.L. Kassay, A.M. Scagel, Ministry of Forests and Lands, B.C., \$5.00.*
20. Cityscape: A Map of Downtown Vancouver, *Weller Cartographic Services Ltd., Vancouver, BC., \$3.50.*
21. Restaurant and Entertainment Guide to Victoria, *Canadian Cartographics Ltd., Burnaby, BC., \$1.95.*
22. National Topographic System of Canada (NTS) – Sheet 43K/9 *Topographical Survey Division, Surveys and Mapping Branch, EMR., Ottawa, \$4.00.*
23. Provincial Parks of the Kootenays, *Parks and Outdoor Recreation, Ministry of Environment and Parks, B.C., Free.*
24. Canada Land Use Monitoring Program – Brochure *J. Philip Nicholson and Lands Directorate, Environment Canada, Free.*
25. Victoria Urban-Centered Region, 1976-1980, Fact Sheet, *Anne Kerr, Environment Canada, Lands Directorate, Vancouver, BC, Free.*
26. Environmental Elements Sensitive to the Installation of Electrical Infrastructures, *Hydro-Québec, Montreal, Free.*
27. British Columbia – Forest Resource Information System *Planning and Inventory Branch, Min.of Forests and Lands, Victoria, BC.*
28. The National Atlas of Canada (English Edition) *Geographical Services Division, Surveys and Mapping Branch, EMR., Ottawa, \$142.50.*
29. Atlas of Suitable Grape Growing Locations in the Okanagan and Similkameen Valleys of BC *Association of B.C. Grape Growers, Ministry of Environment and Agriculture and Land, Free*
30. Chart 3312, Jervis Inlet and Desolation Sound and adjacent waterways *Pacific Region, Institute of Ocean Sciences, Canadian Hydrographic Service., \$48.00.*

31. Canada and the World: An Atlas Resource, *Geoffrey J. Matthews/Robert Morrow Jr.*, \$29.95/19.95 (educational).
32. Perly's 1987 BJ Map book of Metro Toronto and vicinity- Executive edition, 28th edition *Perly's Maps Ltd., Toronto.*, \$12.95.
33. Thinking about our Heritage: A Hosford Study Atlas, *Peggy McCallum, Copy Editor, Hosford Publishing, Edmonton.*, \$9.80.
34. Interatlas: Quebec's and Canada's Resources *Andree Babin, Claude Cossette, Louis Marcotte, Pierre Paradis, Jean Raveneau, Yves Tessier, Centre d'Etudes en enseignement du Canada/ Universite Laval*, \$23.95.
35. The Great Lakes, an Environmental Atlas and Resource book *Alun Hughes, Department of Geography, Brock University.* Free.
36. Localization of the Aboriginal Nations in Quebec-Land Transactions *Jacqueline Beaulieu/Service de la Cartographie, Ministere de l'Energie et des Ressources*, \$20.00.
37. Junior Atlas of Quebec, *Jean Carriere, Publisher: Centre Educatif et Culturel, Inc., Montreal*, \$18.95.
38. Marine Science Atlas of the Beaufort Sea Sediments *Editor: B.R. Pelletier/Geologic Survey of Canada, EMR, Ottawa.*, \$30.00.
39. My Exploration Tools/Mes outils d'exploration (student workbook/teacher's manual) *Erik Graf*, \$27.59.
40. Nova Scotia Resource Atlas, *Maritime Resource Management Service, Amherst, NS.*, \$17.00.
41. Historical Maps of Canada. Portfolio 3: ACML Facsimile Map Series Numbers 101-125 *Edward H. Dahl (compiler)/ Association of Canadian Map Libraries*, \$3.00 each.
42. Map Reading, *Lou Sebert, Publisher: Canada Map Co., Toronto*, \$11.95.
43. Guide for a small map collection *Barbara Ferrell, Carleton University, and Aileen Desbarats, University of Ottawa.*, \$16.00.
44. The National Atlas of Canada (French Edition) *Geographical Services Division, Surveys and Mapping Branch, E.M.R., Ottawa*, \$142.50.
45. ICA Newsletter, *ICA Publications/University of Toronto*

These maps were selected as being representative of the best of Canadian Cartography, 1984-87. The selection committee was composed of the following:

*John Thompson and Eva Siekierska (EMR),
Betty Kidd and Louis Cardinal (National Archives of Canada),
Barbara Farrell (Carleton University)
Jean Raveneau (Universite Laval)
D. Monahan (Fisheries and Oceans),
Wendy Simpson-Lewis (Environment Canada),*

Author, publisher and price (where applicable) appear in italics; further details regarding these maps can be obtained from Louis Cardinal, Maps Division, National Archives of Canada, 395 Wellington St., Ottawa., or from the publishers.

Software will feed map data into computers

BY TAMSIN CARLISLE
Special to The Globe and Mail
CALGARY

To big users of maps, computer technology sometimes can seem a mixed blessing. On one hand, computerized maps can be manipulated and reproduced at lightning speed; on the other, the translation of stacks of drawings into digital data for a computer to store is costly and time-consuming.

But a Calgary company is putting the finishing touches on a software package that streamlines this process. "We felt it was an area that had been overlooked. Nobody was looking at how map data get into computers, so it was taking an awful lot of work," said Kevin O'Connor, former research and development manager for QC Data Collectors Ltd.

Mr. O'Connor, who recently has taken a research position at

the University of Calgary, said capturing the wealth of information contained in a map and consigning it to electronic memory is a complex, multi-step procedure.

First, a "scanner" — a sophisticated photographic device containing an array of carefully aligned cameras — produces a stylized black-and-white picture of the original map, made up entirely of dots.

Next, a "vectorizer" generates digital data, based on statistical guesses about which dots join into lines, and how intersecting lines connect.

Unfortunately, the vectorizer does not always guess correctly. As Mr. O'Connor said: "The digital data at this point are like a plate of spaghetti. A whole lot of lines are thrown together, and a piece of grid might just as easily be connected to a piece of a contour as to another piece of grid."

This is where the time-consuming part of the operation begins,

TECHNOLOGY

because the vectorizer's data must be untangled carefully before they can be used as a computerized map. And this is where QC Data's software can help, Mr. O'Connor said.

As the result of a two-year joint research venture with the Alberta Research Council, completed in December at a cost of \$700,000, the company has developed a system that allows the user to edit map data quickly, easily and inexpensively.

The system is one of the first of its kind designed to run on a desktop microcomputer — an IBM PC/AT.

Demonstrating the software in QC Data's boardroom, Mr. O'Connor showed off several advanced features for classifying and tagging categories of information and, layer by layer, building up an accurate representation of the original map in the com-

puter's memory. He also showed that the system is easy to manipulate by an operator who need not have any knowledge of programming.

Ken Maier, executive vice-president of QC Data, said that, in its early days, the 10-year-old company operated from a one-bedroom apartment, digitizing well-log data for the Calgary oil patch. Today, after moving to plush premises in downtown Calgary and establishing additional offices in Denver and Houston, QC Data has captured 70 per cent of the world market for this specialized service.

But the company is trying to move away from dependence on the oil industry, Mr. Maier said. He predicted that the mapping software, aimed at telecommunications companies, utilities and municipalities, as well as oil and gas operations, will help bring this about.

"The computer mapping field

is a wide field, and we stand a good chance of cornering a piece of the market."

Robert Hipkin of the ARC's advanced technologies department agreed that the map-editing software is generating a lot of interest from outside the oil patch. "We get about two calls per week from municipalities."

He added that, as part of their agreement with QC Data, the council will send a copy of the software to the Geological Survey in Edmonton.

Mr. Maier said QC Data's new system is being refined and tested at the company's headquarters and by Dome Petroleum Ltd. of Calgary. There are no definite plans for marketing the product.

Although the company might decide to sell copies of its software directly to users, it also might retain the program for internal use, which would allow QC Data to offer a unique map-editing service, he said.

(Reprinted from the Globe and Mail) For further information on this article, contact the Newsletter Editor.

UPCOMING EVENTS

Mar 13-19, 1988, St. Louis, Missouri, ACSM/ASPRS Annual Convention, Contact: George T. Cline, 8 Fairlake Dr., Chesterfield, MO 63017, 314- 263-4604.

April 7-10, 1988, Phoenix, Arizona, Association of American Geographers, Annual Meeting.

May 25-27, 1988, Joint annual meeting CCA/OICC, Toronto. Contact: CCA, Geography Department, Memorial University of Newfoundland, St. John's, Newfoundland, A1B 3X9, or Dr. Gerald Walker, Department of Geography, York University, North York, Ontario, M3S 1P3.

Aug 22-26, 1988, Sydney, Australia. 7th Australian Cartographic Conference. Incorporating Austra-Carto III, and held in conjunction with the 26th International Geographic Congress. Theme: "From the age of discovery to the age of space". The Secretariat, 7th Australian Cartographic Conference, G.P.O.Box 2609, Sydney, NSW Australia 2001.

Sept 20-22, 1988, Eurocarto Seven, ITC, Enschede, Netherlands. "Environmental applications of Digital Mapping" Send paper abstracts to: Prof. J-C Muller, Dept. of Cartography, ITC, P.O.Box 6, 7500 AA Enschede, Netherlands. (500-1000 words in english, by Feb 1, 1988). Completed papers by May 1) Conference sub-topics: remote sensing applications, integrated digital mapping applications, GIS for environmental impact assessment. Further details: Eurocarto Seven, Rene Bertrand, c/o ITC, P.O.Box 6, 7500 AA Enschede, The Netherlands.

Aug 17-24, 1989, Budapest, Hungary. 14th International Cartographic conference. Preliminary programme: automation in cartography, geographical information systems, uses of remote sensing in the national economy, maps for organising and controlling agricultural and water resource management, national and regional atlases, modern education-modern maps, maps in the service of tourism, technologies of map production. Further details from: Conference Secretary, Institute of Geodesy, Cartography and Remote Sensing, H-1373 Budapest, POB 546, Hungary, or CCA Office (address on page 2).

Sept 23- Oct 1, 1991, 9th General Assembly and 15th International Conference of the International Cartographic Association, Bournemouth International Centre, UK. (more details closer to the event!)



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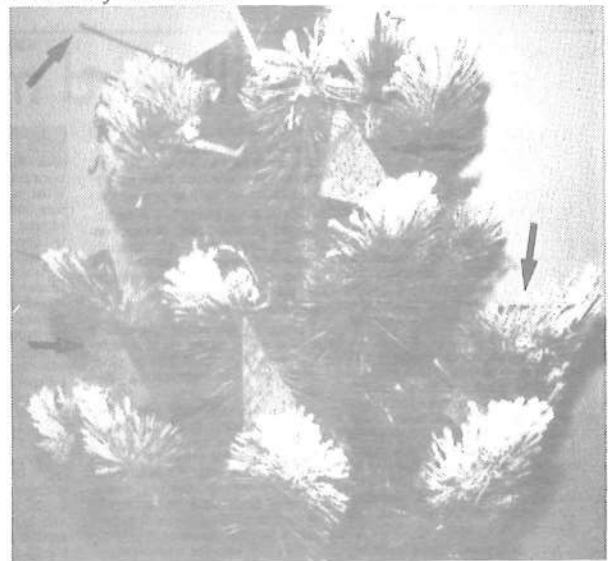
Campus Cart-oon

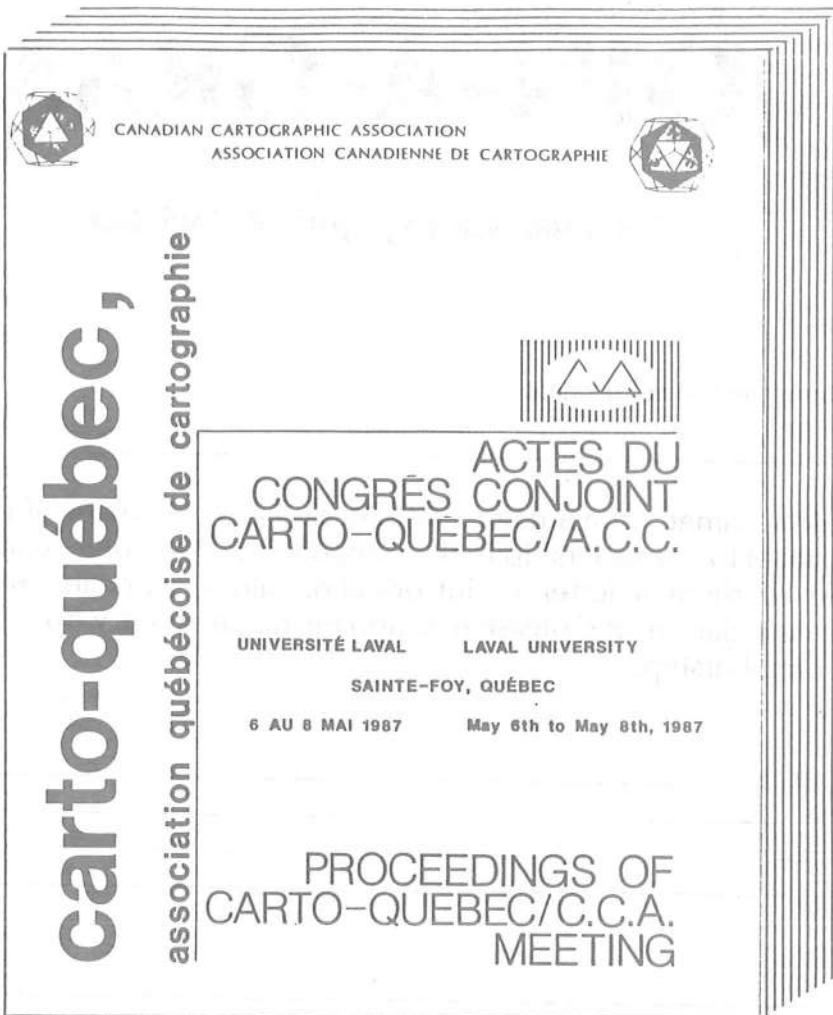
Technical topical hints

-Peel coat won't etch ?

-Tried to scribe with a hangover ?

Don't throw that failed scribe/peel coat away with christmas coming. Those bright colours look just great on the tree. Cut them into shards and hang them up. The unwashable etching solution looks just like the white stuff. Merry Christmas!





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Canadian Cartographic Association



Dr. Norman Drummond, Vice-President

From: _____

The below named individuals, colleagues or acquaintances of mine, are or may be good candidates for membership in the Canadian Cartographic Association. Would you please send to them a letter of introduction along with an invitation to join our progressive Association, and please mention my name as one who is currently benefiting from CCA membership.

1) Name _____
Address _____

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Address _____

3) Name _____
Address _____

4) Name _____
Address _____

Return the JOIN-A-GRAM to:

Dr. Norman Drummond,
Department of Geography,
McGill University,
Sherbrooke St. W., Montreal,
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