Canadian Association of Palynologists
Association Canadienne des Palynologues

NEWSLETTER

Volume 32 Number 2 December 2009

President's Message

I just realized this is my last message as President of CAP. I am very grateful to have been offered this opportunity to serve the Association, gain precious experience and get in touch with fellow palynologists. I am happy to announce that Matthew Peros will take over as President in January. He's already very committed to CAP and I anticipate he will accomplish a lot for our association. Let's all welcome him!

Some news...CAP has obtained permission from the Société Provancher (who own the rights to *Le Naturaliste canadien*) to digitize and disseminate Pierre Richard's pollen atlas on our website.

There was a good attendance at the Annual General Meeting held during CANQUA at Simon Fraser University. Minutes and report are included in this Newsletter. Next year's AGM will be held during Nova Scotia 2010, the joint AASP-CPC-CAP meeting that will take place September 29-October 2. Please see the advertisement posted in this Newsletter or the website. An exciting session on forensic palynology has been added to the program and two exciting fields trips have been organized.

In this Newsletter, you will also find reports on CAP-sponsored conference sessions: *Putting Ecology Back Into Paleoecology*, convened by Terri Lacourse and Marlow Pellatt at CANQUA 2009 at Simon Fraser University, and *New Directions in the Use of Pollen Analysis in Environmental and Climatic Reconstructions*, convened by Matt Peros and Sarah Finkelstein at the AGU meeting in Toronto.

And don't forget that applications for next year`s Student Research Award are due March 1, 2010.

Before I step down, I want to sincerely thank the CAP Executive Committee for their help, commitment and advice during my term as President: Mary Vetter, Alwynne Beaudoin, Terri Lacourse, Matthew Peros, Jean-Nicolas Haas. I am happy to regain the status of a simple member and will now tackle other challenges.

With my best wishes for 2010,

Sincerely,

Elisabeth Levac
CAP President, 2008-2009
elevac@ubishops.ca

CAP EXECUTIVE 2009

President: Elisabeth Levac
President-Elect: Matthew Peros
Secretary-Treasurer: Mary Vetter
Newsletter Editor: Terri Lacourse
Website Editor: Alwynne Beaudoin
Councillor to IFPS: Jean Nicolas Haas

ISSN 1188-3596

CAP ANNUAL STUDENT RESEARCH AWARD

The Canadian Association of Palynologists Annual Student Research award was established in 2009 to recognize students' contributions in palynological research. The award is open to any undergraduate or graduate student who is a member, in good standing, of CAP, regardless of their nationality or country of residence. The intent of the research award is to support student research with a strong palynological component. The award consists of a three-year membership in Association and $200 CDN, to be put toward some aspect of the student's research.

The application should consist of: 1) a one-page statement outlining the nature of the research project, its scientific importance, the approximate timeline to completion of the project, and the aspect of the research the funds would be directed toward; (2) a CV; and, (3) a letter of support from the student's supervisor. Applications should be submitted in French or English by email to the CAP President-elect by March 1st, 2010.

Only one award will be given per year and there will be no limit to the number of times a student can submit an application. Completed applications and questions concerning the award should be sent to the CAP President-elect, Matthew Peros (mperos@uottawa.ca).

Editor's Notes

Thank you to all who contributed material for this edition of the *CAP Newsletter*: Alwynne Beaudoin, Rob Fensome, Konrad Gajewski, Elisabeth Levac, Francine McCarthy, Peta Mudie, Matthew Peros, Pierre Richard, André Rochon, Susann Stolze, and Mary Vetter.

Deadline for Next CAP Newsletter

Please submit items for the next issue of the *CAP Newsletter* (Volume 33, Number 1, December 2009) by April 15, 2010. Conference reports, announcements, field trip reports, notices of new books, dissertation abstracts, book reviews, news, and essays on topics relevant to Canadian palynology are all welcome. Please send contributions to:

Terri Lacourse
CAP Newsletter Editor
tlacours@uvic.ca

Table of Contents

2009 CAP ANNUAL GENERAL MEETING MINUTES

Venue: CANQUA 2009, Simon Fraser University, Burnaby, BC, May 5th, 2009

Present: Alwynne Beaudoin (Recording Secretary), Gail Chmura, Les Cwynar, Alexandra Gerber, Simon Goring, Terri Lacourse, Estella Leopold, Rolf Mathewes, Matthew Peros (Chair), Jonathan Hughes, Emily Helmer, Florin Pendea, Vera Pospelova, Diana Tirlea, Charlie Schweger, Ian Walker. Quorum achieved.

1. Welcome, approval of agenda. Round table introductions, Matthew thanked Terri for arranging lunch and welcomed attendees. Agenda reviewed. Ian moved to approve agenda, Gail seconded. Agenda approved as presented.
2. Minutes from 2008 AGM were reviewed by attendees. Ian moved to accept minutes, Rolf seconded. Minutes accepted.
3. President's Report, Elisabeth Levac (in absentia). Matthew reviewed the CAP President's Report, noting that it had been a busy year for the Association. Rolf moved to accept report, Gail seconded. Report accepted as presented. (See below for report)
4. Secretary/Treasurer's Report, Mary Vetter (in absentia). Matthew reviewed the Secretary/Treasurer's report. Association expenses are low, with the student award and IFPS dues the main expenses. Simon moved to accept report, Terri seconded. Report accepted as presented. (See below for report)
5. Newsletter Editor's Report, Terri Lacourse. Terri noted that the next *CAP Newsletter* should appear soon, pending inclusion of the President's Message. She indicated that the next *CAP Newsletter* will be short, mentioning that she has had difficulty securing contributions. General discussion on Newsletter followed. Among suggestions for new or additional content were: a techniques

Front Row (Right to Left): Florin Pendea, Gail Chmura, Simon Goring, Alexandra Gerber
Back Row (Right to Left): Vera Pospelova, Charles Schweger, Alwynne Beaudoin, Rolf Mathewes, Les Cwynar, Matthew Peros, Terri Lacourse

section; information about lab supplies and equipment, including source of supply and details of suppliers; information on coring equipment and fieldwork tips; information about upcoming session at conferences; and discussion about which listservs are useful; and more details about web resources for palynologists. Charlie suggested that content should be directed towards student education. He suggested a series on history of palynology in Canada. He challenged meeting attendees to pick a palynologist and write up about them. Terri noted articles about Calvin Heusser and Pierre Richard in recent Newsletters. Matthew asked for volunteers to write some history articles. Charlie moved to accept report, Ian seconded. Report accepted as presented. (See below for report)

6. Website Editor's Report, Alwynne Beaudoin. Alwynne reviewed report highlights, including greatly increased web accesses during the last year. Terri noted that this increase was coincidental with *CAP Newsletter* going to a digital version and was likely attributable to the links to the website included in the Newsletter. Terri moved to accept report, Simon seconded. Report accepted as presented. (See below for report)
7. News from IFPS, Jean Nicolas Haas. No news report from IFPS.
8. CAP Student Research Award, Matthew Peros. Matthew reviewed history of the award and its development. In response to questions, he summarized the criteria for the award. Award recipients must include acknowledgment of CAP in research. The adjudicators this year were Matthew Peros, Terri Lacourse, and Jean Nicolas Haas. This year, CAP received three strong applications. Suzann Stolze, based at Kiel University in Germany, is the first recipient of the award. The meeting records congratulations to Suzann on this award. In answer to questions, Matthew clarified that undergrads could be considered for the award and that applicants need to be members of CAP to qualify. In response to a suggestion that, rather than money, the award might be directed to fund travel to conferences, the sense of the meeting was that CAP likely could not support this, since the amount would be so variable from year to year. Simon moved to accept the report of the student award, Gail seconded. Report accepted as presented. (See below for report)
9. Location for next AGM. Matthew reported that the CAP Executive has determined that the next AGM will be held at AASP-CAP meeting in Halifax in 2010. He expected CAP to have a strong presence at this meeting.
10. Conference presence at AASP-CAP Halifax 2010 and GeoCanada 2010 meetings. Matthew called for ideas for sessions at both these meetings. Simon wondered about the possibility of a dinoflagellate session at the Halifax meeting. Gail thought this would be a good venue for a session on palynological history, highlighting the lineage of palynology in Canada. Alwynne suggested a history session at GeoCanada 2010, remarking that 2010 also marked the 200th anniversary of Asa Gray, a distinguished North American botanist. Several other possibilities were mooted but no resolutions were proposed. Matthew encouraged anyone that wants to organize a session to go ahead.
11. Discussion on priorities and goals for CAP 2009/2010. This item generated lengthy and lively discussion, with many good ideas being explored and different avenues suggested. Rolf suggested CAP should have a greater presence at confer-

ences, perhaps including meetings such as the CAG or AAG conferences. Lengthy discussion followed. All agreed that getting CAP better known in the broader bio- and geoscience communities was important to the long-term survival of the society. Among the points made were that CAP might be better served at smaller meetings, and that it is important to participate in a broader array of meetings, including more botany-themed or marine-themed meetings, to counterbalance the recent trend towards geology-themed meetings. Ian drew attention to the demise of *Géographie physique et Quaternaire* which published lots of Quaternary palynology. He noted that *CJES* has a new editor and may be moving more towards environmental earth sciences. He suggested this might be a good venue for CAP members to publish. He suggested that a special journal issue of CAP-related papers could be viable, perhaps arising from a CAP-sponsored session such as this one at CANQUA. Florin thought it was important to look at non-pollen palynomorph issues as well, noting that amoebae or chironomids are hot topics too. Other attendees agreed, noting the wide range of indicators examined by CAP members and potential variety of publication venues. Several participants noted that younger professionals have drifted away from CAP; the Association needs to give them a reason to participate. There is concern in many professional societies about membership declines. Participants pointed out that since news is on the web and digital versions of journals are available online, there is a perception that there is no need to join a professional society anymore. However, Gail noted that with about 50 members, CAP was actually in good shape compared to many associations. Terri added that with so much information online that societies have to create a sense of community in other ways. Considerable discussion ensued. Among the suggestions were: special grad student sessions at conferences, encouraging grad students to organize conference sessions, and faculty members encouraging students to join CAP. Simon suggested another direction for CAP, by increasing information available through the website. He felt the addition of Pierre Richard's pollen identification publications on the CAP website was good and suggested that the site needs more information like this, perhaps including more links to other web resources, such as specialized databases. Charlie felt it was important that CAP consider the lack of employment opportunities for students. Schools are losing palynologists to retirement and they are not being replaced. Publicity is important to highlight the usefulness of palynology in various fields – forensic, honey, and climate studies. But where are the jobs? He felt there were problems with promoting the discipline if there is nowhere for students to go. Other participants noted that it is important for established professionals to promote palynology as a useful tool applicable to many research problems and emphasized that employment opportunities may arise in areas apparently unrelated to palynology but which provide avenues for palynological work.

12. Other business. No other business was brought forward.
13. Adjournment. After these lengthy discussions, Matthew suggested closing the meeting at 1:50 pm. Gail moved, Ian seconded, attendees agreed. Meeting adjourned.

CAP President's Report 2009

I would like to start by welcoming all new members of CAP, and greet also send my best wishes to all on this nice spring day. And I want to thank all the executive members for their work, and inputs in various discussions: I thank Mary Vetter, Alwynne Beaudoin, Terri Lacourse and Jean Nicolas Haas for volunteering their time and effort to run CAP. Thanks to Rob Fensome as well for serving as auditor.

This year's Annual General Meeting will take place on May 5th, during the CANQUA meeting at Simon Fraser University. CAP is sponsoring the session "*Putting the Ecology Back into Paleoecology*", organized by Terri Lacourse and Marlow Pellatt. The session will examine how ecology allows fossil-based Quaternary paleoenvironmental reconstruction.

Another session "*New Directions in the Use of Pollen Analysis in Environmental and Climatic Reconstructions*", organized by Matthew Peros, Sarah Finkelstein and myself, will take place on May 24th during the Toronto joint assembly.

As I write this report, various Earth Day activities are taking place to increase awareness about the fragility of our planet. We should become more aware of the Earth's beauty and of the amazingly fine-tuned interactions between all of the Earth's systems. To me, Earth Day represents the essence of St. Francis of Assisi's idea that to admire nature is equivalent to praying, something to remember as we are about to start field work, or to go back to the microscope. Palynologists play a role, minor nevertheless important, in trying to understand how our planet works.

I invite our members to read the website editor' report as many new items have been added to the CAP web page. We welcome suggestions and CAP-related contributions (please go to: http://www.scirpus.ca/cap/cap.shtml).

And speaking of field work...again...I met a former student of Jaan Terasmae 2 weeks ago. She would tell me about the difficulties she encountered when she was a graduate student in the late 1960's. Doing field work was a challenge for female students as they were required to have chaperones! I even found an article about this (Burek and Kölbl-Ebert 2007 see reference below). I did what my students do: a little search on *Google*).

Finally, preparation of the joint AASP-CAP-CPC meeting in Halifax continue. Inputs and ideas are always welcome and we hope many of our CAP members will attend this exciting meeting.

Respectfully submitted,

Elisabeth Levac
CAP President 2008-2009

Cynthia V. Burek, and Martina Kölbl-Ebert, 2007. Historical problems of travel for women geologists. Geology Today, 23: 30-32.

• • • • • •

CAP Secretary-Treasurer's Report 2009

Membership Report

As of April 19, 2009, CAP has 57 members in good standing who have paid dues for 2009. This is comparable to the 58 members we had in 2008. As we usually have a few members renewing or a few new members joining as the year progresses, CAP membership may perhaps end up being a bit higher than last year. The recovery of our

membership from the low point in 2005 appears stable.

Year	Members
2002	53
2003	54
2004	43
2005	36
2006	47
2007	51
2008	58
2009	57

I would like to extend a special welcome to new members:

Carlos Avendano, Department of Geography, University of Toronto
Josie M. Delepine, Department of Geography, University of Victoria
John-Paul Iamonaco, Department of Geography, University of Toronto
Colin Mustaphi, Laboratory for Paleoclimatology and Climatology, University of Ottawa

Financial Report

For the period ending April 19, 2009, the balance in the CAP account is $5593.75.

The following items are yet to be paid:

a) IFPS dues for 2009. Dues are $1.50 USD per member, so the amount owed at the present time is $85.50 USD (approximately $102 CAD). Our IFPS Councilor Jean Nicolas Haas will pay them and be reimbursed.
b) The student award of $200 to be presented at the 2009 AGM
c) Lunch for the 2009 AGM

The trial of accepting dues in Canadian or US funds, instituted because the Bank of Montreal eliminated fees for deposits of US cash and cheques, was successful. This has made payment of membership dues easier for our US and international members, and I believe contributed to the renewal of some lapsed memberships. This practice will continue unless the Bank of Montreal changes its fee structure.

Recommendations: Paying the outstanding commitments will still leave a healthy balance in our account. Our regular annual charges are IFPS dues ($1.50 USD per member), the annual corporation renewal fee ($25 + GST), and the new student award ($200). CAP is in a good financial position to continue to support outreach initiatives at conferences (e.g. coffee breaks) and sponsor sessions as desired.

Respectfully submitted,

Mary Vetter
CAP Secretary/Treasurer

CAP Annual Financial Statement
1 May 2008—19 April 2009

Opening Balance		**$4952.96**
Revenue	membership dues	$690.00
	interest earned	$2.32
Expenses	bank fees	$0.00
	corporation renewal	-$27.21
	postage	-$24.32
Closing Balance		**$5593.75**

The closing balance includes 66 prepaid annual memberships in the amount of $660.00

for the years 2010-2015. This will affect the income from this source for the years indicated.

Statement by Appointed Auditor:

It is my opinion that the above financial statement represents a full and fair account of the financial affairs of the Canadian Association of Palynologists for the period indicated above.

Dennis Braman
For CAP

• • • • • •

CAP Newsletter Editor's Report 2009

In April 2007, the CAP Executive decided to produce and distribute the CAP Newsletter in a electronic format. Since then, all issues of the Newsletter have been electronic. Focus can now be put on improving other aspects of the Newsletter. The December 2008 Newsletter was distributed to CAP members on November 24, 2008. It consisted of 24 pages, including a review of CAP's Special Session at GAC/MAC 2008 in honour of Pierre Richard. This edition also announced CAP's inaugural Student Research Award. The May 2009 Newsletter has not yet been sent to the members, as I am waiting for the President's Message. The Newsletter will be distributed by mid-May 2009.

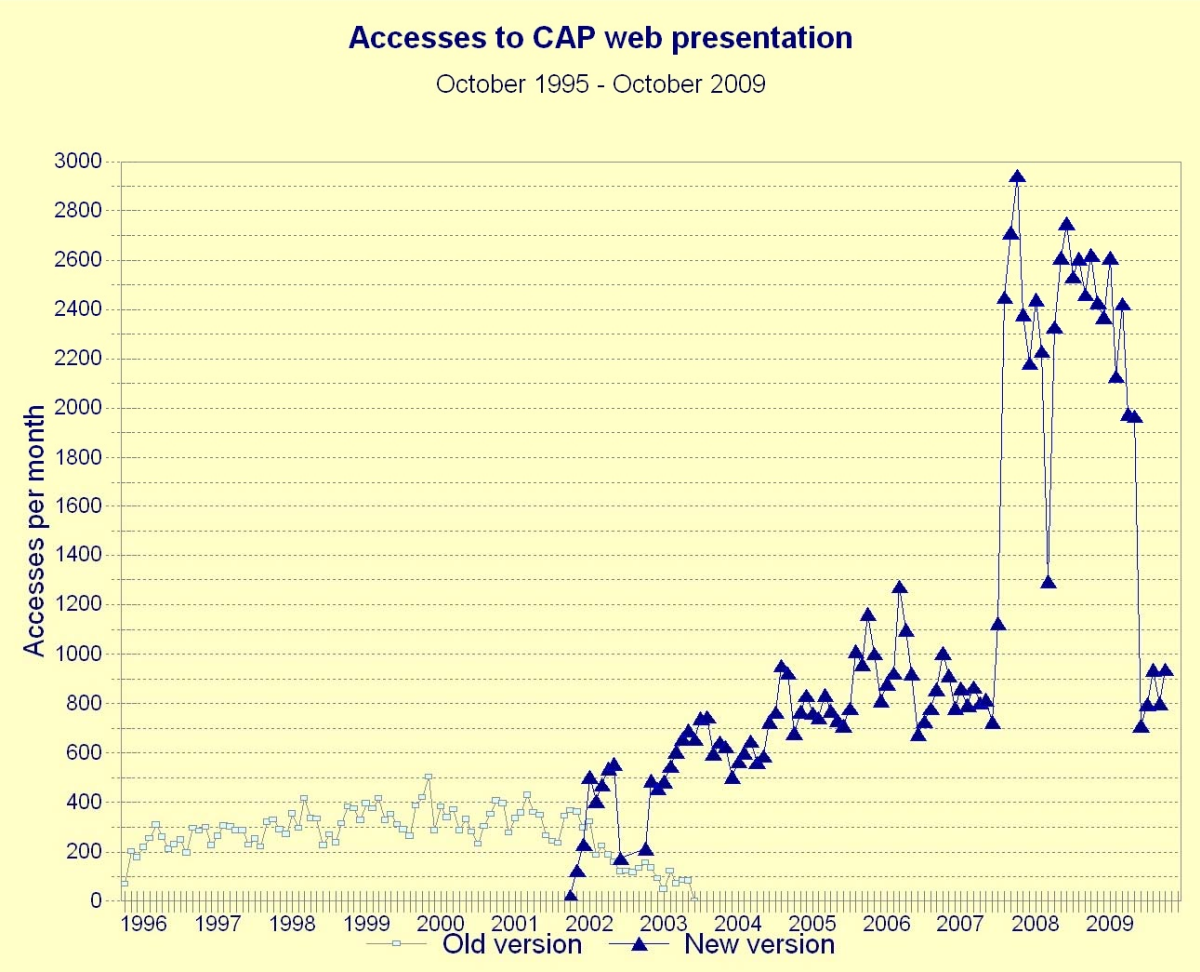
Respectfully,

Terri Lacourse
CAP Newsletter Editor

CAP Website Editor's Report 2009

I have continued as editor for the CAP website since the last AGM. The presentation is located at http://www.scirpus.ca/cap/cap.shtml, under my own domain (www.scirpus.ca). There are no costs to CAP associated with this hosting. Accesses to the presentation have continued to be relatively high, and usually exceed 2000 each month. The presentation provides various resources and information about CAP to the palynological community. I have continued to update time-sensitive sections of the presentation, such as the conference listing and various announcements, throughout the year. Back issues of recent *CAP Newsletters* (though not the latest issues) are now archived on the website, making them available to members over the long-term. I have maintained the author listing and index to past *CAP Newsletter* issues. As time permits, I have been scanning and adding older *CAP Newsletters* as PDF files to the website.

This year has also seen a major addition to the website in the form of a PDF version of Pierre Richard's *Atlas pollinique des arbres et de quelques arbustes indigènes du Québec*. The Atlas is comprehensive and richly illustrated. This publication should be of great benefit to palynologists, especially those working in eastern North America. I am very pleased to include it in CAP's web presentation. It is available through the CAP Library page at http://www.scirpus.ca/cap/library.htm. The file was provided through the good offices of Michelle Garneau and Elisabeth Levac and is distributed with the permission of the original publisher and copyright holder, the Société Provancher. The file size is quite large (14.7 MB) and I would be interested to hear if anyone has difficulty downloading it.



This year is also marks the first CAP Student Research Award. I have set up a page to provide information about the Award and the application process, as well as provide a year-to-year record of the Award recipients.

The presentation has grown considerably in the last couple of years and now includes 214 pages of information (static .htm pages) and 29 PDF files. As always, I would appreciate more CAP-related material for the web presentation. I would be pleased to receive suggestions or content for new components to broaden its appeal. If CAP members are agreeable, I am prepared to continue as the Association's Website Editor for another year.

Respectfully submitted,

Alwynne B. Beaudoin
CAP Website Editor

• • • • • •

Report on CAP Student Research Award 2009

After being formally discussed at the 2007 CAP AGM in Ottawa, the submission deadline for the first annual CAP student award passed on March 1, 2009. The award consists of $200 to be directed toward an aspect of the student's thesis or dissertation research, a three-year membership in CAP, and a certificate. Advertisements were

posted on the pollen, paleolimnology, and Quaternary e-mail listserves, on the CAP website, and in the CAP newsletter. We received three submissions; two from students at the University of Toronto and one from a student at Kiel University in Germany. The President-elect, Matthew Peros, asked for two volunteers from the CAP executive to help adjudicate the award; Terri Lacourse and Jean-Nicolas Haas agreed to do so. The winner will be formally announced at the 2009 CANQUA meeting in Vancouver in May. Following this announcement, the President-elect will provide recommendations for any potential changes to how the award is advertised, its rules, and the process by which a winner is selected. CAP thanks all those who applied.

Respectfully submitted,

Matthew C. Peros
CAP President-elect

• • • • • •

CAP Special Session in Honour of Jock McAndrews

A special CAP session entitled **"Palynology Applied to Archeological and Paleoecological Problems — A Special Session Celebrating the Career of Jock McAndrews**" is planned for the 43rd Annual Meeting of AASP to be convened jointly with CAP and CPC (Paleo Division Geological Association of Canada) at the Harbourview Holiday Inn, Halifax, Nova Scotia, Sept. 29 - Oct. 2, 2010. In light of the tremendous impact that Jock has had on palynology, this promises to be a well-attended session. I hope that Quaternary scientists and geoarcheologists in particular will take the opportunity to present a talk or a poster in this session…. and I invite former students and colleagues of Jock to provide memories and anecdotes about his career for the introductory comments.

Francine McCarthy
Earth Sciences, Brock University
fmccarthy@brocku.ca

Susann Stolze Receives 2009 CAP Student Research Award

Susann Stolze received the inaugural CAP Student Research Award, which was established in 2009 to recognize students' contributions to research in palynology. Susann's research focus is the Neolithic Landnam in Western Ireland.

Over the past few decades, archeological and paleoecological research has provided new insides into the Neolithic in Ireland. It is now recognized that the human impact on the landscape was substantial during this period, particularly in the middle and northern parts of the country, where megalithic tombs are mainly concentrated. Current research focuses on the chronology of the landnam event by the Neolithic people, the reconstruction of vegetation changes caused by the clearance of the postglacial woodland by these first settlers, and the nature of the Neolithic farming economies as these aspects of the early human activity in the Irish landscape are comparably poorly understood.

A joint research project between the Kiel University in Germany and the National University of Ireland in Galway was initiated in early 2008 to provide the first high-resolution temporal and spatial reconstruction of the vegetation history at Carrowkeel, one of Ireland's most important megalithic cemeteries. As part of the project, sediment cores were retrieved from two small lakes and the one bog site, located at various elevations ranging from the fertile lowlands to the east of Carrowkeel to the uncultivable highlands of the Bricklieve Mountains, where the passage tombs majestically overlook the surrounding lands.

Laboratory research in the past months included palynological analysis of the retrieved sediment cores, with samples being taken in one-centimeter intervals to permit the highest possible temporal resolution, complemented by the study of other proxies such as fungal spores and microcharcoal. In addition, the magnetic susceptibility and the chemical composition of the sediment cores were studied, permitting correlation between biological and physicochemical proxies that likely reflect soil erosion caused by deforestation of the landscape.

AMS dating of major events influencing the pollen spectra is currently underway to constrain the onset of the 'elm decline', the subsequent expansion of ribwort plantain and grasses during the early Neolithic, and the late Neolithic regeneration of the woodland. Comparison between the three topographically distinct study sites will unravel the chronology of the Neolithic landnam in the Carrowkeel area and the link between patterns of human activity and climatic oscillations during the Holocene.

I would like to thank the Canadian Association of Palynologists for acknowledging this research project with the inaugural CAP Student Research Award 2009.

Susann Stolze
Kiel University
Germany

Une Page Est Tournée au Laboratoire Jacques-Rousseau

Le 26 novembre 2009, c'était la fête au département de géographie de l'Université de Montréal pour souligner la retraite de trois membres du personnel de soutien. Deux d'entre eux appartenaient au Laboratoire de palynologie et de paléophytogéographie (Laboratoire Jacques-Rousseau). Il s'agit de Madame ***Nicole Morasse*** et de Monsieur ***Alayn Larouche***, tous deux associés au laboratoire depuis 1978.

Durant 31 ans, Nicole et Alayn furent le noyau dur, les piliers du laboratoire. Ils ont assuré la plus grande partie de la formation des étudiants à l'analyse pollinique (Nicole) et à l'analyse des macrorestes végétaux (Alayn). Ils ont été les artisans indispensables du *Service à la recherche en analyses pollinique et macrofossile*; à ce titre, ils ont appuyé des dizaines de chercheurs dans des disciplines variées allant de la stratigraphie quaternaire à l'archéologie, en passant par l'écologie végétale, l'écologie des perturbations, l'aéropalynologie, la mélissopalynologie, la biologie animale (insectes et mammifères), la géomorphologie, la foresterie et bien d'autres applications.

Nicole et Alayn ont assuré la cohésion des activités de recherche du laboratoire et la préservation d'un haut standard de qualité analytique durant toutes ces années. Ils ont, avec les étudiants et d'autres techniciens ayant œuvré au laboratoire durant des périodes plus courtes, enrichi les collections de référence et les banques de données polliniques et macrofossiles. Ils laissent un héritage

De gauche à droite: Paul Comtois, Alayn Larouche, Nicole Morasse et Pierre Richard. Paul est aérobiologiste et le Directeur du Département de Géographie de l'Université de Montréal. Photo: Nathalie Désilets.

précieux sur lequel pourront compter ceux qui poursuivront la mission du laboratoire dans l'avenir. Une partie de cet héritage est accessible via la *North American Pollen Database*, ou via la *North American Plant Macrofossil Database*.

Alayn et Nicole ont aussi assuré la plus grande part de la gestion quotidienne du laboratoire, durant toutes ces années. De multiples façons, ils ont participé à l'avancement de la recherche. Alayn s'est par exemple impliqué dans la constitution de la base de données polliniques du Québec et ce, bien avant l'avènement de la microinformatique; nos échanges avec John Keltner et Eric Grimm ont par la suite conduit au format actuel de la NAPD.

À titre de chercheur et de directeur du laboratoire, je suis reconnaissant de leur appui indéfectible au cours des ans. Je suis conscient d'avoir été choyé; peu d'universitaires ont pu comme moi compter sur un personnel de soutien stable au fil des ans. Ensemble, nous avons formé une équipe soudée, enthousiaste, dévouée principalement à la promotion des recherches paléoécologiques s'appuyant sur l'analyse pollinique et sur l'analyse macrofossile. Les réalisations du laboratoire sont nombreuses mais les projets, amorcés ou imaginés durant toutes ces années sont encore plus nombreux! Il est réconfortant de savoir que la palynologie a encore bien du pain sur la planche, un bel avenir de découvertes.

Tous mes vœux accompagnent Alayn et Nicole, durant leur retraite bien méritée. Le rire communicatif de Nicole nous manquera toujours. La bonne humeur et le dévouement d'Alayn restera inégalé. Une page est tournée au Laboratoire Jacques-Rousseau.

Pierre J.H. Richard
Professeur
Directeur du Laboratoire Jacques-Rousseau

PUTTING ECOLOGY BACK INTO PALEOECOLOGY: A CAP-Sponsored Special Session at CANQUA 2009

In May 2009, the Canadian Association of Palynologists sponsored a special conference session at the 2009 meeting of the Canadian Quaternary Association (CANQUA) at Simon Fraser University in Burnaby, British Columbia, Canada. This session, entitled "*Putting the Ecology Back into Paleoecology*", focused on the application of palynological and paleoecological techniques towards understanding long-term ecosystem structure and function. The intent of this session was to turn attention back towards the ecological component of Quaternary science, which is often neglected in paleoecological studies in lieu of a focus on climate change reconstruction and paleoenvironmental inference. The session highlighted recent and ongoing paleoecological research from across North America and included talks on using paleoecological data in ecosystem conservation, and in understanding disturbance regimes, productivity, community assembly, and vegetation succession. The session built nicely on the previous day's session on the late-glacial biogeography of the Pacific Northwest region of North America and demonstrated clearly that the ecological component of Quaternary science is alive and well. The session began with some opening remarks from the Session Chair, Terri Lacourse, explaining the impetus for the session. The idea for the session came on the heels of a discussion with Marlow Pellatt

(Parks Canada) about the apparent preoccupation of paleoecologists with climate change and the lack of focus on the ecological information contained within Quaternary data. Biotic remains such as fossil pollen are often the best means to make inferences about paleoenvironment and paleoclimate. However, the application of paleoecological studies to questions about climate change has in some ways resulted in the neglect of using these same biotic remains to examine past ecosystem structure and function. The CAP-sponsored session was intended to bring some focus back to using paleoecological techniques to understand ecosystem dynamics and properties.

The opening address was given by Marlow Pellatt, who spoke on: *Can paleoenvironmental studies help conservation ecologists restore ecosystems and manage for ecological integrity?* Marlow's talk emphasized the need for conservation ecologists to recognize that paleo-data are the only sources of empirical data that allow us to examine ecosystem response to environmental change at the magnitude projected by global climate models. Marlow presented some of his recent research conducted on Canada's Pacific coast that uses a multiproxy approach (fossil pollen and charcoal analysis, dendroecology, plant ecology, and bioclimate envelope modeling) applied to the assessment of ecosystem change and specifically the conservation of endangered Garry Oak ecosystems. His work demonstrated clearly the applicability of paleoecological research to the development of restoration projects and management plans. This opening talk brilliantly set the context for the remaining session talks.

Session speakers were:

Alexandra Gerber: *A Holocene-scale Analysis of Forest Fire Regimes Near St.-Lawrence Islands National Park, Ontario, Using Charcoal as a Paleoindicator*. Alexandra has worked diligently to produce Holocene records of forest fire activity that complement historic records of the past 100 years. Together, these will be used to make recommendations for land management including prescribed burning.

Rolf Mathewes: *Comparing Historic Anthropogenic Disturbance and Paleoenvironmental Changes Using Modern and Fossil Pollen from a Temperate Rainforest*. Rolf's talk on the recent history of forest disturbance highlighted the potential for misinterpreting changes in pollen records as climate-driven, rather than disturbance driven.

Terri Lacourse: *The Role of Life History Variation in Postglacial Vegetation Dynamics.* Using various multivariate statistical analyses and fossils pollen records, Terri presented significant correlations between plant species traits and paleoenvironmental change and demonstrated that long-term forest composition is constrained through interspecific differences in plant traits.

Gail Chmura: *Reconstructing Wetland Succession on Rebounding Coastlines Using Modern Analogues*. In the context of wetland succession, Gail underscored the importance of modern calibration studies for accurate interpretation of fossil pollen assemblages and geochemical data.

Vera Pospelova: *Late Quaternary Climate and Marine Productivity Changes Along the California Margin*. In an elegant study using dinoflagellate cysts, Vera demonstrated clearly a strong response in marine productivity to large-scale shifts in climate and ocean circulation over the past 42,000 years.

Richard Hebda: *Timing and Environments of the Olympia Non-Glacial Interval in the Fraser Lowland of British Columbia.* Richard gave a very enthusiastic talk on the results of pollen analyses that reveal a >22,000 yr record of vegetation just 300km inside the limit of the Late Wisconsin Cordilleran ice sheet. It was an energizing note to end the session on.

Poster presentations were:

Alwynne Beaudoin: *The Value of Reference Collections in Paleoecology*. Alwynne described collection, processing, and storage methods for pollen and seed reference collections and offered helpful advice for researchers establishing permanent reference collections.

Svetlana Esenkulova: *Dinoflagellate Cyst Production in the Central Strait of Georgia (BC, Canada) in Response to 1997-98 El-Niño Event*. Svetlana's poster outlined the effect of El-Niño events on the abundance, composition, and diversity of dinoflagellate cysts in coastal British Columbia.

Simon Goring: *How Sensitive are Pollen-based Climate Models to Large-scale Vegetation Change? An Example from Marion Lake, British Columbia*. Simon presented the results of pollen-based climate models from the same site as Rolf's study and showed that pollen-based climate reconstructions from that site are not biased by the effects of recent logging.

Alanna Krepakevich: *The Impact of Sewage Discharge on Coastal Bays of Southern Vancouver Island (BC, Canada) Reflected in Phytoplankton Sedimentary Records*. Alanna's poster described the use of dinoflagellate cysts and biogenic silica for assessing past and present estuarine health.

Diana Tirlea: *Climate-Mediated Terrestrial-Aquatic Linkages in Small Alpine Catchments in Banff National Park, Alberta*. Diana presented intriguing preliminary results on pollen and algal pigment analyses aimed at assessing the relationship between pollen input and primary productivity in alpine lakes. Diana also explored the impact of different sample storage methods (freezing vs. freeze-drying) on pollen preservation and found no significant differences in pollen degradation.

All of the presentations were of a high standard and were very well attended. The session generated substantial discussion and inspired debate at the CANQUA conference. The session attracted a multidisciplinary audience and highlighted paleoecological research in an engaging manner. A CANQUA attendee, who is a geomorphologist and shall remain nameless, said that he usually skips the "pollen talks" at conferences, but was very glad to have sat in on the entire session. All agreed that it was a success. On behalf of the participants, I thank the Canadian Association of Palynologists for its sponsorship.

Terri Lacourse
University of Victoria
tlacours@uvic.ca

Marlow Pellatt
Parks Canada
marlow.pellatt@pc.gc.ca

Nova Scotia 2010

Joint Meeting of AASP-The Palynological Society, the Geological Association of Canada Paleontology Division, and CAP- Canadian Association of Palynologists

September 29th to October 2nd, 2010
Harbourview Holiday Inn, Dartmouth, Nova Scotia

Local Organizing Committee: Rob Fensome, Peta Mudie and Graham Williams, Geological Survey of Canada, Bedford Institute of Oceanography, Dartmouth, Nova Scotia

Society Representatives:
For AASP-TPS — Francine McCarthy, Brock University, St. Catharines, Ontario;
For GACPD — Mike Melchin, St. Francis Xavier University, Antigonish, Nova Scotia; For CAP — Elisabeth Levac, Bishops University, Sherbrooke, Quebec.

Location: The meeting will be held at the Harbourview Holiday Inn in Dartmouth, Nova Scotia, with a modern conference centre overlooking the Halifax skyline across Halifax Harbour. The Inn is minutes away from buses and ferries that take visitors directly to historic downtown and waterfront Halifax, with its many dining venues to suit all tastes, a variety of traditional pubs (some with their own brews), and opportunities for harbour cruises. The hotel is also across the road from a sports complex, including swimming pool and gym; and close to downtown Dartmouth with its own waterfront attractions, restaurants and pubs. Dartmouth is known as the City of Lakes and is the starting point of the historic Shubenacadie Canal, a Nineteenth Century link between the Atlantic and the Bay of Fundy. Short bus rides or drives take the visitor to the seashore and attractive waterside walks. Autumn foliage should be in its early stages at the time of the meeting, and the weather is usually (but not always) fine and cool in early fall, so participants should bring layers of clothes to adapt to changing temperatures.

Costs: Registration is expected to be $200 CDN. The hotel rate at Harbourview Holiday Inn Hotel will be $149 plus taxes per person for single or double occupancy, with $15 for additional beds. Door-to-door airport bus transport from Halifax International Airport is $21.

Meeting Events: The social program includes an opening night "Meet and Greet" and public lecture. Natalia Rybczynski of the Canadian Museum of Nature has agreed to give the public talk on new Cenozoic mammals from the Arctic, and the Arctic's role as an evolutionary pump. Natalia is an excellent speaker and has been involved with exciting Arctic finds, including the preserved remains of a beaver dam. A dinner is planned for GAC Paleo Division and business lunches for CAP and AASP, accompanied by traditional Nova Scotian Town Crier, bagpipers and the Order of Good Cheer awards. Dependent on interest and availability, a mid-conference harbour cruise aboard the sternwheeler Harbour Queen will be planned.

Technical Sessions: The planned technical program will accommodate more than 60 talks (with two concurrent sessions), including keynotes. The sessions will include:

1) Paleontology of the Arctic. Convenor Mike Melchin. This session is intended to include papers on any part of the Phanerozoic and throughout the Arctic, not just North America.

2) New approaches to Cenozoic paleoenvironments. Co-convenors Henk Brinkhuis and Appy Sliujs. This session will probably focus on Cenozoic climate cycles, greenhouse warming and geochemical signals of these events.

3) Palynology applied to archaeological and paleoecological problems — a special session in honour of Jock McAndrews. Convener Francine McCarthy. The amazingly versatile palynological career of Jock McAndrews and his students has covered the spectrum from Holocene freshwater dinocysts and other non-pollen palynomorphs, through the archaeopalynology of mammoth skulls and varved lake sediments to volumes on modern pollen morphology and identification. In celebration, a keynote talk will be given by Roger Byrne from the University of California at Berkeley, Jock's first post-doctoral associate and co-worker at Crawford Lake in 1973. Roger is now studying wildfire records and human impacts of landscapes using varved marine sediments off California and Mexico.

4) Frontiers in Paleobiology. Co-conveners Rob Fensome and TBA. One focus of this session will be the integration of molecular and fossil data, and several potential speakers have been approached on this topic — Kazumi Matsuoka will give a keynote talk on DNA and the classification Pleistocene – Recent dinocysts. Another topic may be interpretation of paleoenvironments for the Burgess Shale and other Lagerstätte.

5) Forensic Palynology. Co-conveners Vaughn Bryant and Peta Mudie. By popular request, based on the enthusiasm shown at the 2009 meeting of AASP in Tennessee meeting, we will include a session on forensic palynology, including studies of the diets of ancient frozen bodies. As well as presentations from leading US expert Vaughn Bryant, we plan to invite other speakers of international stature.

6) General sessions. Convener Elisabeth Levac. Here anything goes but contributions with an industrial slant or that focus on exciting new finds in Canadian paleontology are especially encouraged.

Field Trips: Two field trips are being planned, both on Saturday October 2nd. At the moment, participant costs are about $100 Canadian for each trip, inclusive of lunches and museum entrance fees, based on a minimum of 20 and a maximum of 29 people per trip.

Field Trip 1 --- Bay of Fundy: Parrsboro Shore and Joggins Fossil Cliffs

We will head to the shores of the Bay of Fundy, major stops being in the Five Islands-Parrsboro area and Joggins, the latter designated a UNESCO World Heritage site in 2008 for its spectacular late Carboniferous (Pennsylvanian) succession exposed in the famous "Fossil Cliffs". The trip's coordinators will be Rob Fensome and Graham Williams, with various experts "chipping in" along the way. We will leave the hotel at 8.00 am and head to the north shore of the Minas Basin, where we will explore either the Mesozoic rocks at Five Islands or the mid Carboniferous section at East Bay, Parrsboro, the choice depending on tide constraints. The first underwater turbines for tidal power generation in North America are currently being installed in the Bay of Fundy near Parrsboro. The site has been chosen because offshore is the Minas Channel, through which more water flows during a tide change than the water flowing from all the world's estuaries during equivalent time. We will eat lunch at the Fundy Geological Museum, which highlights Canada's oldest-known dinosaurs.

In the afternoon, on the way to Joggins, we will stop at the Cobequid-Chedabucto fault, Nova Scotia's ancient answer to the San Andreas Fault (though no longer active). Once at Joggins, we guarantee low tide and the possibility to explore both the exciting new Joggins Fossil Centre and the cliffs. This part of the trip will be coordinated by Melissa Grey, Science and Education Coordinator at the Joggins Fossil Centre. Joggins was the haunt of Victorian geological superstars William Dawson, Charles Lyell, Abraham Gesner (discoverer of kerosene) and William Logan (first director of the GSC). The site was also mentioned in the Darwin's Origin of Species, and is associated with coal mining and Canadian confederation. All of this historical interest is in addition to the fact that it is home to the world's earliest known reptiles and land snails, and spectacular fossil tree trunks (if erosion cooperates). There is also a till section for Quaternary

enthusiasts. We will take "tea" at the Joggins Fossil Centre and thence return to Dartmouth via the Trans-Canada Highway and Veterans Memorial Highway. This will be a long day trip and participants should not plan on taking an evening flight.

Field Trip 2 --- Nova Scotia's Atlantic Shore: Quaternary and Environmental Geology

This field trip will explore Nova Scotia's Atlantic Shore, focusing on Quaternary and environmental geology. The coordinator will be Peta Mudie, and leaders at particular sites will include geologists Ralph Stea, Bob Taylor, Mike Parsons, Peter Giles and archaeologist Roger Lewis. This trip will also leave the hotel at 8 am. First stop will be West Lawrencetown, where we will see a wave-eroded section of a drumlin with older Hartlen and younger Lawrencetown tills, and Cambrian bedrock outcrops with glaciated grooves and striations. The drive will then take us along the coast to the Chezzetcook drumlin field and salt marsh, via Minesville abandoned gold mine, with its ongoing history of arsenic and mercury pollution from tailings. At Chezzetcook, we will view vegetation zonation and explore the history of the salt marsh.

The trip will then continue to Peggy's Cove, southwest of Halifax, where (weather permitting) we will eat lunch near Peggy's Cove lighthouse perched on glacier-scoured Devonian granite, part of the South Mountain Batholith, the largest granitic body in the Appalachian Orogen. The unique landscape of Peggy's Cove and surrounding areas was produced by the Wisconsinan glaciation. On retreat of the ice, rising sea level filled the scoured areas, forming an endless array of coves and inlets now hosting an endemic ice-age relic flora and ponds filled with bog moss, sundew and pitcher plants.

On the return trip, we will first examine exposures of Mississippian Windsor Formation shell-bearing carbonates near Glen Margaret, then explore the Quaternary geology and archaeology of eastern St. Margaret's Bay, and visit one of the last remaining Mi'kmaq shell middens on Indian Point where the coast is rapidly changing from erosion and urban development. Roger Lewis, of the Nova Scotia Museum of Natural History, will talk about the history of Mi'kmaq archaeological sites in the region before our return to Dartmouth.

Don't miss all the stimulating and fun events at Nova Scotia 2010 — registration will be available in spring 2010. Contact Rob Fensome (rfensome@nrcan.gc.ca), Peta Mudie (pmudie@nrcan.gc.ca) or Graham Williams (graham.williams@nrcan.gc.ca) for more details and updates.

CAP-Sponsored Special Session at the 2009 Joint Assembly of the American Geophysical Union

(Very) early on the morning of Sunday, May 24, 2009, several dozen palynology enthusiasts gathered in a sub-basement of the Toronto Convention Centre to participate in the CAP-sponsored session: **New directions in the use of pollen analysis in environmental and climatic reconstructions**, organized by Matthew Peros (University of Ottawa), Sarah Finkelstein (University of Toronto), and Elisabeth Levac (Bishop's University). The motive behind the session was to bring together scholars working on leading-edge, quantitative-oriented topics in palynology. We were pleased to receive eight abstracts, although because of teaching commitments, only six speakers were able to attend. Audience members were treated to the following talks:

Holocene and Last Interglacial Cloudiness in Eastern Baffin Island, Arctic Canada, by Bianca Fréchette and Anne de Vernal (UQAM), and Pierre Richard (Université de Montréal). Bianca discussed her recently-published research focused on developing a palynological method for reconstructing cloudiness (or, conversely, sunshine), which is an important variable determining plant type and density in high-latitude environments. Her study demonstrated that growing season sunshine conditions can be reconstructed from arctic pollen assemblages, thus providing information on feedbacks associated with cloud cover and summer temperatures, and therefore growing season length.

Space-time evolution of the climate of northern Canada and Alaska during the Holocene, by André Viau and Konrad Gajewski (University of Ottawa). André, a leader in the area of data modeling and paleoclimatology, presented a series of space-time maps documenting summer temperature and annual precipitation values across northern North America from the late Glacial to the present. Among his most important findings was information on the spatial structure of the Medieval Warm Period and Little Ice Age, and how these events manifested themselves differently in continental and marginal-marine locations.

Large-scale paleoenvironmental analyses using pollen databases, by Konrad Gajewski, Matthew Peros, and Samuel Munoz (University of Ottawa). A large component of Konrad's research program has been the use and development of large pollen databases to study past climatic variability. In his talk, Konrad reviewed recent research undertaken by his laboratory members and colleagues illustrating the nature of Holocene climatic variability. In addition to paleoclimate reconstructions, Konrad also discussed how these databases can be used for other paleoenvironmental analyses, including analysis of carbon dynamics in ecosystems through time.

Testing the reliability of pollen-based diversity estimates, by Matthew Peros and Konrad Gajewski (University of Ottawa). An objective of a number of palynological studies has been to understand how biodiversity has changed through time. While a range of numerical methods has been developed to infer past floral diversity from pollen data, the limitations of such methods are poorly understood. Matthew presented results from a recently published paper showing that rare-

faction analysis—used to derive values of richness from standardized counts—is highly influenced by pollen evenness and concentration, potentially throwing doubt into the conclusions of several recent studies.

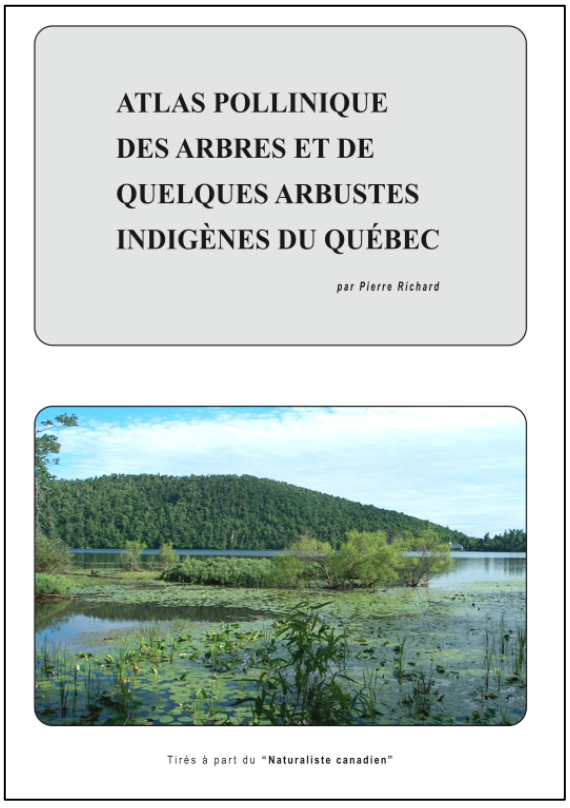
Reconstructing Paleoclimate and Historical Terrestrial Carbon Storage from Pollen Data Using Inverse Modelling Approach, by Changhui Peng and H. Wu (UQAM), Jöel Guiot (CNRS), and Z. Guo (Chinese Academy of Sciences). A long-standing discrepancy exists between long-term reconstructions of paleocarbon storage undertaken by pollen, carbon isotope, and general circulation model (GCM) methods. In this study, Changhui and colleagues presented a new estimate of past biospheric carbon stocks using a new paleocarbon model (PCM). The results of his work demonstrate the reliability and feasibility of this paleoclimate reconstruction method and its efficiency in reconstructing historical terrestrial carbon storage.

High-Resolution Pollen Records From the Southern Boreal Forest/Aspen Parkland Ecotone in Saskatchewan, Canada, by Jeannine St. Jacques, Catherine Hart, Mary Vetter, and Dave Sauchyn (University of Regina), and Jock McAndrews (Royal Ontario Museum). Here, Jeannine and her co-authors presented several high resolution pollen records from the southern boreal forest in Saskatchewan. Their results showed that high-resolution pollen can detect centennial-scale climate changes, as well as major forest fire frequency, and is generally consistent with dendrological studies undertaken in the region.

We would like to express our sincere thanks to all the speakers who participated in the session—the quality of the science was outstanding. Also, we thank all those in attendance for participating and for lively discussion. Discussion continued in a less formal setting over curry at Little India on Queen Street. Overall, convening the session was a very rewarding experience. If you are interested in convening a session at a national or international conference and having CAP sponsor the session, please get in touch with a member of the CAP Executive.

Matthew Peros
Sarah Finkelstein
Elisabeth Levac

• • • • • •



Pierre Richard's 1970 *Atlas Pollinique* (Le Naturaliste canadien, vol. 97) is now available as a PDF from the CAP website: www.scirpus.ca/cap/library.htm

Dissertation Abstracts

Bringué, Manuel. 2009. *Paléocéanographie et variabilité climatique sur le talus du Mackenzie (mer de Beaufort, Arctique Canadien) au cours de l'Holocène récent.* M.Sc. Thèse. Institut des Sciences de la Mer de Rimouski, Université du Québec à Rimouski.

Dirigé par Dr. André Rochon

Une séquence sédimentaire prélevée sur le talus du Mackenzie (station CASES 2004-804-803, mer de Beaufort, Arctique canadien) à 218 m de profondeur a permis de documenter la variabilité hydroclimatique au cours des derniers 4600 ans à cet emplacement clé de l'Arctique occidental. La sédimentation y est à la fois influencée par la gyre de Beaufort (impliquée dans le transport des glaces et dans les principaux modes de variabilité hydroclimatiques telle l'Oscillation arctique) et la décharge sédimentaire du Mackenzie, de loin le plus important tributaire de l'Océan Arctique.

La chronologie de la carotte à piston (longueur: ~ 6 m) a été déterminée sur la base de quatre datations AMS-^{14}C sur des coquilles de bivalves. Le taux de sédimentation résultant est extrêmement similaire à celui estimé à partir de mesures d'activité de ^{210}Pb sur les premiers 20 cm de la carotte boîte. La carotte à gravité ayant été corrélée stratigraphiquement à la carotte à piston, on obtient une séquence composite complète couvrant les derniers 4600 ans, avec un taux d'accumulation constant de 140 cm.ka^{-1}.

Les reconstitutions quantitatives des paramètres océaniques de surface (température et salinité de surface en août, durée du couvert de glace) ont été estimées à partir des assemblages de kystes de dinoflagellés dans les sédiments en utilisant des fonctions de transfert (méthode des meilleurs analogues modernes). Celles-ci indiquent des conditions de surface relativement stables au cours des derniers 4600 ans. Cependant, des refroidissements épisodiques d'environ 1,5°C sous la valeur actuelle (5,9°C) sont enregistrés entre 700 et 1820 AD, possiblement reliés à l'advection d'eau pacifique froide (valeurs négatives de l'index PDO – *Pacific Decadal Oscillation*). Nous associons le dernier et le plus long de ces refroidissements (1560-1820 AD) avec le Petit Âge Glaciaire. De 1920 à 2004 AD, des variations récurrentes de salinité de surface (oscillant entre ~21 et 27 psu) peuvent être associées au mécanisme d'accumulation d'eau douce par la gyre de Beaufort pendant les régimes de circulation atmosphérique anticyclonique. Nos données indiquent également que des accumulations d'eau douce similaires (qui précèdent les anomalies de salinité documentées dans l'Atlantique Nord) ont pu survenir vers 1790 et 1860 AD.

Les données isotopiques (δ^{13}C et δ^{15}N) indiquent une lente augmentation de l'influence marine (vs terrestre) dans l'origine de la matière organique au cours de l'Holocène récent. Cette variation est attribuable au rehaussement du niveau marin relatif dans la région du delta du Mackenzie, une région côtière particulièrement vulnérable à l'érosion. Nos données suggèrent également que le taux de transgression marine s'est intensifié depuis 1820 AD. Entre 4600 et 1300 cal avant aujourd'hui, des variations séculaires de l'Oscillation arctique sont enregistrées par les mesures de δ^{15}N qui mettent en évidence des modifications de l'influence de l'eau

pacifique au site d'étude.

Ainsi, cette étude à haute résolution a permis de documenter la variabilité hydroclimatique arctique au-delà des mesures instrumentales récentes. Des changements hydrographiques importants ont pu être mis en évidence au sein de la stabilité climatique relative de l'Holocène récent.

• • • • • •

Hart, Catherine L. 2009. *High-resolution pollen analysis of two lakes at the Boreal Forest-Aspen Parkland ecotone in central Saskatchewan, Canada.* M.Sc. Thesis. Dept. of Biology, University of Regina.

Supervised by Dr. Mary Vetter

It is now generally accepted that the earth is experiencing changes in climate due to anthropogenic effects. These changes affect the growth and pattern of vegetation across the globe. In central and northern Saskatchewan it is believed that there will be changes in the current climate conditions that will affect the distribution and productivity of the aspen parkland and boreal forest. To assess the changes in these communities and climate in the past, sediment cores were collected from two lakes in the southern boreal forest – aspen parkland ecotone. High-resolution pollen analyses were carried out on both cores to determine the changes in pollen abundances over a period of approximately 2000 years at one lake and 500 years at the other. At high resolution it was possible to observe both short term changes in vegetation as well as changes in pollen production, and to assess the value of high-resolution pollen analyses. In addition to the sediment cores, modern pollen assemblage and environmental variable information was compiled from previously published studies and Canadian and US climate records to develop a model to reconstruct select climate variables from fossil pollen assemblages. CONISS cluster analysis, to determine patterns of similarity of samples over time, and principal components analysis, to help interpret vegetation changes over time, were also performed. Results suggest that the objectives of a study should be considered when selecting an appropriate resolution for pollen analysis work. The relatively lower resolution record from North Flat Lake was found to be appropriate for assessing changes in vegetation as well as longer term changes in climate whereas the higher resolution record from L03 was more appropriate for assessing changes in plant productivity and characterizing short term changes in climate and disturbance patterns.

• • • • • •

Ledu, David. 2009. *Reconstitution de la variabilité climatique dans l'axe principal du Passage du Nord-Ouest au cours de l'Holocène.* Ph.D. Thèse. Institut des Sciences de la Mer de Rimouski, Université du Québec à Rimouski.

Dirigé par Dr. André Rochon

Des analyses palynologiques et géochimiques ont été réalisées sur trois carottes sédimentaires prélevées, dans les détroits de Lancaster, Barrow et Dease, le long de l'axe principal du passage du Nord-Ouest (APPNO). La chronologie des carottes sédimentaires est basée sur l'utilisation combinée d'âges radiocarbones et de corrélations magnétostratigraphiques. Les

modèles d'âge indiquent que les carottes sédimentaires des détroits de Lancaster, Barrow et Dease couvrent respectivement les derniers 11,1, 10,8 et 7,7 ka calibrées BP. Les taux de sédimentation calculés sont compris entre 43 et 140 cm/ka pour le détroit de Lancaster et entre 15 et 118 cm/ka pour le détroit de Barrow. Un taux de sédimentation constant de 61 cm/ka caractérise le site du détroit de Dease. L'application de la technique des analogues modernes aux assemblages de kystes de dinoflagellés (dinokystes) a permis des estimations quantitatives des paramètres de surface (température, salinité et durée du couvert de glace) pour les trois séquences sédimentaires couvrant la quasi-totalité des 10 000 dernières années. L' Holocène ancien (entre ~11 et ~8,5 ka calibrées BP) est marquée par des conditions instables avec d'importants apports terrigènes. Au détroit de Lancaster, cet intervalle se caractérise par une absence de dinokystes accompagnée d'importants apports terrigènes entre 11,1 et 10,8 ka calibrées BP suivie de conditions relativement froides comparées aux conditions modernes avec dominance des taxons hétérotrophes. Au détroit de Barrow, l'intervalle entre ~11 et ~8,5 ka calibrées BP est caractérisé dans son ensemble par d'importants apports terrigènes avec des températures (août) relativement froides comparées aux conditions modernes, et un couvert de glace fluctuant autour des valeurs modernes. De telles conditions, enregistrées aux détroits de Lancaster et de Barrow sont associées aux derniers stades de la déglaciation inuitienne dans la région. En particulier, la présence de courants de glace actifs jusqu'à environ 8,5 ka calibrées BP au niveau du bassin de Kane et du détroit de Smith pourrait avoir contribuée aux conditions froides enregistrées au détroit de Lancaster. La présence d'un courant de glace dans le chenal de Wellington accompagnée par un maximum d'épaisseur de glace dans le centre de l'archipel arctique canadien expliquent probablement l'importance des apports terrigènes pendant plus de 2000 ans au niveau du détroit de Barrow.

La comparaison des reconstitutions quantitatives des paramètres de surface entre les trois sites à partir de ~8 ka calibrées BP jusqu'à l'Holocène récent a permis de mieux comprendre la nature et la variabilité du gradient climatique est-ouest caractéristique du réchauffement climatique actuel dans l'Arctique. Ce gradient, dont la présence a été documentée dès le début de l'Holocène entre la baie de Baffin, la mer de Beaufort et de Chukchi, n'avait encore jamais été étudié le long de l'APPNO sur une base quantitative. Les résultats de cette recherche indiquent une variabilité climatique relativement importante à l'échelle millénaire le long de l'APPNO. L'Holocène moyen apparaît comme une période de transition importante. Durant cet intervalle, les enregistrements du détroit de Dease suggèrent la mise en place du courant du Mackenzie dans sa configuration moderne. Des changements marqués des conditions de surface sont également enregistrés de manière synchronique au niveau des trois sites. Cette période de transition est associée à un changement de phase de l'oscillation arctique (OA^+ vers OA^-). La comparaison du $\delta^{18}O$ d'une carotte de glace prélevée sur l'île de Devon avec la température reconstituée (août) du détroit de Lancaster suggère, en effet, un fort couplage atmosphère-océan durant la quasi-totalité de l'Holocène similaire aux effets de l'oscillation arctique. Cette dernière pourrait avoir opéré à l'échelle millénaire depuis le début de l'Holocène. Cependant, les estimations quantitatives des conditions de surface pour les détroits de Lancaster et de Dease indiquent que la durée saisonnière du couvert de glace a été plus importante que les conditions modernes

durant la quasi-totalité de l'Holocène. Ces résultats indiquent que le gradient climatique est-ouest est plus complexe qu'une simple opposition dipolaire entre le secteur oriental et occidental de l'archipel arctique canadien (AAC). Des facteurs locaux incluant que la proximité de glaciers, la présence de courants de côte ou la structure de l'halocline peuvent avoir amplifié, atténué ou renversé le signal climatique de mécanismes supra-régionaux tels que l'oscillation arctique.

• • • • • •

Palynolit

Charles Darwin and the Thrill of Discovery

Charles Darwin spent three years (1828-1831) as a student at Cambridge University, years that he later described as "the most joyful in my happy life". By his own account, however, he did not pay much attention to classes but spent much of his time in outdoor pursuits, especially shooting, hunting, riding, and collecting beetles. However, he was impressed with one of his professors, John Henslow, who taught botany. Henslow became a mentor to Darwin and an important influence in his scientific life for many years. Indeed, it was largely through Henslow's influence that Darwin was offered the opportunity to join the *Beagle* voyage and it was to Henslow that he sent most of his specimens as he collected them throughout that journey. Darwin clearly regarded Henslow with great affection and describes him a good-natured man and a good teacher. In his *Autobiography*, Darwin gives an example of Henslow's approach to teaching in the following account:

> I cannot resist mentioning a trifling incident, which showed his kind consideration. Whilst examining some pollen-grains on a damp surface I saw the tubes exerted, and instantly rushed off to communicate my surprising discovery to him, Now I do not suppose any other Professor of Botany could help laughing at my coming in such a hurry to make such a communication. But he agreed how interesting the phenomenon was, and explained its meaning, but made me clearly understand how well it was known; so I left him not in the least mortified, but well pleased at having discovered for myself so remarkable a fact, but determined not to be in such a hurry again to communicate my discoveries. [From Barlow, Nora, editor (1969) *The Autobiography of Charles Darwin* 1809-1882, p. 66. W.W. Norton and Co., New York.]

One can speculate, of course, as to how far this early lesson of caution in communicating discovery may have influenced Darwin's procrastination in publishing his ideas on the transmutation of species. It is well known that he spent many years in research and thought before finally being spurred to publication by the arrival of an essay from Alfred Russel Wallace, which uncannily mirrored his ideas. This year, 2009, we celebrate both the bicentennial of Darwin's birth (February 12 1809) and the 150th anniversary (November 24 1859) of the publication his book *On the Origin of Species*, by any standards one of the most influential science books ever written.

Alwynne B. Beaudoin
Edmonton, Alberta

Recent Publications —27

Ali, A.A., Carcaillet, C., and Bergeron, Y. 2009. Long-term fire frequency variability in the eastern Canadian boreal forest: the influences of climate vs. local factors. *Global Change Biology* 15:1230-1241.

Antoniades, D., Douglas, M.S.V., and *Smol, J.P. 2009. Biogeographic distributions and environmental controls of stream diatoms in the Canadian Arctic Archipelago. *Canadian Journal of Botany* 87:443-454.

Bunbury, J., and *Gajewski, K. 2009. Postglacial climates inferred from a lake at treeline, southwest Yukon Territory, Canada. *Quaternary Science Reviews* 28:354-369.

Cordova, C.E., Harrison, S.P., Ortiz, N., *Mudie, P.J., Simakova, A.N., Riehl, S., and Leroy, S.A.G. 2009. Pollen, plant macrofossil and charcoal records for paleovegetation reconstruction in the Black Sea-Mediterranean Corridor since the last glacial maximum. *Quaternary International* 197: 12-26.

Dormoy, I., Peyron, O., Combourieu-Neboutb, N., *Goring, S., Kotthoff, U., Magny, M., and Pross, J. 2009. Terrestrial climate variability and seasonality changes in the Mediterranean region between 15000 and 4000 years BP deduced from marine pollen records. *Climate of the Past Discussion* 5: 735-770.

Enache, M.D., and *Cumming, B.F. 2009. Extreme fires under warmer and drier conditions inferred from sedimentary charcoal morphotypes from Opatcho Lake, central British Columbia, Canada. *The Holocene* 19:835-846.

Fortin, M.-C. and *Gajewski, K. 2009. Holocene climate change and its effect on lake ecosystem production in northern Victoria Island, Canadian Arctic. *Journal of Paleolimnology* DOI: 10.1007/s10933-009-9326-7

*Gajewski, K., *Peros, M., *Finkelstein, S. and Fortin, M. 2009. Holocene paleoclimate of the Canadian Arctic Islands: The ACVAST project. *PAGES News* 17:11-13.

*Galloway, J.M., Doherty, C.T., Patterson, R.T., and Roe, H.M. 2009. Postglacial vegetation and climate dynamics in the Seymour-Belize Inlet Complex, central coastal British Columbia, Canada: palynological evidence from Tiny Lake. *Journal of Quaternary Science* 24:322-335.

*Goring, S.; *Pellatt, M.G.; *Lacourse, R.; *Walker, I.R.; and *Mathewes, R.W. 2009. A new methodology for reconstructing climate and vegetation from modern pollen assemblages: an example from British Columbia. *Journal of Biogeography* 36:626-638.

Jarzen, D.M., and Dilcher, D.L. 2009. Palynological assessment of Holocene mangrove vegetation at the American Memorial Park, Saipan, Northern Mariana Islands. *Grana* 48 (2):136 -146.

Keatley, B.E., Douglas, M.S.V., Blais, J.M., Mallory, M.L., and *Smol, J.P. 2009. Impacts of seabird-derived nutrients on water quality and diatom assemblages from Cape Vera, Devon Island, Canadian High Arctic. *Hydrobiologia* 621: 191-205.

Kholeif, S.E.A., and *Mudie, P.J. 2009. Palynological records of climate and oceanic

conditions in the late Pleistocene and Holocene of the Nile Cone, southeastern Mediterranean, Egypt. *Palynology* 33.

*Lacourse, T. 2009. Environmental change controls postglacial forest dynamics through interspecific differences in life-history traits. *Ecology* 90:2149-2160.

Ladd, M., and *Gajewski, K. 2009. The North American summer Arctic front during 1948 to 2007. *International Journal of Climatology* DOI: 10.1002/joc.1940

Laird, K.R., and *Cumming, B.F. 2009. Diatom-inferred lake level from near-shore cores in a drainage lake from the Experimental Lakes Area, northwestern Ontario, Canada. *Journal of Paleolimnology* 42:65-80.

Lavoie, M., Filion, L., and Robert, E.C. 2009. Boreal peatland margins as repository sites of long-term natural disturbances of balsam fir/spruce forests. *Quaternary Research* 71:295-306.

Lézine, A.-M. 2008. *Le Pollen: Outil de l'étude de l'environnement et du climat au Quaternaire*. Société Géologique de France. Vuibert. 176p.

Moos, M.T., Laird, K.R., and *Cumming, B.F. 2009. Climate-related eutrophication of a small boreal lake in northwestern Ontario: a palaeolimnological perspective. *The Holocene* 19:359-367.

Mott, R.J., *Walker, I.R., Palmer, S.L., and Lavoie, M. 2009. A late-glacial – Holocene palaeoecological record from Pye Lake on the eastern shore of Nova Scotia, Canada. *Canadian Journal of Earth Sciences* 46:637-650.

*Peros, M.C., and *Gajewski, K. 2009. Pollen-based reconstructions of late Holocene climate from the central and western Canadian Arctic. *Journal of Paleolimnology* 41: 161-175.

Stuchlik, L. (ed). 2009. *Atlas of Pollen and Spores of the Polish Neogene*. Vol. 3: Angiosperms. Kraków: W. Szafer Institute of Botany, Polish Academy of Sciences. ISBN: 978-83-89648-74-7.

Teed, R., Umbanhower, C., and Camill, P. 2009. Multiproxy lake sediment records at the northern and southern boundaries of the Aspen Parkland region of Manitoba, Canada. *The Holocene* 19:937-948.

Thienpont, J.R., Ginn, B.K., *Cumming, B.F., and *Smol, J.P. 2008. An assessment of environmental changes in three lakes from King's County (Nova Scotia, Canada) using diatom-based paleolimnological techniques. *Water Quality Research Journal of Canada* 43(2/3):85-98.

Tomkins, J.D., Lamoureux, S.F., Antoniades, D., and Vincent, W.F. 2009. Sedimentology of perennial ice-covered, meromictic Lake A, Ellesmere Island, at the northern extreme of Canada. *Canadian Journal of Earth Sciences* 46:83-100.

Viau, A.E., and *Gajewski, K. 2009. Reconstructing millennial-scale, regional paleoclimates of Boreal Canada during the Holocene. *Journal of Climate* 22:316-330.

Williams, J.W., Shuman, B., and Bartlein, P.J. 2009. Rapid responses of the prairie-forest ecotone to early Holocene aridity in mid-continental North America. *Global and Planetary Change* 66:195-207.

** denotes a CAP Member*

Conference Calendar

2010

April 18-21: **AAPG Annual Convention and Exhibition**
New Orleans, Louisana, USA
www.aapg.org/meetings

May 10-14: **GeoCanada 2010**
Calgary, Alberta
www.geocanada2010.ca

June 1-5: **Canadian Association of Geographers Annual Meeting**
Regina, Saskatchewan
www.cag-acg.ca/en/cag_annual_meeting.html

July 31-Aug 4: **Botany 2010**
Providence, Rhode Island, USA
www.botany.org/conferences/

Aug 1-6: **95th ESA Annual Meeting**
Pittsburgh, Pennsylvania, USA
www.esa.org/pittsburgh/

Aug 8-13: **AGU: The Meeting of the Americas**
Foz do Iguassu, Brazil
www.agu.org/meetings/ja10

Aug 12-16: **21st AMQUA Biennial Meeting**
Laramie, Wyoming, USA
Conference Theme: *Exploring the Pleistocene-Holocene Boundary in the Americas: From Molecules to Continents*
www.amqua.org

Sep 29-Oct 2: **CAP-AASP-CPC Joint Meeting**
Halifax, Nova Scotia

Oct 31-Nov 3: **GSA 122nd Annual Meeting**
Denver, Colorado, USA
www.geosociety.org/calendar/

2011

March 21-25: **AGU Chapman Conference on Climates, Past Landscapes, and Civilizations**
Santa Fe, New Mexico, USA
www.agu.org/meetings/chapman/2010/ecall/

May 25-27: **GAC/MAC Meeting**
Ottawa, Ontario
Theme: *Navigating Past & Future Change*
www.gacmacottawa2011.ca/welcome.html

Oct 9-12: **GSA 123rd Annual Meeting**
Minneapolis, Minnesota, USA
www.geosociety.org/calendar/

More information about the Canadian Association of Palynologists and other material relevant to Canadian palynology can be found on the CAP website:

www.scirpus.ca/cap/cap.shtml

CAP MEMBERSHIP FORM

Canadian Association of Palynologists / Association Canadienne des Palynologues (CAP) membership is open to all members of the palynological community in Canada and others with an interest in Canadian palynology. The Association is dedicated to the advancement and encouragement of all aspects of palynology in Canada and the promotion of co-operation between palynologists and those engaged in related fields of study. Membership dues include two issues a year of the *CAP Newsletter*, to which all members are invited to contribute. CAP is affiliated with the International Federation of Palynological Societies (IFPS) and members receive two issues of the IFPS newsletter (*PALYNOS*) each year.

CAP membership dues are $10 per year in Canadian or US funds payable at the beginning of the year. Lapsed members are removed from the mailing list after one year, following a reminder Members may, if they wish, pay for up to three years in advance. To join, please fill out the the membership form, by hand or in Adobe Reader®, and send it with a cheque (drawn on a Canadian or US bank) or money order payable to CAP to:

Dr. Mary Vetter, CAP Secretary-Treasurer, Luther College, University of Regina, Regina, Saskatchewan, S4S 0A2 CANADA

Name:_____

Affiliation:_____

Address:_____

_____

_____

Tel:_____ FAX:_____

E-mail:_____

Web page URL:_____

Research interests:_____

_____

_____

New membership ☐ Renewal ☐ Amount enclosed:_____

May we include your name/address/research interests in the on-line "Directory of Palynologists" in the CAP World Wide Web page? Yes ☐ No ☐