CANQUA

Canadian Quaternary Association
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CANQUA PRESIDENT'S REPORT

Greetings from the President,

Welcome to the new CANQUA newsletter! After a brief lapse, the newsletter is back on track thanks to Ian Spooner and Ralph Stea who have graciously volunteered – without any arm twisting – to take over the responsibility of editing the newsletter. This is no small task and as they and we are all professionally very busy, we all owe Ian and Ralph a big thank-you for performing this invaluable service to our organization. I would also like to thank Steve Robinson for his efforts as the former newsletter editor.

The CANQUA meeting in Halifax in June 2003 was a wonderful success and I would like to thank Ralph Stea and Gordon Fader, Chairs of the Organizing Committee, and all their volunteers for all of their hard work and hospitality. Times between CANQUA conferences have traditionally been quiet, but last fall I wrote a report of CANQUA activities to the Advisory Committee on International Science, Engineering and Technology (CISET) as part of the review process for assessing and renewing the partnership agreement between CANQUA and the National Research Council of Canada. This is an important agreement because through it we maintain a formal relationship with INQUA by overseeing the Canadian National Committee for INQUA which sends voting delegates to INQUA Congresses. I'm pleased to say that the assessment of our activities in relationship to INQUA objectives has been positive and in May I signed a new 5-year agreement that extends to 2009.

CANQUA is financially and professionally healthy and I am proud to lead it. When I attended a partnership meeting of the Canadian Research Council-Canadian National Committees in Ottawa in May 2003, I was struck by a discussion about society memberships. A large majority of professional societies in Canada and elsewhere are experiencing a decline in memberships, but CANQUA is an exception!! Our membership has grown from 129 in 2000 to a high of 248 in 2003 (it spikes in conference years) and currently sits at 165 paid members (please renew if you haven't already!).

Finally, I would like to urge all members to be active within CANQUA affairs. Society business continues between conferences. As with any organization, you will get out of it what you put into it. So don't hesitate to contact me, other executive members, or your councilors about any aspect of CANQUA through the contact information on our website, which is maintained through the considerable efforts of Dave Liverman.

I'm also proud and enormously pleased to congratulate John Clague on CANQUA's behalf for his election as INQUA President at the INQUA Congress in Reno last summer. His election is a fine testament not only to his stature as a preeminent Quaternarist, but also of the

stature and regard that others have for the Canadian Quaternary community.

I wish you all productive field and lab seasons this summer and hope to see you in Winnipeg/Regina for our innovative split-venue conference next year!!

Les C. Cwynar

CANQUA SECRETARY-TRESURER REPORT

CANQUA continues to be a vibrant organisation, bucking the trend of many academic organisations by steadily increasing our membership numbers over the past decade. Our membership numbers are indicated below and show the expected spikes in membership in years of our meetings (2001 in Whitehorse, and 2003 in Halifax). The influx during conference years is directly related to our initiatives to have a strong student representation and participation at our meetings. Halifax saw 42 students attending, which helped push our membership numbers over 200, the first time that has been achieved for quite a while! However, we have also managed to keep our numbers up in the years between meetings, already reaching 126 full members for 2004. CANQUA must be doing something right to retain this level of support from its members!

	04[1]	**03**	**02**	**01**	**2000**
Full Members	126	180	148	129	94
AQQUA Affiliates	18	26	25	28	31
Students	12	42	13	35	4
[1] up to May 2004	***156***	***248***	***186***	***192***	***129***

CANQUA is currently on a sound financial footing. Our revenues in recent years have been boosted by profits from the Whitehorse meeting, and by our limited expenses. We have been fortunate in reaping the benefits of being housed within a provincial government structure supportive of the efforts of CANQUA. As such, our administrative costs have been negligible. Similarly, the production of our past newsletters, admirably coordinated by Steve Robinson, has been completed at little cost to CANQUA. Much of the distribution is electronic, resulting in considerable savings. Most of our fees are to provide members with GpQ, and although there have been some production difficulties in the past, there should be an outpouring of issues this year that should see the journal back on track by early next year.

Martin Batterson

CANQUA 2005

THE CANADIAN QUATERNARY ASSOCIATION

CANQUA

MEETING WILL BE HELD

JUNE 5-9
2005

IN BOTH WINNIPEG (June 5-6)
& REGINA (June 8-9)

Look for the full page add at the end of the newsletter! Post it at your institution!

IGCP 490

IGCP 490, The role of Holocene environmental catastrophes in human history Canadian project leader: Dave Liverman

The project focuses on the inter-disciplinary investigation of Holocene geological catastrophes, which are of importance for civilizations and ecosystems. Work on the project started in January 2004 with a joint meeting with the International Council of Scientific Union "Dark nature: rapid natural change and human response" project, in Mauritania. This was a two week conference with an unusual mix of field excursion and presentations. The first week focused on coastal issues and problems and was based largely in the Banq d'Arquin National Park, and the second week examined climate change and its effect on civilizations with field travel in the Atar Plateau region. Presentations were integrated into the field work, and took place under some rather unusual conditions! Three Canadians participated and gave presentations at the meeting, Dave Liverman, Tony Berger and Michael Brookfield. 2004-05 activities include sessions at the International Geological Congress in Florence in August, and possibly a meeting in Turkey in June. Further meetings are planned in Mozambique in Autumn 2004, Argentina in February, and Whitehorse in June 2005. Canadian researchers interested in this project are urged to contact the Canadian leader!

AN APPEAL TO THE MEMBERSHIP

Dear CANQUA members

The newsletter editors are soliciting your input for the 'all new' CANQUA newsletter. Please send us any information you deem worthy of inclusion. This might include interesting activities in your area, conferences and meetings that are coming up, and field trips. Student theses or reports, papers, maps etc. of note are also welcome. Also of interest are new hires in Quaternary Science (university, government, NGO other). Interesting field photos drawings are welcome as well! We really encourage any information that you think would be of interest to the community.

Thanks:
Ralph Stea & Ian Spooner, CANQUA
rrstea@gov.ns.ca
ian.spooner@acadiau.ca
Newsletter Editors

DEVELOPMENTS IN PALEOENVIRONMENTAL RESEARCH (DPER) BOOK SERIES

We are very pleased to announce a special (temporary) PRE-PUBLICATION offer for the purchase of the next three volumes of the DPER (Developments in Paleoenvironmental Research) Series.

Volumes 6 through 8, currently scheduled to be published this winter, are now available for order at the special price of $55US (Euro50) per book! Please see details of this special offer at the DPER Web site:
http://home.cc.umanitoba.ca/~mlast/paleolim/dper.html

This pre-publication offer is available only for credit card purchases, and the special order form (available at the above web site) must be completed and returned to Kluwer at the address or fax given on the form.

The titles/editors of these three new volumes are:

Volume 8: Long-Term Environmental Change in Arctic and Antarctic Lakes

edited by R. Pienitz, M. S. V. Douglas and J. P. Smol. Hardbound, ISBN 1-4020-2125-9, ~500 pages

Volume 7: Image Analysis, Sediments and Paleoenvironments. Edited by P. Francus Hardbound, ISBN 1-4020-2061-9, 338 pages

Volume 6: Past Climate Variability through Europe and Africa
Edited by R. W. Battarbee, F. Gasse and C. E. Stickley. Hardbound, ISBN 1-4020-2120-8, ~600 pages

The detailed Table of Contents for these books, as well as the other DPER volumes, are available at the web site above. Please contact Ms. Judith Terpos (e-mail: Judith.Terpos@wkap.nl) if you have any questions.

John P. Smol and Bill Last (book series co-editors)

JOURNAL OF PALEOLIMNOLOGY (JOPL)

A reminder, if you want to start or renew your personal paper subscription of JOPL at the special rate of $140 US for both volumes (including special issues) that are published in 2004, please go to: http://www.umanitoba.ca/geoscience/paleolim/jopl.html

You are invited to visit the Journal of Paleolimnology homepage at http://www.wkap.nl/journals/jopl

In addition, the Editors maintain a second home page for the journal, with additional information, at: http://www.umanitoba.ca/geoscience/paleolim/jopl.html

If you have any questions about the journal, please contact the Editors (John P. Smol, smolj@biology.queensu.ca) or William M. Last, WM_Last@UManitoba.ca)

TEXTBOOK ON PALEOLIMNOLOGY

Smol, J.P. 2002. Pollution of Lakes and Rivers: A Paleoenvironmental Perspective. Arnold Publishers, London; Co-published by Oxford University Press, New York. 280 pp. Glossary, Index.

Paperback ISBN: 0 340 69167 0;
Hardcover ISBN: 0 340 74146 5

Paperback sells for approximately $35.00 US; $57.00 CAN

More information on this textbook, including Table of Contents, is available at:
http://biology.queensu.ca/~pearl/textbook.htm

AN IMPORTANT MESSAGE FROM THE INQUA EXECUTIVE COMMITTEE

Colleagues:

The International Commission on Stratigraphy (ICS), under the auspices of IUGS and ICSU, is revising the Geological Time Scale. A proposed revision of great consequence to the Quaternary community is an extension of the Neogene System to the present. The Pleistocene and Holocene would be retained as Series, but the Quaternary would be eliminated as a System. An argument made by ICS is that the "Quaternary" and "Tertiary" are archaic

terms. Elimination of Quaternary as a System is clearly a highly charged issue, but ICS seems determined to make the change, whether or not Quaternarists agree.

INQUA does not accept the elimination of the word "Quaternary" from the Geological Time Scale. Accordingly, its Commission on Stratigraphy and Geochronology has suggested a compromise to the INQUA Executive Committee that may or may not be acceptable to both the larger Quaternary community and ICS (see following letter and proposal from Brad Pillans). The gist of the proposal is to define a Quaternary Subsystem that encompasses the present Pleistocene and Holocene Series, as well as the Gelasian Stage (2.6-1.8 Ma). Under this proposal, the boundaries of the Pleistocene and Holocene would remain unchanged.

The INQUA Executive Committee ask for your feedback on this important issue. Please send your comments to John Clague (jclague@sfu.ca) and Brad Pillans (brad.pillans@anu.edu.au).

INQUA Executive Committee:
John J. Clague, Nicholas Shackleton
Peter Coxon, Margaret Avery
Allan Chivas, Jan Piotrowski
Denis-Didier Rousseau, An Zhiseng

THE OLAV SLAYMAKER AWARDS

The Olav Slaymaker Awards are given for the best student oral paper and best student poster presented at the CGRG Annual Meeting. I am pleased to announce the recipients of the 2004 Olav Slaymaker Awards:

Daniel Fortier, Université Laval, for his paper (co-authored M. Allard and O. Piraux)"Thermokarst rapide de polygones à coins de glace par écoulement souterrain d'eau dans le pergélisol, Ile Bylot, archipel arctique canadien".

Chris Hugenholtz, University of Calgary, for his poster (co-authored D. Lacelle)."Spatio-temporal controls on landslide activity in Champlain Sea clays, Eastern Ontario, Canada".

This announcement has been posted to the CGRG web site at http://cgrg.geog.uvic.ca/award.htm.

On behalf of the CGRG, I want to thank Antoni Lewkowicz, Yves Michaud and Antoine Beriault for judging the student papers and posters at the AQQUA-CGRG meeting in Quebec City.

Dave Sauchyn
Past-President, CGRG

GEOLOGICAL SOCIETY OF AMERICA ANNUAL MEETING 2004

John Andrews, Geoff Seltzer and I are convening a theme session for the upcoming GSA annual meeting in Denver (Nov. 7-10, 2004). The theme session (T96) is entitled Records of Late Quaternary Climatic Change from the Americas: Interhemispheric Synchroneity or Not?

We seek papers (in oral and poster format) that review high-resolution physical, chemical, and biological archives of climate change during the past ~30,000 years from the Americas, and also including Antartica and Greenland. Our focus is mainly on terrestrial evidence, but we also welcome near-shore marine

records that directly record terrestrial events.

For this GSA theme session, we would like to assemble a transect of paleoclimatic archives (in oral and poster format) that extend from Antarctica through the Americas and into Greenland. This would provide a broad perspective based on the most current data sets from these regions. We anticipate that this session will provide insight into interregional and interhemispheric climatic change, and will help to identify regions and/or methodologies that warrant special attention for future work. This theme session is likely to engender lively discussion, and we anticipate that it will attract both a large audience and, through our list of national and international invitees, the attendance of some scientists who do not normally attend GSA meetings.We hope to see you in Denver!

Sincerely,
--
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RECENTLY PUBLISHED THESES: M.Sc.

Late Glacial Lakes of the Thompson Basin, Southern Interior of British Columbia: Paleogeography and Paleoenvironment.

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Abstract

During the decay of the Cordilleran Ice Sheet (CIS), ~10 to 12 ka radiocarbon years BP, numerous ribbon lakes developed within the moderately deep valleys of the Interior Plateau of British Columbia. A rich geomorphic and sedimentary record of these lakes remains. This study integrates geomorphology, sedimentology, aerial photographs, differential global positioning system data, ground penetrating radar data and a digital elevation model (DEM) in a geographic information system (GIS) to (i) investigate, survey and correlate paleolake levels, (ii) reconstruct paleolake geography, evolution and environment, and (iii) reconstruct glacio-isostatic rebound.

Two definable glacial paleolake levels were identified, associated with Glacial Lake Thompson and Glacial Lake Deadman. DEMs of paleolake levels, inferred lake bottom and modern topography were integrated in a GIS to quantify lake parameters. Lakes were ribbon-shaped (width to length ratio of ~3:100), deep (~140 and ~50 m, respectively), and of significant volumes (84 and 24 cubic km, respectively). Glacio-isostatic tilts of these lake shorelines (1.8 - 1.7 m/km) are among the highest measured in the world and are related to a thin lithosphere, a low viscosity mantle and rapid deglaciation. Glacioisostatic depression in the interior was likely hundreds of metres.

The sedimentary record of these lakes reflects the adjustments of a landscape undergoing deglaciation. Seventeen glaciolacustrine lithofacies were identified and record deltas, subaqueous fans, high rates of sedimentation, numerous hyperpycnal flows and a diversity of sediment dispersal and deposition processes. High sedimentation rates and numerous hyperpycnal flows suggest that ribbon lakes likely received their meltwater and sediment supply from ice remnant on the plateau.

Glacial Lake Deadman drained catastrophically with the breach of an ice dam, producing drainage bedforms and erosional surfaces within the basin, and discharging ~20 cubic km of water. It is possible that this event may have triggered the failure of glacial lakes downstream or upstream in the Fraser River system. Eventually the floodwaters reached the Strait of Georgia, a distance of ~250 km. Here exotic sediments dated between ~9,200 radiocarbon years BP and 10,800 radiocarbon years BP may record this jökulhlaup.

Provincial mapping beat: surficial mapping from coast to coast

Ralph Stea

The Boreal plains of northeast British Columbia (NTS map area 94P/NE).

We mappers of surficial geology have a vast country in which to ply our trade. Our mapping area is getting even larger as new 3-D technologies are developed that peer through the depths of glacial deposits to the bedrock surface. This provincial reporter is attempting a summary of surficial mapping projects across the country so that CANQUA members can glimpse the variety and scale of projects. This is by no means a complete synopsis, and reflects what was submitted and my own less than intrepid reporting. If you were left out, please send me some info for the next newsletter!

Newfoundland

Starting in the east, where the sun rises on the “Rock”, mappers Martin Batterson, Shirley McCuaig and Dave Taylor of the Newfoundland Department of Mines and Energy Geological Survey are busy completing till geochemistry and surficial mapping projects. Martin is compiling a surficial map of the Avalon Belt in Newfoundland, whereas Shirley is completing a regional till geochemical survey and mapping project of the Central Mineral Belt in Labrador. With the startup of Voiseys Bay and other exciting mineral projects in Newfoundland the emphasis of provincial mapping is on the use of glacial deposits in the location of other mineral deposits.

Industrial minerals are a vital aspect of any modern economy, and Jerry Ricketts is evaluating granular aggregate in southeast Labrador. Shirley and Jerry are also testing the use of ground-penetrating radar to map aggregate resources.

Nova Scotia

Here in sunny Nova Scotia surficial mapping in the Nova Scotia Department of Natural Resources (Mineral

Resources Branch) has also been focussed on defining mineral wealth, but in the industrial mineral category. A recently completed joint project, part of Natural Resources Canada Targeted Geoscience Initiative (TGI) in southwestern Cape Breton Island, produced two full colour 1:50 000 surficial maps of the area, and has defined new deposits of industrial clay and aggregate as well as potential water supplies in buried artesian aquifers. Involved in this project are the author and Susan Pullan of Terrain Sciences (GSC). Our mapping data are digitally available at various scales from the branch web site: http://www.gov.ns.ca/natr/meb/pubs/pubs3.htm.

A new 3-D mapping project in the Annapolis Valley, led by GSC (Quebec) in conjunction with the Nova Scotia Department of the Environment, seeks to develop a hydrological model of the valley, a region of intense rural and urban land use. Yves Michaud and Christine Rivard are the heading the project and Andree Bolduc will be in charge of mapping in the valley.

Garth Prime has been evaluating surficial aggregates for the branch across the province and is completing maps for the Annapolis Valley area.

New Brunswick

Across the Bay of Fundy in New Brunswick Toon Pronk, Al Seaman and Serge Allard working for the New Brunswick Department of Natural Resources (Minerals, Policy and Planning Division) are collecting till geochemical data in central New Brunswick with emphasis on that elusive, yet enticing commodity of commodities, gold. This is not surprising with the recent development of several gold mines in the Province each with a different paragenesis.

Along with till sampling, glacial striae mapping is often used by the New Brunswick researchers to get a handle on the complex ice flow history of the local Appalachian glaciers. Mike Parkhill, working on the EXTECH II project (Exploration Science and Technology) in the vicinity of the Bathurst Mining Camp, is trying to sort out the history and patterns of glacial dispersal and to determine till geochemical signatures around the known massive sulphide deposits. This work is also in conjunction with the GSC, Terrain Sciences Branch.

Quebec

Surficial mapping is still upfront at GSC-Québec, and heading these efforts are Serge Paradis and Michel Parent. The purpose of this work is to produce 1:100 000 scale maps of surface formations in the eastern Abitibi belt, incorporating information from existing maps and covering new regions. New data will be provided on land use, the location of construction materials, mineral exploration and environmental impacts,+ and the stratigraphic and paleoenvironmental context of the Quaternary sequences will be assessed .

Two maps at 1:50 000 scale were produced within the southern Québec project (NTS 21L/14 and 21L/11). In the last few years, a special effort was put on the Chibougamau and Grand-Nord areas. Four A-series maps at 1:100 000 scale, superseding 16 previously published Open File maps, were published for the Chibougamau region. Two maps at 1:125 000 scale were published this year for the Grand-Nord sector. Those maps will complete our ongoing surficial geology

mapping strategy in the Grand-Nord project. Previously published maps are 2005A (23F east), 2006A (23F west), 2013A (24I east) and 2014A (24I west).

Starting this year, a new series of maps will be done within the Saindon-Cambrien corridor in north-central Québec. Eight ice flow indicator maps, at 1:250 000 scale, will be produced within the next three years (24D, 24C, 23M, 23N, 34A, 34B, 33P, 33O). Andree Bolduc has been synthesizing available data and completing new maps in a regional and local investigation of targeted areas in southern Quebec, as well as work on the documentation of the Champlain Sea episode.

Ontario

The summer of 2004 is shaping up to be a busy one for the Ontario Geological Survey (OGS) as far as Quaternary related projects are concerned. Work in northern Ontario will see Peter Barnett mapping an area along the western side of Lake Nipigon. This work will complement a joint study with Richard Dyer aimed at developing surficial geochemical methods
to assist Pt-Pd exploration in the area. As part of Peter's study, he will also assemble a bedrock fault/lineament distribution map based on airphoto and remotely sensed imagery. The Ontario Prospector's Association, through the Lake Nipigon Region Geoscience Initiative supplies partial funding for these geoscience projects.

Abigail Burt and Stew Hamilton are undertaking a pilot project to investigate potential hydrocarbon gas seeps through Quaternary deposits. What, if any, potential these may hold as an energy source is the main question being addressed. The study is focussed on a series of "forestring" structures that have been identified in a band of the boreal forest of northern Ontario and the organic terrain of the James Bay Lowland. The origin of the features, which have been recognized for decades, is a matter of much debate.

In the Abitibi region of northeastern Ontario, the OGS will undertake a compilation of borehole data with the aim of producing a 3-Dl assessment of the glacial stratigraphy of the area north of Timmins. The OGS study's aim is to establish a Quaternary framework and thus increase the efficiency of drift exploration in this highly prospective, but heavily drift covered region.

Moving to southeastern Ontario, a kimberlite indicator mineral sampling project will be undertaken in the Madoc area by Janet Reid. The work will assess the potential for diamond-bearing kimberlites along the southern extension of the Timiskaming structure. Modern alluvium, till and glaciofluvial sediments will be collected. Similar surveys in other parts of the province have resulted in dramatic increases in diamond exploration following release of positive results.

Several Quaternary mapping and related studies in southern Ontario are being completed as part of the OGS's Groundwater Mapping Program. Two large, multi-year subsurface mapping studies are in progress in the areas centred on the Waterloo and the Oro (Barrie area) moraines. These projects, being completed by Andy Bajc and Shawn Slattery respectively, are aimed at defining aquifer location, size and vulnerability.

The OGS is funding several groundwater studies that are being delivered by Conservation Authorities (local agencies) in the southern part of the province. These projects have a variety of thrusts, including defining the aquifer

potential of buried bedrock valleys, completing groundwater modelling and assisting groundwater source protection strategies. A number of the projects involve partnership or co-operative agreements with the Geological Survey of Canada and universities. The GIS database/map of the Surficial Geology of Southern Ontario (MRD 128) is a recent release. A compilation of 124 OGS and GSC Quaternary maps, this product is a must have and a steal at just $40 for a two CD set. Check it out and see why it has already won a national award.

Manitoba

The Manitoba Geological Survey (MGS) currently employs two Quaternarists, Gaywood Matile and Heather Groom. Erik Nielsen retired in 2003 and his position is still vacant. The survey is well supported by the Assistant Deputy Minister, fellow Quaternarist, Christine Kaszycki. Major Quaternary activities include digital surficial geological map compilation, 3-D geological mapping, the compilation Manitoba Kimberlite Indicator Mineral data, and sand and gravel inventories related to land-use planning. Web content associated with these projects can be accessed from the MGS web page: http://www.gov.mb.ca/itm/mrd/geo/index.html.

The surficial geological map compilation series utilizes the Shuttle Radar Topographic Mission digital elevation model to provide shaded relief for the maps. South of 53/ has been recently completed; one 1: 500 000 sheet and sixteen 1: 250 000 scale sheets were released on May 20 of this year, with the remaining area north of 53/ scheduled for completion in November 2004.

Our 3-D geological mapping project started as part of the federal/provincial NATMAP II, Geology of the Winnipeg Region project . At that time we completed the southeastern portion of the province, an area more than 200 by 200 km. In 2002, the project became a solely MGS project. We are committed to modelling all of the southern Manitoba Phanerozoic terrane (the eastern portion of the Williston Basin), and the Phanerozoic terrane of the Hudson's Bay lowlands. We are currently nearing completion of the Lake Winnipeg basin area, at which time we will have completed approximately the eastern half of the Manitoba portion of the Williston Basin, an area of about 200 by 500 km.

Saskatchewan

Janet Campbell of the Saskatchewan Geological Survey is working on a multidisciplinary study with surficial mapping and till geochemistry in northeast Saskatchewan as part of the Peter Lake Project. The goal of the project is to assess the mineral potential of the region, particularly Gold, kimberlites and PGEs.

Alberta

Mark Fenton, Roger Paulen and John Pawlowicz are involved in a multi-year collaborative mapping project between the Geological Survey of Canada (GSC), British Columbia Ministry of Energy and Mines (BCMEM) and the Alberta Geological Survey (AGS), which is now compiling subsurface information, and unraveling the Quaternary and near-surface bedrock stratigraphy of northwestern Alberta using existing information sources. Quaternary specialists from the GSC, BCMEM and AGS are working cooperatively to collate these data in support of increasing shallow gas exploration. Products will include 1:250 000 scale surficial maps and till

geochemistry data in the search for kimberlites.

In the oil sands area north of Edmonton, near the Saskatchewan border, Laurence Andriashek of the AGS is mapping surficial aquifers and modelling groundwater flow. The rationale of this collaborative project with the Alberta Environmental Protection Agency is the amelioration of water use conflicts in this populated and industrially active area.

British Columbia

Rapidly expanding oil and gas development in northeast British Columbia has resulted in a dramatic increase in the need for new geoscientific data in the region. Quaternary geology studies in the region have three main applications: (1) provision of a stratigraphic framework for Quaternary gas exploration plays; (2) identification of aggregate resources for oil and gas development roads in areas of rapidly expanding exploration activity; and (3) an evaluation of the region's diamond potential.

The Northeast British Columbia Aggregate Mapping Program was initiated by the British Columbia Ministry of Energy and Mines, primarily in response to the critical need for new aggregate resources in a region where there is a chronic shortage of such deposits. Subdued topography, extensive muskeg, and a general scarcity of glaciofluvial landforms in the boreal plains make the use of traditional mapping techniques such as aerial photograph interpretation relatively ineffective for locating new deposits. The use of data sources such as wireline-geophysical, waterwell, seismic shot-hole, and rathole logs, and airborne aeromagnetic, high resolution electromagnetic and other remote sensing techniques have been successfully employed in exploring for buried or blind gravels. Investigations conducted into the use of vegetation as a proxy indicator of sub-surface sediment textures have met with mixed results. Studies to date have focused in the Fort Nelson region, where there is an immediate and large demand for aggregates, and have identified four main aggregate sites that contain a total new resource of approximately 5 000 000 m3 of granular material.

Interest in Quaternary gas was highlighted in the region by development of the Sousa Quaternary gas field near High Level, Alberta. This gas field has produced gas since 1998 from paleochannel sediments underlying late Quaternary glacial deposits. The paleochannel sediments are believed to be of early Quaternary age, although a Tertiary age is also possible. The cap for the gas is thick clay-rich glacial tills and glaciolacustrine sediments.

Northeastern British Columbia has similar geology, and a similar glacial history to the High Level area, and as such has similar potential to host Quaternary gas. Bedrock topography and inferred paleochannel mapping are currently being undertaken as a first step to evaluate the potential of the area to host such gas reserves. As part of this study, samples of glaciofluvial sands and gravels have been collected from outwash deposits and eskers, in an effort to assess the diamond potential in the region. Minerals have been identified in a number samples that could have a mantle source. Microprobe analyses have confirmed that kimberlite indicator minerals are present.

The Northeast British Columbia Aggregate Mapping Program has benefited from collaboration with the Geological Survey of Canada (Jan Bednarski, Alain Plouffe, Rod Smith),

Alberta Geological Survey (Mark Fenton, Adrian Hickin, Roger Paulen, John Pawlowicz), the British Columbia Minsitry of Transportation, Land and Water British Columbia Inc. various oil and gas companies working in the region, and from the involvement of both graduate and undergraduate students from the Univeristy of Victoria. The program is part of a Targeted Geoscience Initiative (TGI): Shallow Gas and Diamond Opportunities in Northern Alberta and British Columbia (www.nrcan.gc.ca/gsc/tgi_e.html). Multidisciplinary in nature, this program has incorporated various Quaternary sub-disciplines, and intra/interprovincial, provincial/federal, and public/private partnerships, to effectively meet its objectives.

WHERE IN CANADA IS IT?

Each newsletter will feature an image of a location in Canada. Email a newsletter editor with your answer and you might win a nifty CANQUA prize!

COMMENTS, CRITICISMS, INQUIRIES, AND ACCOLADES

Please direct all correspondence to your faithful newsletter editors
Kind words: ian.spooner@acadiau.ca
Nasty comments: rrstea@gov.ns.ca

THE CANADIAN QUATERNARY ASSOCIATION

CANQUA

MEETING WILL BE HELD

JUNE 5-9
2005

IN BOTH WINNIPEG (June 5-6) & REGINA (June 8-9)

WITH A 1½-DAY-LONG MID-MEETING FIELDTRIP
LINKING THESE TWO CITIES

There also will be

• a pre-meeting fieldtrip in the Lake Agassiz basin
• a post-meeting fieldtrip across the western Canadian Prairies

THREE SPECIAL SESSIONS ARE PLANNED

(1) "Paleoenvironmental change in glaciated North America: a special session in honor of Vic Prest"

(2) "Lakes in transition"

(3) "Climate at the edge"

For more details see the CANQUA web site
(www.mun.ca/canqua/index.html)
or contact co-chair Jim Teller (tellerjt@ms.umanitoba.ca)
or Dave Sauchyn (sauchyn@leroy.cc.uregina.ca>)