Canadian Association of Palynologists
Association Canadienne des Palynologues
NEWSLETTER
Volume 46 Number 2 December 2023

President's Message

I would like to begin by thanking all CAP members for their valuable contributions to our organization. I took over the mandate as President from Florin Pendea this past February 2023. On behalf of all CAP members as well as the CAP Executive I would like to again acknowledge and thank Florin for his dedication to the organization. I also extend appreciation to the Executive members: Francine McCarthy, for her long-standing dedication to our association and diligence in overseeing the Secretary-Treasurer's work, Manuel Bringué, for his on-going work as the Website Editor, Terri Lacourse for representing CAP as IFPS councillor, and to Estelle Allan for her work putting together the informative newsletters. We are also indebted Diana Tirlea and Nick Riddick, our outreach team, who led the effort to expand our social media presence and improve our ability to attract new members.

As I mentioned in my previous message, outreach is of critical importance to growing our community. CAP launched its own Instagram account and again, I sincerely thank Diana Tirlea and Nick Riddick for leading this initiative. On this platform, a "Mystery Grain of the Week" is posted (with hints), as well as notifications of upcoming meetings that may be of interest to CAP members. Photos of field work are something we all enjoy and are also content on our Instagram page. Please follow the CanadianPaly Instagram account at https://www.instagram.com/canadianpaly/. Your likes, shares, and comments promote Canadian Palynology on this social media platform; we really need your engagement! If you would like to contribute a post to the Instagram account please contact Diana Tirlea and Nick Riddick.

To this end, CAP will be changing the by-laws to formalize the position of Outreach Officer within the Executive. CAP will be making other changes to its bylaws at the same time, including changing of pronouns. Changing of bylaws requires your involvement. Please stay tuned this coming year for these changes.

I would like to take the opportunity to especially and sincerely thank Estelle Allan for her role as Newsletter Editor and her hard work at CAP. Estelle will be stepping down from this role. We are seeking applicants to take over the role of Newsletter Editor immediately. Please let us know if you are interested in contributing to CAP in this way. At the AGP, the role of President-Elect was filled by Manuel Bringué, and the role of Website Editor was filled by Simon Goring. I thank Manuel and Simon for stepping forward and volunteering their time and energy to CAP. Please see their introductions in the Newsletter. I encourage all of you interested in any given position of the Executive Committee to express your interest.

This year will see a bid submitted for Canada to host the joint International Palynology-International Organization of Palaeobotany Conference (IPC-IOPC) by Canadian members of the palynology and paleobotany research communities. A bid to host this meeting in Calgary,

CAP EXECUTIVE 2023

President: Jennifer Galloway
Newsletter Editor: Estelle Allan
Secretary-Treasurer: Francine McCarthy
Website Editor: Manuel Bringué
IFPS Councillor: Terri Lacourse
Outreach team: Diana Tirlea & Nick Riddick

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Alberta was discussed at the AGM and will be submitted on December 15 2023. Hosting this international conference would be an excellent opportunity to highlight Canadian palynology and to learn from colleagues both nationally and internationally, and raise the visibility of CAP. Hosting the event will be a tremendous amount of work and CAP will welcome your involvement and contributions to prepare for the event should the bid be successful.

Please note that there are several upcoming meetings that will be of interest to CAP members. These include:

- Canadian Quaternary Association (CANQUA), August 18-21, 2024, Regina
- The XV International Palynology-International Organization of Palaeobotany Conference (IPC-IOPC), May 27-31, 2024, Prague, Czech Republic
- Geological Association of Canada-Mineralogical Association of Canada (GAC-MAC) May 19-23, 2024, Brandon University, Brandon, Manitoba

Please see the respective websites for information on important deadlines, abstract submission guidelines, sessions, and field trips. Please see the special invitation in this newsletter to submit a proposal for a special session on palynomorphs at CANQUA.

This year, the Canadian and international palynology community lost Geoff Norris (1937-2023). Geoff's lengthy and impactful publication record includes contributions on dinoflagellate systematics, acritarchs, Cretaceous and Cenozoic palynofloras, biostratigraphy, and paleoclimate reconstruction. Geoff co-authored the highly cited and still standard guide "Quaternary Pollen and Spores of the Great Lakes Region". A scholarship is established in his name for Geology students, within the Department of Earth Sciences, at the University of Toronto. You can see the link here: https://engage.utoronto.ca/site/SPageServer?pagename=donate#/fund/2025. If anyone would like to make a contribution to the "Geoffery Norris Memorial Award Fund", donations are welcomed. The purpose of the fund is to support prospective students on the basis of financial need. For any questions, please contact chair@es.utoronto.ca.

This year also saw the passing of Jock McAndrews (1933-2023). Jock's work at Crawford Lake formed the foundation upon which subsequent work to declare this site as the GSSP for the Anthropocene was built. Jock published numerous research works, including, with Geoff Norris, the "Quaternary Pollen and Spores of the Great Lakes Region". Francine McCarthy shared some words about Jock and his contributions at the AGM, and there is is a commemoration prepared by Francine and Matthew Peros in this newsletter.

As the year draws to a close, I would like to acknowledge and highlight the many accomplishments CAP and its members had in 2023. As in previous years, this year we again received strong applications for the CAP Annual Research Student Award. I thank Terri Lacourse for adjudicating the selection process. It is my pleasure to congratulate our 2023 awardee Cesar Arturo Vera Florez, who is near completion of his M.Sc. degree in Geographical Sciences at the Université de Sherbrooke (UdS), Sherbrooke, Québec. His work is focusing on an 8,500 year record of vegetation change and human impacts at Baie des Baradères in Haiti using pollen analysis integrated with other proxies of environmental change. I would like to thank all applicants and the evaluation committee for contributing to this competition.

A huge accomplishment for Canadian palynology this year deserves special mention. Canada's Crawford Lake, near Milton, Ontario, has been chosen by the Anthropocene Working Group (AWG) to define proposed Anthropocene Epoch. Crawford Lake's varve succession was one of 12 candidates considered as the Global Stratotype Section and Point (GSSP), known colloquially as the "golden spike", that marks the end of one unit of time, and the beginning of another. The Anthropocene is proposed to have begun in the year 1952 A.D. and will be recognized by the onset of evidence of nuclear weapons testing, such as radioactive plutonium, which is detectable in a range of environmental archives worldwide. The proposal is that the planet has now entered the Crawfordian age, by protocol named after the site of the GSSP. This is a milestone for Canadian

palynology, micropaleontology, and limnogeology, and reflects the dedicated work of Francine McCarthy who led a team of about 75 scientists to make the case for the site to win the candidacy. Other CAP members and colleagues who were part of the team include Timothy Patterson, Martin Head, Michael Pisaric, Brian Cumming, and their dedicated students. This work builds upon the pioneering work of Jock McAndrews at this site. Please do not hesitate to use our website, biannual newsletter, twitter, and now Instagram account to share content, opportunities, acknowledge your colleagues, and celebrate advances in palynology. Your engagement is needed!

CAP President,
Jennifer Galloway
Geological Survey of Canada
Calgary, Alberta
Jennifer.Galloway@nrcan-rncan.gc.ca

Editor's Notes

Thanks a lot to all who contributed material for this edition of the CAP Newsletter: R. Fensome, F. McCarthy & M. Peros, S. Goring & P. J.H. Richard.

Deadline for NextCAP Newsletter

Please submit items for the next issue of the CAP Newsletter (Volume 47, Number 1, May 2024) by April 15, 2024. Conference reports, announcements, field trip reports, notices of new books, dissertation abstracts, book reviews, news, unidentified palynomorphs and essays on topics relevant to Canadian palynology are all welcome. Please send contributions to:

CAP *Newsletter* Editor
canadian.palynology@gmail.com

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Minutes, Annual General Meeting of the Canadian Association of Palynologists

Thursday, December 7, 2023, 1:00 PM EST, Virtual Meeting

Members present:
Jennifer Galloway (Meeting Chair, President), Francine McCarthy (Secretary-Treasurer), Manuel Bringué (Meeting Secretary, Website Editor), Terri Lacourse (CAP Councillor to IFPS), Estelle Allan (Newsletter Editor), Alwynne Beaudoin, Rob Fensome, Simon Goring, Sandy McLachlan, Josh Moraal, Peta Mudie, Cesar A. Vera Florez, Pierre Richard. Quorum reached.

Meeting called to order by CAP President J. Galloway, 1:10 pm EST.

1. Acceptance of Agenda
Motion to accept agenda carried (P. Mudie/T. Lacourse).

2. Minutes of the 2022 Annual General Meeting
Motion to accept the minutes of the 2022 CAP AGM carried (F. McCarthy/M. Bringué)

3. Business arising from Minutes
No business arose.

4. President's report, Jennifer Galloway
CAP President J. Galloway thanked the Executive and membership. She highlighted the importance of supporting CAP's presence on social media, working with the Outreach team (D. Tirlea, N. Riddick). She congratulated 2023 CAP Student Award recipient C. Vera Flores, who completed his MSc and has started his PhD. J. Galloway also congratulated F. McCarthy for the successful bid of Crawford Lake as Anthropocene GSSP (F. McCarthy acknowledged the contribution of others including N. Riddick and J. McAndrews).
A. Beaudoin noted that GAC-MAC 2024 will be held at Brandon U., not Sudbury.

5. Secretary/Treasurer's report, Francine McCarthy
CAP Secretary/Treasurer F. McCarthy reported on the current state of membership and that annual expenditures, however modest, are higher than revenues. In the long term, membership increase is needed to keep up with expenditures.

6. Auditor's statement, Diana Tirlea (in absentia)
D. Tirlea was thanked for auditing the Secretary-Treasurer's financial statement.
Motion to accept the Auditor's statement carried (M. Bringué/P. Mudie).

7. Newsletter Editor's report, Estelle Allan
CAP Newsletter Editor E. Allan reported on the last 2 issues, thanking the many contributors. She is stepping down as Newsletter Editor and CAP is looking for another motivated member to take on this fun position! The next Newsletter Editor can count on support from E. Allan and other members with experience.

8. Website Editor's report, Manuel Bringué
CAP Website Editor M. Bringué reported on the healthy website. CAP upgraded the website to WordPress' most affordable paid plan in January 2023, mainly to avoid advertisement and maintain CAP's professional online presence. He invites contributions from the membership, in particular, opportunities and pictures of palynomorphs to display on the Home page.

9. CAP Councillor to IFPS, Terri Lacourse
No news from IFPS to report.

Motion to accept all reports carried (A. Beaudoin/P. Richard).

10. Appointment of auditor, Francine McCarthy
T. Lacourse suggested the auditor be external to CAP to avoid any potential conflict of interest. F. McCarthy and/or T. Lacourse will ask colleagues in their departments.

11. Vote on CAPs involvement in IPC/ IOPC bid (due to IFPS in mid-December), Francine McCarthy
Original idea was a CAP bid to host IPC/IOPC 2024 in Toronto; because of the pandemic, the 2024 congress is being held in Prague and we are now discussing a CAP bid for 2028. While Toronto remains a viable option and F. McCarthy already assembled material for a bid, the preferred option is now for CAP to support a Calgary bid lead by Christopher West (Royal Tyrell Museum), whose potential field trips would better appeal to paleobotanists and pre-Quaternary palynologists, and where potentially more Calgary-area members could contribute to its organization. The Calgary bid would schedule the IPC/IOPC immediately before or after the IGC (current IGC bid is for Aug. 12-20). CAP's involvement would still be substantial as Christopher West would likely have limited support from Tyrell. M. Bringué offered to help from Calgary. R. Fensome, T. Lacourse, A. Beaudoin (tentatively), S. McLachlan and S. Goring also offered their support from a distance. P. Mudie highlighted support from GEOTOP, ISMER and UNB-Fredericton, all very active groups in

Canadian palynology, would be helpful for a successful event.
T. Lacourse moved for J. Galloway to express CAP's support of Christopher West's IPC/IOPC 2028 Calgary bid, with CAP's exact level of support to be defined later. P. Richard seconded, motion was carried unanimously.

12. Commemoration of Jock McAndrews' contributions to Canadian Palynology, Francine McCarthy
Jock McAndrews was a pillar of Canadian palynology. Matthew Peros and F. McCarthy are preparing a commemoration for the Newsletter, partly using material from Jock's memorial at UofT (S. Finkelstein). Jock was F. McCarthy's supervisor in the mid 1980s and then a close collaborator. There would be no bid for Crawford Lake without him. He received the news of GSSP acceptance before passing. He made enormous contributions to palynology and other connected disciplines. F. McCarthy invites contributions from CAP members, if they have anything to share.

13. Discussion of location of 2024 AGM, with vote, Francine McCarthy
CANQUA (Regina, SK, August 18-21) appears to be the best option for the 2024 CAP AGM. CAP received a special invitation to contribute to CANQUA; its Quaternary focus and the proximity of several CAP members promises to attract several CAP members, and the meeting will still be hybrid for people to join the AGM online. Other possible venues discussed were IPC/IOPC in Prague (not practical for most Canadians) and GAC-MAC (also close to Regina, but not as well aligned with CAP interests), although CAP contributions are welcomed.
Motion to hold the 2024 CAP AGM at CANQUA (Regina, Aug. 18-21) as a hybrid meeting (T. Lacourse/F. McCarthy), unanimously carried.

14. Vacancies on Executive, Jennifer Galloway
a. President-Elect (currently vacant)
M. Bringué offered to step in as President-Elect, but it would create a vacancy for the Website Editor position. S. Goring offered to take on the role of Website Editor. Since CAP by-laws (Section 6) indicate that ballots are not necessary when only one candidate stands for election, vacancies can be filled by acclamation. M. Bringué and S. Goring will still send a short biography and letter (for President-Elect) to introduce themselves and their vision to the membership, as President-Elect and Website Editor, respectively.
Motion to elect M. Bringué to the position of President-Elect (P. Richard/J. Galloway), unanimously carried [motion technically not needed]. M. Bringué elected by acclamation. S. Goring also elected to the position of Website Editor by acclamation.

b. Newsletter Editor
No nomination was received before or at the AGM. CAP Executive will continue to seek nominations, and will actively support the new Newsletter Editor in this non-onerous and fun role, vital to the organization.

15. The Future of CAP - Priorities and Goals
Priorities were clearly established as follows: (1) increasing membership, (2) formalizing the Outreach position on the Executive (including changes to the by-laws), and (3) supporting the Calgary bid for IPC/IOPC 2028.

16. Other Business
Changes to by-laws: President-Elect (M. Bringué) will lead the changes, consisting in formalizing the Outreach position on the Executive, and updating various details, with support from the rest of the Executive.
S. Goring: Neotoma has online and in person workshops we can arrange for anyone interested in training folks to use the database for analysis or data contribution.

17. Adjournment
Motion to adjourn the AGM carried (J. Galloway/M. Bringué). Meeting adjourned at 2:27 pm EST.

2023 CAP AGM attendees.

Secretary-Treasurer's Report

It has been nearly 16 months since our 2022 AGM that was well attended by CAP members in the Montreal catchment as well as Past-President Florin Pendea and me from Ontario in person and several additional members online (see our December 2022 Newsletter for details of the business meeting and the festivities at Mckibbins Pub in recognition of the contributions of Pierre Richard to palynology in Canada). Since that time, we have welcomed two new members- Gaelle Turcotte (CEGEP de Granby/ UQAM) and Vincy Yesudian Winifred (U. Minnesota) and received $25 in donations in addition to several membership renewals.

Our membership has remained stable since the last AGM, standing at 35 members in good standing, including three recipients of the CAP Award who are non-paying members over three years. Several longtime members are likely to renew their membership upon receipt of a reminder, but our membership remains below pre-pandemic levels and well below levels 20 years ago – and more importantly, below our break-even point (see below). The truly existential issue of CAP's long-term viability must be explored at the meeting and hopefully discussion around the IPC/IOPC bid will spur greater engagement in CAP.

Our ongoing expenses are minimal beyond the $500 set aside for the CAP Award, but this past year we incurred additional costs focusing on strengthening our sense of community. These were covering the costs of meals for students and young professionals as well as honoured guest Pierre Richard following our 2022 AGM and upgrades to our website, which is the ongoing presence of our association between the newsletters, providing a sense of community for our members. As a result, the CAP account is in the red by $497.47 this year. Our balance of $6764.97 will allow us to meet our foreseen annual expenditures, but the break-even number of paying members is 35 and we are

currently slightly below that. We have committed some funds (not yet specified) toward the IPC/IOPC bid (and potential congress) but we have to discuss how much money we plan to invest in the congress.

In more mundane business matters, I still need to change the official mailing address of CAP to Brock University which was not done when the account was first moved to Ontario. This is needed to update the list of officers of the association ahead of changing the bylaws. I spent several hours trying to get through the government phone line to get this done earlier this summer around many pressing deadlines and then postponed that to this summer when I should have more time!

Francine M.G. McCarthy

Summary of Financial Transactions Since Last AGM, as at midnight August 11, 2022

Account Balance August 11, 2022	**$7251.44**
Revenue:	
Membership dues 7* $40 (3-yr)	$280.00
Membership dues 3* $15 (1-yr)	$45.00
Membership dues (1 catchup year)	$15.00
Donations	$25.00
TOTAL REVENUE	**$365.00**
Expenditures:	
Celebration Pierre Richard (Mckibbins Pub)	($218.17)
Website upgrade (Wordpress)	($132.30)
Corporations Canada Filing (2023)	($12.00)
CAP Award	($500.00)
TOTAL EXPENDITURES	**($862.47)**
NET Loss	($497.47)
Account Balance November 20, 2022	**$6764.97**

CAP Financial Audit Auditor's Financial Report for the Canadian Association of Palynologists (CAP) Review Period 2022-2023

Dear Executive Board and Members:

For auditing purposes, Francine McCarthy (Executive, Secretary-Treasurer, CAP), provided me, Diana Tirlea (Member, CAP), with a bank statement (BMO, Stoney Creek, CAN ASS P ITH 2726-8068-583, dated November 21, 2023) and a spreadsheet with financial transactions from August 16, 2022 until June 28, 2023. Upon review of the financial documents, all appear complete, fair, and a transparent representation of the CAP financial records to date. For the 2022-2023 audit period, the provided bank statement and financial transactions indicates CAP is in good and secure financial standing to support the upcoming annual expenditures.

Sincerely,

Diana Tirlea, MSc (she/her)
Quaternary Environments, Royal Alberta Museum
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e diana.tirlea@gov.ab.ca
w https://royalalbertamuseum.ca/

Newsletter Editor's Report

I edited the last two issues of the CAP Newsletters. December 2022, Newsletter (Volume 45, Number 2, December 2022) and May 2023 Newsletter (Volume 46, Number 1, May 2023).

The December issue was 23 pages long and was distributed to CAP members for Christmas, on the 24th of December. This edition had great contributions thanks to Francine McCarthy, who provided two interesting items about Crawford Lake, Milton, Ontario, Canada; to Jonathan & Alexandra Bujak and their Azolla Story; to Jade

Falardeau & Marie-Michèle Ouellet- Bernier, who shared with us their experiences about their interactive workshop for youth on the different methods to reconstruct the climate of the past; to Diana Tirlea with her Instagram posts and her nice palynomorphs recovered from a remnant of a glacier in Jasper National Park; and thanks to Cesar Arturo Vera Florez, who talked about his palynological research's from an Holocene Caribbean record.

The May Newsletter was 10 pages long and was distributed to CAP members on the 8th of May. In this issue, thanks to Manuel Bringué who reported on the SLN PaleoLab workshop. Thanks also to Audrey Limoges & Nicolas Van Nieuwenhove who presented to us their PaPER lab at the University of New Brunswick and their works. And congratulations to Cesar Arturo Vera Florez, who received the 2023 CAP Student Research Award and give us a nice overview of his research.

It is always a pleasure to receive nice items relevant to Canadian palynologists, thanks for all your contributions. And please, do not forget that we are still looking for a new motivated Newsletter Editor. Spread the word!

Bien à vous,

Dr. Estelle Allan
Post-Doctoral Fellow, McGill University
estelle.allan@mcgill.ca

Website Editor's Report

This report summarizes CAP website activity from August 10, 2022 until November 27, 2023.
At the 2022 CAP AGM, it was agreed to subscribe to a low-cost plan to avoid advertisement on the CAP website that was distracting and appeared unprofessional. With support from the CAP Executive, we upgraded the website to WordPress' "Personal Plan" in January 2023. The cost is very reasonable: $126 for 3 years (next renewal on January 1st, 2026), and $20 annually for the domain name (1st year free).

The website (https://canadapaly.ca/) continues to serve as CAP's presence on the web, with resources available to everyone within and outside the Association. Notably, past CAP Newsletters are posted on the website about 6 months after their release, while CAP members receive each Newsletter directly upon release by email. Figure 1 below shows relatively stable monthly views, with a peak at 339 views in March 2023 and a somewhat slower summer 2023 (under 100 monthly views in July–September).

Over the last year (365 days ending November 27, 2023), the website was accessed 1,868 times, with an average of ~147 which is slightly lower than the long-term average. As usual, most viewers accessed the site from Canada, but many viewers also accessed the site from the US, the UK and several other countries on all continents (Fig. 2).

Overall, the most viewed pages over the last year were the Home page (499 views), Opportunities (167 views), Equipment and Laboratory Supplies (146 views), and Membership page (104 views). There was no noticeable influence from social media activity on website views; there might be opportunities for growth there and I look forward to working with our Outreach team (Diana Tirlea, Nicholas Riddick) to that end.

I invite members to contact me (manuel.bringue@nrcan-rncan.gc.ca) if they wish to post palynology-related content, pictures of palynomorphs or opportunities in their labs, in Canada or abroad.

Respectfully submitted,

Manuel Bringué
CAP Website Editor
November 27, 2023

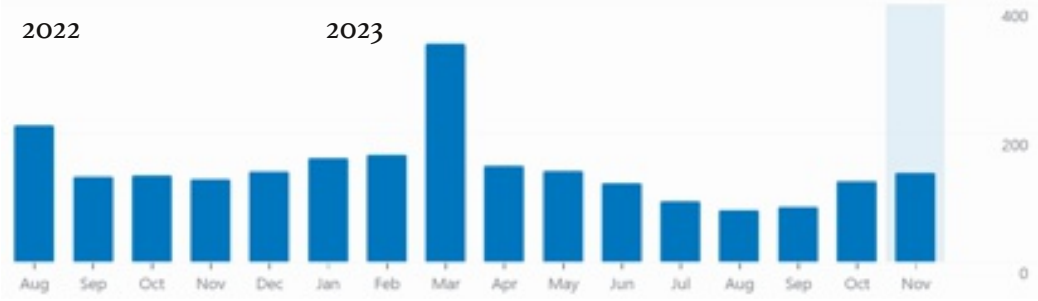

Fig. 1. Total monthly views (all pages combined) from March 2020 to August 10, 2022. Current reporting period indicated with red rectangle; period since the last AGM shown with green rectangle.

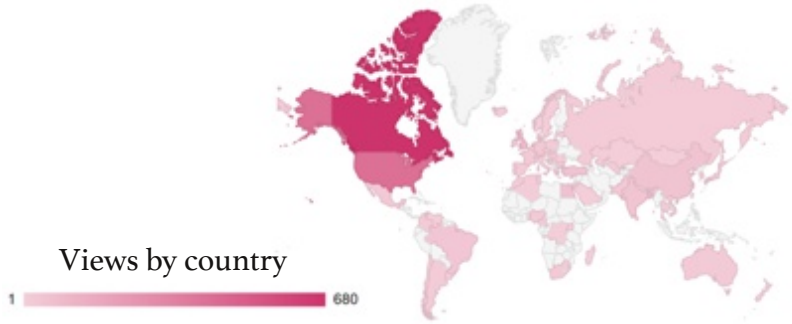

Fig. 2. CAP website views per country over the last 365 days (ending on Nov. 27, 2023). Out of a total of 1,868 views, Canada accounted for 680, the US 420, the UK 80; all other countries identified on the map had less than 53 views.

Palynfo

CANQUA-CGRG Biennial Meeting will take place at the University of Regina from August 18-21, 2024. The deadline for abstract submission is March 30th, 2024.
For more information: https://event.fourwaves.com/canqua2024/pages

This is a special invitation to palynologists and all CAP members. Please consider proposing a special session on palynomorphs in the Quaternary, paleoecology, or anything else of special interest to CAP members or simply join us at the next CANQUA-CGRG joint meeting for wonderful talks, networking and unforgettable field trips! Regina, August 18-21, 2023.

We hope to see you all!

Take a look at our website

https://event.fourwaves.com/canqua2024

If you have any questions please don't hesitate to contact

Maria Velez:
Maria.Velez.Caicedo@uregina.ca

Or

Mary Vetter:
Mary.Vetter@uregina.ca

Conference report / Rapport de conférence

By Pierre J.H. Richard, 19 novembre 2023

The International Research Network on Cold Forests held its 3rd annual meeting in the Sépaq Tourist Resort at Duchesnay, Québec. October 3-5, 2023.

Le Laboratoire International de Recherche sur les Forêts Froides (https://forets-froides.org) s'est réuni pour sa 3è rencontre annuelle à l'auberge touristique de Duchesnay (Sépaq), du 3 au 5 octobre 2023. https://forets-froides.org/rencontre-francophone-irp-forets-froides-2023

L'événement a rassemblé près de 70 chercheurs et étudiants autour de projets collaboratifs. Les participants provenaient principalement de l'Université du Québec en Abitibi-Témiscamingue (UQAT), de l'Université du Québec à Rimouski (UQAR), de l'Université du Québec à Chicoutimi (UQAC), de l'Université du Québec à Montréal (UQAM), de l'Université Laval, du ministère des Ressources naturelles et des Forêts (MRNF) du Québec et du Service Canadien des Forêts (SCF). La rencontre était organisée en partenariat avec ces deux dernières institutions. Du côté français, l'Université de Montpellier, l'Université de Franche-Comté et le CNRS étaient représentés.

Photos 1a et b : Les participants en nombre à la station touristique Duchesnay © Lesven

Photo 2. Lac St Joseph, Duchesnay © Girardin

Jonathan Lesven (doctorat) et Manon Carboni (maitrise) ont décroché un prix pour leur exposé. Deux journées de conférences thématiques, l'une portant sur la capacité des forêts boréales et de montagne à se maintenir face aux changements globaux, et l'autre traitant de la dynamique des érablières nordiques ont fait place belle à la paléoécologie et à l'analyse pollinique. Douze affiches passionnantes furent aussi présentées. Une excursion dans les érablières à hêtres de la forêt de Duchesnay a couronné la réunion, sous un beau soleil d'automne. https://forets-froides.org/wp-content/uploads/2023/10/Cahier-conferences-Forets-Froides-2023.pdf

Palynological research at the Geological Survey of Canada (Atlantic)

By Rob Fensome

Palynologists at the Geological Survey of Canada's Atlantic Division (GSCA; part of Natural Resources Canada) in the 1980s were at the forefront of the founding of CAP. But it has been many years since we provided an update on our palynological activities here in Dartmouth: so this report is long overdue. Palynology indeed is still thriving at GSCA (formerly the Atlantic Geoscience Centre), with two research scientists (Graham Williams and Rob Fensome), post-doc Vânia Correia, scientist emerita Peta Mudie, laboratory technologist Lori Campbell, and volunteer Bill MacMillan. Graham, Rob and Vânia pursue various projects in Atlantic and Arctic Canada in association with a range of colleagues nationally and internationally. Peta is very active in the late Miocene to Quaternary palynology of various localities from the Caspian Sea to the Canadian Arctic.

In the early 2000s, Rob and Graham, in collaboration with colleagues including Andrew MacRae at Saint Mary's University, developed a multidisciplinary event stratigraphy for the Late Cretaceous and Cenozoic of the Scotian Margin (offshore Nova Scotia); the results were published in the late 2000s. While this project was peaking, Andrew, Graham and Rob were approached by the Nova Scotia government, who were seeking help to attract offshore hydrocarbon investment through a major, well-funded "Play Fairway Analysis" (PFA) study. The value of biostratigraphy was early recognized for such a study, and a biostratigraphy team was assembled, including Dave Shaw (a palynologist from the UK), Kevin Cooper (a nannofossil specialist from the UK) and Janice Weston (a micropaleontologist from the UK), as well as Andrew, Graham, Rob and emeritus micropaleontologist Piero Ascoli from GSCA. This "PFA biostrat team" has been working together successfully now for over 15 years, focussing on an integrated multidisciplinary event stratigraphic analyses of the Scotian Margin. The team, led by Janice, produced a landmark paper on results from the initial PFA study in 2012, and have continued to work on wells from offshore Nova Scotia and related areas with financial support from the Nova Scotia government. This work has resulted in several reports available online, and we have just published a compilation of wells from the Laurentian Subbasin, part of the offshore Scotian Basin on the southern Grand Banks. Future papers will be compilations from work on the southwestern Scotian Margin and northeastern offshore New England, and on the Moroccan Margin. These studies have been greatly aided by data archived in GSCA's BASIN database (https://basin.marine-geo.canada.ca/index_e.php).

The PFA and related work has been in collaboration with the Nova Scotia provincial government, who are also supporting work by post-doc Vânia Correia, who joined GSCA in late 2021 after various delays in trying to bring her to Nova Scotia. In the broader context of extending our multidisciplinary event stratigraphy to the Triassic through Lower Cretaceous section, she has been focussing on Lower Cretaceous cores from Panuke B-90 and Cohasset A-52 exploration wells on the Scotian Margin. This work, carried out in collaboration with Andrew MacRae, Lynn Dafoe (GSCA), and Ricardo Silva (University of Manitoba), as well as Rob, Graham and others, is yielding interesting results so far: for example, the discovery of the early Aptian Oceanic Anoxic Event (OAE1a) for the first time in the northwestern Atlantic. This science, which traditionally has been associated with oil and gas exploration, is now supporting carbon capture and other applied studies.

Other than involvement with PFA work, in the 2000s much of the Geological Survey of Canada's focus shifted to the North, funded by GSC's Geomapping for Energy and Minerals (GEM) Program and its successors. As a result, Graham

focussed his attention on the Labrador–Baffin Seaway (Labrador Sea, Davis Strait and Baffin Bay), collaborating with GSCA colleague Lynn Dafoe, as well as Henrik Nøhr-Hansen at the Greenland and Denmark Survey (GEUS), with papers on stratigraphy and paleoenvironmental aspects. More recently Graham's focus has been on the palynology of the Bylot Island region in the eastern Arctic, in collaboration with the late Art Sweet, Kimberley Bell (formerly with GSC Calgary), and Elliott Burden (now retired from Memorial University in Newfoundland), all palynologists, and GSC scientists Lynn Dafoe and Jim Haggart. Exposed on Bylot Island are mid-Cretaceous to Paleocene rocks with interesting palynofloras; several publications on these and the island's geology and paleoenvironments are in the pipeline. Rob also turned his attention northwards, collaborating on projects on the Mackenzie Plains and Axel Heiberg Island with GSC Calgary palynologists Jen Galloway and Manuel Bringué.

Other studies carried out under GEM is also of palynological interest, including the "Circum Arctic PalynoEvent" (CAPE) series of papers published in the journal *Atlantic Geoscience* (not to be confused with the earlier CAPE Late Pleistocene–Holocene paleoecology project that Peta worked on in the 1990s). Each paper in the recent CAPE project provides an event stratigraphy using palynomorphs for a particular period: so far articles on the Devonian, Carboniferous, Permian, Triassic, and Jurassic have been published, and a manuscript on Cretaceous Arctic palynoevents is at an advanced state of preparation; a similar article on the Cenozoic is also planned. The series originated with a suggestion by former GSC palynologist Jonathan Bujak to Rob and Graham; and is under the editorial guidance of Graham, Jonathan, Rob, and Gunn Mangerud in Norway. Rob has also collaborated with Manuel Bringué and others at GSC to promote the use of Time Scale Creator, with a new Canada Datapack being uploaded in 2020.

Graham and Rob have a long-standing interest in dinoflagellate evolution, taxonomy and nomenclature. The various editions of the "Lentin and Williams Index" are probably most cited works in fossil dinoflagellate literature. The series started by Judi Lentin and Graham as a 176-page small format, relatively large print booklet in 1973, has grown through several additions, with the latest 2019 edition running to 1173 pages in large format and relatively small print. Thankfully for our tree friends it is now a PDF version only ... and available free from The Palynology Society website. Coauthors for the past few editions have been Graham, Rob and Andrew MacRae of Saint Mary's University, the last-named being responsible for turning the Index into the DINOFLAJ (rhyming with "badge") database. Note however that DINOFLAJ still needs to be updated to the 2019 Index. We are hoping that the next edition of the Index will be out in 2025. Another database that Graham was involved with over the years, along with former GSCA palynologist Sedley Barss, is Palynodata. Although it ceased accumulating new data in 2006, thanks to former GSCC palynologist

Peta Mudie at the microscope

James White, it is still a valuable resource and is potentially available as GSC Open File 5793 (Gravendyck et al. 2022). However, this open file is now inaccessible to more recent software, but we are working to remedy that situation.

In a similar taxonomic and evolutionary vein, Rob and Graham's recent works include re-evaluations of the *wetzelielloid* dinoflagellates (led by Graham), the *Cyclonephelium* group of areoligeracean dinoflagellates (led by Rob), the morphology of *Thalassiphora* (led by Peta Mudie), the genus *Turbiosphaera* (led by former GSC visiting scientist Raquel Guerstein), and dinoflagellate evolution (with Jim Riding of the British Geological Survey and others). Rob has also been involved in sorting out some tricky nomenclatural issues relating to dual nomenclature (the use of both fossil- and non-fossil-names for different life-cycle stages of supposedly the same biological species) led by Martin Head at Brock University and Kenneth Mertens of Ifremer in France. Rob and Graham were also for a while distracted from palynology by the production of a couple books, in collaboration with many others: *Four Billion Years and Counting: Canada's Geological Heritage* (with a French edition, *Quatre milliards d'années d'histoire: le patrimoine geologique du Canada*) and *The Last Billion Years: A Geological History of the Maritime Provinces of Canada* (https://atlanticgeosciencesociety.ca/books)

Peta continues to work on dinocyst taxonomy and paleoecology of Late Miocene to modern sediments ranging from the Arctic and Baffin Bay to the Aral and Caspian seas in West Asia. The Eurasian work has included collaboration with Keith Richards (formerly of KRA Stratigraphic Limited), and André Rochon, of Université de Rimouski. Work is ongoing to untangle the taxonomy of extraordinary morphological plasticity displayed within the *Spiniferites cruciformis – Pyxidinopsis psilata* complex. Peta's collaborations continue with researchers at Memorial University on the Black Sea Corridor (from the Aegean to Aral Seas), with Peta acting as the Canadian representative for the UNESCO-funded International Geological Correlation Programme (IGCP) Project 521. This program has resulted in several papers on dinocysts and other non-pollen palynomorphs (NPP) of these low marine salinity to brackish water seas through collaboration with colleagues Valentina Yanko and Sergeyi Kadurin at Odesa Mechanikov National University, Ukraine. This work led to the production of an Atlas of Modern Dinoflagellate Cysts in the Black Sea Corridor, an international collaboration with Kenneth Mertens and Suzanne Leroy (France), Fabienne Marret (UK) and Lyudmila Shumilovskikh (Germany). Unfortunately, work with Russian and Ukrainian paleontologists has been curtailed as the war there has ended the bid to place a golden spike in the Eltigen section in Crimea as the reference for the Late Pleistocene Karangatian Age.

Other European collaborations between Peta and Fabienne Marret and Chris Reid (UK), Pieter Gurdebeke (Belgium), and Julian Hartman (Netherlands) have focused on documenting the distributions of dinocysts and NPP in marine and brackish-water settings, and on understanding the biological affinities of NPP palynomorphs, many of which were formerly classified as acritarchs. This pioneer work includes use of new tools such as micro-Fourier Transform Infrared spectroscopy and RNA sequencing.

Peta's Canadian work has included collaboration with André Rochon and Anna Pienkowski (MacEwan University, Alberta, now at Adam Mickiewicz University, Poland) on the Holocene history of the Northwest Passage. This Canadian Arctic work continues in collaboration with Shao-Min Chen of Dalhousie University using isotope geochemistry of essential amino acids to trace sea ice algae from the surface water to seabed. Another innovative project used pollen to backtrack the last journey of Kwäday Dän T'sìnchí (the Long Ago Person Found), whose frozen body was discovered

Members of the GSCA palynology group: back row Graham Williams, Bill MacMillan and Rob Fensome; front row Lori Campbell and Vânia Correia

melting out of the Samuel Glacier (southern St. Elias Range, Yukon). This forensic palynology work was carried out in collaboration with members of the Yukon Champagne-Aihishik First Nations as part of the International Polar Year. Pollen of the intertidal species of glasswort (*Salicornia pacifica*) in the clothing and colon of the frozen man, combined with traditional knowledge of the Elders, were used to trace the start of the man's last journey at the coast near Glacier Bay.

Last but not least is news on our infrastructure situation. GSCA is part of the federal government's Bedford Institute of Oceanography (BIO) campus in Dartmouth, across the harbour from Halifax and operated under the auspices of Fisheries and Oceans Canada. However, our location in BIO's Murray Building is currently being renovated; so most staff are now located in an office building ... unfortunately "cubicleland" ... in the nearby Burnside Industrial Park, where we are projected to be until at least 2026. But we do have an operating palynology lab, run by technologist Lori Campbell, on the BIO campus.

As you see, we palynologists at GSCA are still thriving, with our fingers in many research pies. If you are in the Halifax area, please look us up.

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The Scientific Legacy of Jock McAndrews

By Francine McCarthy & Matthew Peros

John 'Jock' Henry McAndrews was born in Minneapolis, Minnesota and died at the age of 90 in Port Perry, Ontario. He received his PhD from the University of Minnesota in 1963 and began his career at the Royal Ontario Museum in 1967 following a postdoctoral fellowship in the Netherlands. He retired as Curator Emeritus of Botany at the ROM and Professor Emeritus of both Earth Sciences and Ecology and Evolutionary Biology at the University of Toronto. His impact on Quaternary science will live on through his works (a selected bilbiography follows) and his students and collaborators.

As Curator of Botany, Jock developed a comprehensive palynology and paleobotany reference collection with the assistance of long-time technician Mrs. Darahkshan Siddiqui and Assistant Curator Deborah Metsger. His paleoenvironmental/ biogeographic research, beginning with his dissertation on the 'Itasca transect' across the prairie–forest ecotone[1,2] under the supervision of his mentor Herb Wright, focused primarily on the Quaternary of the Great Lakes region (and one of his most cited works is the *Key to the Quaternary pollen and spores of the Great Lakes*

Field Day, 2013- Crawford Lake Conservation Area. Courtesy, Brodie Club

region published by the ROM in 1973).

Jock's legacy goes beyond his seminal work on Crawford Lake,[3-10] for which he is probably best known, assisted by long-time research associate Charlie Turton (and which he was enormously pleased to see selected as the proposed candidate for the Anthropocene shortly before his death). He loved touring people through the site, imparting his wisdom to various groups, including the select Brodie Club, pictured below, expounding on the 'grinding stone' in 2013, and decades earlier, touring David and Susan Jarzen through the site, with the grinding stone always a popular spot.

Jock mentored several of graduate students in the Botany, Geography and Geology/ Earth Science programs the University of Toronto who coauthored publications with him,[11-19] and postdoctoral Fellow Jean Nicolas Haas also spent time in his lab and continued to collaborate with him after starting his position at the University of Innsbruck.[20] He frequently returned to the Great Lakes,[21-24] but his work also extended geographically across North America,[25-28] even venturing into the West Indies[29], and stratigraphically into the Pliocene through his collaboration with the Ontario Geological Survey,[30] and he was involved in several studies of the last interglacial, particularly with his long-time collaborator Paul Karrow of the University of Waterloo.[31-33] His wide interests crossed over into vertebrate paleontology, aerobiology/ melissopalynology, and even non-pollen palynomorphs,[#-#] but I think that geoarchaeology was his favourite melding of all of his interests.[#-#]

An earlier photo of Jock with Susan Jarzen on the grinding stone. Courtesy, David Jarzen

As evidenced by the reminiscences from colleagues that were shared with me since word of this death spread, it is impossible to remember Jock without acknowledging that he could be brusque and coarse and impatient of social conventions, but also that he could be kind and supportive and that he was passionately interested in the natural sciences – and beyond, as a voracious reader of non-fiction. I will always remember Jock in the field, where he was happiest and always had a wealth of knowledge to impart.

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Updates from Neotoma

By Simon Goring (goring@wisc.edu)

2023 was a big year for the Neotoma Paleoecology Database. More than 2000 new datasets were added from 70 countries representing contributions from 436 publications and 971 authors. Over the course of 2023 we worked on moving our computing services from Penn State to the cloud, hosted with Amazon Web Services. This move to the cloud helps us move to a more distributed tech stack, allowing more people to contribute directly to Neotoma infrastructure.

This year also saw the official release of the new `neotoma2` R package, along with a publication in the Journal of Open Source Software (https://doi.org/10.21105/joss.05561). The R package was accompanied by a number of successful online workshops, for paleoecologists in Montreal, the Pacific Northwest, Africa, India and Europe. We're more than happy to tailor specific workshops to classes, seminar groups or interested research teams. Please contact us (goring@wisc.edu) for more information about these workshops and options for delivery.

We continue to support data archiving for the paleo-community, providing long term data storage and access, DOIs and support for data upload using Tilia. If you are interested in becoming a data steward, to upload records yourself, or to help train others to do so, contact us at neotoma-contact@googlegroups.com.

If you'd like to become a member of Neotoma, please fill out this webform (https://forms.gle/7uubXxMgeMMkyAqJ7). Becoming a member of Neotoma helps us show our value to the broader community, and it gives you a say in Neotoma's governance, electing members of the Leadership Council (https://www.neotomadb.org/people).

Acknowledgements of Pierre J.H. Richard following the CAP / ACP 2022 general meeting

Excerpted from the CAP Newsletter, volume 45, number 2, December 2022, pages 5 and 6:

« *… this year's gathering is dedicated to the celebration of Pierre Richard, one of the most influential Canadian palynologists, and a dear friend and long-standing member of CAP. I am very much looking forward to spending some quality time with Pierre and the rest of our CAP family as we celebrate his lifelong accomplishments.* », Florin Pendea, President. AGM of CAP/ACP, Montreal, August 16, 2022.

« *… so it is a pleasure to meet in person with members in Montreal as well as on Zoom, and to have the opportunity to recognize one of our longest-standing members and his contributions to Canadian palynology – Pierre Richard.* » Francine M.G.McCarthy, Secretary-Treasurer, AGM of CAP/ACP, Montreal, August 16, 2022.

« *… most influential Canadian palynologist …* », « *… long-standing member of CAP …* », I was and still am overwhelmed by such statements and I suspect they come quite simply with time passing by.

I am effectively a founding member of CAP in 1978, but many more Canadian palynologists, past and present, were or are « most influential », I must say, and on many aspects of our rich and diverse scientific domain. This is only partly evidenced by the Palynological personalities (https://canadapaly.ca/library-resources/palynological-personalities/) on CAP's website, and the names of James (Jim) Ritchie, John (Jock) McAndrews, Robert (Bob) Mott and so many others naturally come to mind, not to mention Alwynne Beaudoin, Anne de Vernal, Konrad Gajewski, Michelle Garneau, Francine McCarthy and Florin Pendea, among others present at the 2022 AGM of CAP / ACP. I am deeply touched by the presence of Bianca Fréchette and Julie Loisel, former students of mine, and of Hans Asnong and Alayn Larouche, former students and research assistants in my lab.

I whole-heartedly thank everybody for organizing a party for me after the 2022 AGM in Montreal.

I discovered palynology and pollen analysis in 1966, during my 3rd year in forestry at Université Laval. I was then 19 years old. Professor Grandtner showed me pine pollen grains at the microscope, handed me 3-4 books and told me something like: « *That's all I know about the matter; now, the game is on your side: play on* ». This I did. I completed a bachelor thesis (Spring 1967) on the pollen representation of a Balsam fir – White birch forest north of Québec City, supported by a description of the pollen grains of most trees and some shrubs of Québec's native flora. In the meantime, the Dean of the Forestry School, and the faculty members of the Department of ecology and pedology offered me to get a doctoral degree abroad, come back to Laval as a professor, and set up a palynology laboratory in the department. Quite a mission for the youngster! Complying to my teachers' project was evident for me, and « The Mission » was my sole motivation. I chose to study with Madam Madeleine Van Campo at the *Muséum national d'histoire naturelle* de Paris. I have also been offered to study with Margaret B. Davis then at Yale, or with Gunnar Erdtman in Sweden, but I was reluctant because of my so poor English..., it did'nt improved much since then... Back to Québec City in 1971, the Dean has changed and the new one did not respect the agreement. I thus ended unemployed, and the degree was not yet completed. Fortunately, I took a job at the recently created campus of the *Université du Québec* à Chicoutimi, set up a lab and a *Service à la recherche en analyse pollinique*, and moved the lab and the Service to the Geography department of *Université de Montréal* in June 1976. The achievement of my doctoral work was done in Chicoutimi and the defense took place in Montpellier (France) in October 1976, after 9 years of hard work and much

additions to the initial project for this *Doctorat d'État français en Sciences naturelles*. I retired in 2011.

Those who know me know too well that I could keep on telling my story (or other memories) for pages and pages, but suffice to say that I feel I am a very lucky guy. My teaching activities throughout those years were all much stimulating occasions to learn. My research activities, strongly influenced by contracts for services in pollen and macrofossil analyses, were all great opportunities to interact with researchers of other disciplines and to expand my knowledge. My commitment as chief editor of a scientific journal during 30 years played the same role. I feel much indebted to the many generations of students who kindly suffered my teaching. I am thankful to the exceptional persons I happened to meet and/or work with over the years. I wish to live long enough to go back to the files and write something on those too many unpublished sites and contribute even more to the Neotoma Paleoecology Database (https://www.neotomadb.org/), for instance. My motto could be: **Serve and Share**.

Many thanks again for all those moments shared. Pierre alias **Pollinix**.

Remerciements de Pierre J.H. Richard à la suite de l'assemblée générale de CAP / ACP en 2022

Extrait du Bulletin de l'ACP, volume 45, numéro 2, Décembre 2022, pages 5 et 6:

« *… this year's gathering is dedicated to the celebration of Pierre Richard, one of the most influential Canadian palynologists, and a dear friend and long-standing member of CAP. I am very much looking forward to spending some quality time with Pierre and the rest of our CAP family as we celebrate his lifelong accomplishments.* », Florin Pendea, President. AGM of CAP/ACP, Montreal, August 16, 2022.

« *… so it is a pleasure to meet in person with members in Montreal as well as on Zoom, and to have the opportunity to recognize one of our longest-standing members and his contributions to Canadian palynology – Pierre Richard.* » Francine M.G.McCarthy, Secretary-Treasurer, AGM of CAP/ACP, Montreal, August 16, 2022.

« … most influential Canadian palynologist … », « … *long-standing member of CAP* … », j'ai été et suis toujours fortement ému par de tels propos à mon égard et je soupçonne qu'ils soient justifiés simplement par le temps qui passe.

C'est un fait, je suis un membre fondateur de l'ACP en 1978 mais pour ce qui est de me qualifier de « membre très influent », je dois à la vérité de dire que de très nombreux palynologues canadiens, dans le passé comme à présents, méritent largement une telle qualification et pour de très nombreux aspects de notre riche et diverse discipline. La page du site *ouèbe* de l'ACP portant sur les « Palynological personalities » (https://canadapaly.ca/library-resources/palynological-personalities/) en témoigne éloquemment mais elle omet plusieurs personnes dont le nom vient naturellement à l'esprit, dont Jim Ritchie, Jock McAndrews, Bob Mott et tant d'autres, sans parler d Alwynne Beaudoin, Anne de Vernal, Konrad Gajewski Michelle Garneau Francine McCarthy et Florin Pendea présents à l'assemblée générale de 2022, et j'en passe. Je suis aussi profondément touché par la présence de Bianca Fréchette et de Julie Loisel, anciens étudiants, et de Hans Asnong et Alayn C. Larouche, anciens étudiants devenus agents de recherche dans mon labo.

De tout cœur, je vous remercie d'avoir organisé une fête en mon honneur à cette assemblée générale de 2022 tenue à Montréal.

J'ai découvert la palynologie et l'analyse pollinique en 1966 durant ma 3è année du baccalauréat en foresterie à l'Université Laval. J'avais alors 19 ans. Le professeur Grandtner me montra du pollen de pin

au microscope, me laissa 3-4 livres et me dit en substance : « C'est tout ce que je sais; c'est maintenant à vous de jouer ». Ce que je fis. J'ai complété un mémoire de fin d'étude (Printemps 1967) sur la représentation pollinique d'une Sapinière à bouleau blanc au nord de la Ville de Québec, soutenue par une description du pollen de de la plupart des arbres et quelques arbustes indigènes du Québec. Dans l'intervalle, le Doyen de la faculté et les membres du Département d'écologie et de pédologie m'ont offert d'effectuer des études doctorales à l'étranger, puis revenir à Laval en tant que professeur et d'y mettre sur pied un laboratoire de palynologie. Grosse mission pour un jeune homme! Satisfaire le projet de mes professeurs m'était tout naturel et remplir « La Mission » fut mon unique motivation. J'ai choisi d'étudier avec Madame Madeleine Van Campo au *Muséum national d'histoire naturelle* de Paris. On m'avait aussi proposé d'étudier avec Margaret B. Davis alors à Yale, ou avec Gunnar Erdtman en Suède, mais j'étais réticent en raison de ma méconnaissance de la langue anglaise... De retour à Québec en 1971, le Doyen avait changé et le nouveau n'a pas respecté l'entente. J'étais donc chômeur. Heureusement, j'ai décroché un poste temporaire à l'Université du Québec à Chicoutimi, créé un laboratoire et un Service à la recherche en analyse pollinique, puis déménagé labo et Service au Département de géographie de l'Université de Montréal en juin 1976. C'est à Chicoutimi que j'ai complété mes travaux doctoraux et la soutenance de thèse eut lieu à Montpellier (France), en Octobre 1976, après 9 ans de dur labeur et de multiples additions au projet initial pour décrocher ce Doctorat d'État français en Sciences naturelles. J'ai pris ma retraite en 2012.

Ceux qui me connaissent savent trop bien que je pourrais continuer à vous raconter mon histoire (ou d'autres souvenirs) durant des pages et des pages, mais je me contenterai de dire que je suis un gars très chanceux. Durant toutes ces années, l'enseignement fut pour moi une stimulante occasion d'apprendre. Mes recherches, fortement orientées par les contrats de service en analyses pollinique et macrofossile, se sont révélée autant d'occasions d'interagir avec des chercheurs d'autres disciplines et d'élargir mes connaissances. Mon implication comme rédacteur en chef d'une revue scientifique durant 30 ans a joué le même rôle. Je suis profondément reconnaissant de ces générations d'étudiants qui ont patiemment subi mes cours. Je suis redevable à toutes ces personnes exceptionnelles que j'ai rencontrées ou avec lesquelles j'ai travaillé. Je souhaite vivre assez longtemps pour publier quelque chose sur les trop nombreux sites restés inédits au fil du temps, et de contribuer davantage à la Base de données paléoécologiques Neotoma (https://www.neotomadb.org/), par exemple. Ma devise pourrait être: **Servir et Partager**.

Merci encore pour tous ces moments partagés.
Pierre alias **Pollinix**.

Student Award

Every year the CAP recognizes students' contributions to 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 research award intends to support student research with a strong palynological component. The award consists of a three-year membership in the Association and $200 to $500 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;
(3) a letter of support from the student's supervisor.

Applications may be submitted in French or English and should be submitted by email. Completed applications are due by March 15.

Submit applications by e-mail to the CAP Executive (canadian.palynology@gmail.com).

Note: the total amount of the award may be split between two applicants, at the discretion of the evaluation committee. There is no limit to the number of times a student can apply.

Recent Publications

** denotes a CAP member*

*Allan, E., Douglas, P. M., *de Vernal, A., Gélinas, Y., & Mucci, A. O. (2023). Palmitic Acid Is Not a Proper Salinity Proxy in Baffin Bay and the Labrador Sea but Reflects the Variability in Organic Matter Sources Modulated by Sea Ice Coverage. *Geochemistry, Geophysics, Geosystems, 24*(9), e2022GC010837.

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*Gajewski, K., Neil, K., Ponomarenko, E., Ershova, E., Stewart, B., Neily, P., & Quigley, E. (2023). Climate, fire disturbance regime, and vegetation response of the past 2500 years for central Nova Scotia. *Ecosphere, 14*(11),

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*Galloway, J.M., Grasby, S.E., Wang, G., Hadlari, T., Dewing, K., Bodin, S., Sanei, H., 2023. A mercury and trace element geochemical record across oceanic anoxic event 1b in Arctic Canada. *Palaeogeography, Palaeoclimatology, Palaeoecology 617*, 111490

*Galloway, J.M., Lindström, S. 2023. Impacts of large-scale magmatism on land plants. Elements (In press).

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*Galloway, J.M., Palmer, M., Parsons, M., Nasser, N., Falck, H., Roe, H.M., Patterson, R.T. (2023). Mercury concentration near-surface lake sediments of the Yellowknife area, Northwest Territories, Canada. *Geological Survey of Canada*, Open File 8949, 30 p.

Gurdebeke, P.R., Mertens, K.N., Rajter, L., Meyvisch, P., Potvin, E., Yang, E.J., André, C., *Pospelova, V., Louwye, S. (2023). The ciliophoran affinity of Radiosperma textum, and its relation to other marine ciliate cysts. *Marine Micropaleontology, 178*, 102185(2022), pp. 17.

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Meyvisch, P., Mertens, K.N., Gurdebeke, P.R.,*Pospelova, V., Sandt, C., Borondics, F., Vrielinck, H., Louwye, S. (2023). Does dinocyst wall composition really reflect trophic affinity? New evidence from ATR micro-FTIR spectroscopy measurements. *Journal of Phycology, 59*, 1064-1084.

Obrezkova, M.S., *Pospelova, V., Kolesnik, A.N. (2023). Diatom and dinoflagellate cyst distribution in surface sediments of the Chukchi Sea in relation to the upper water masses. *Marine Micropaleontology, 178*, 102184(2022), pp. 28.

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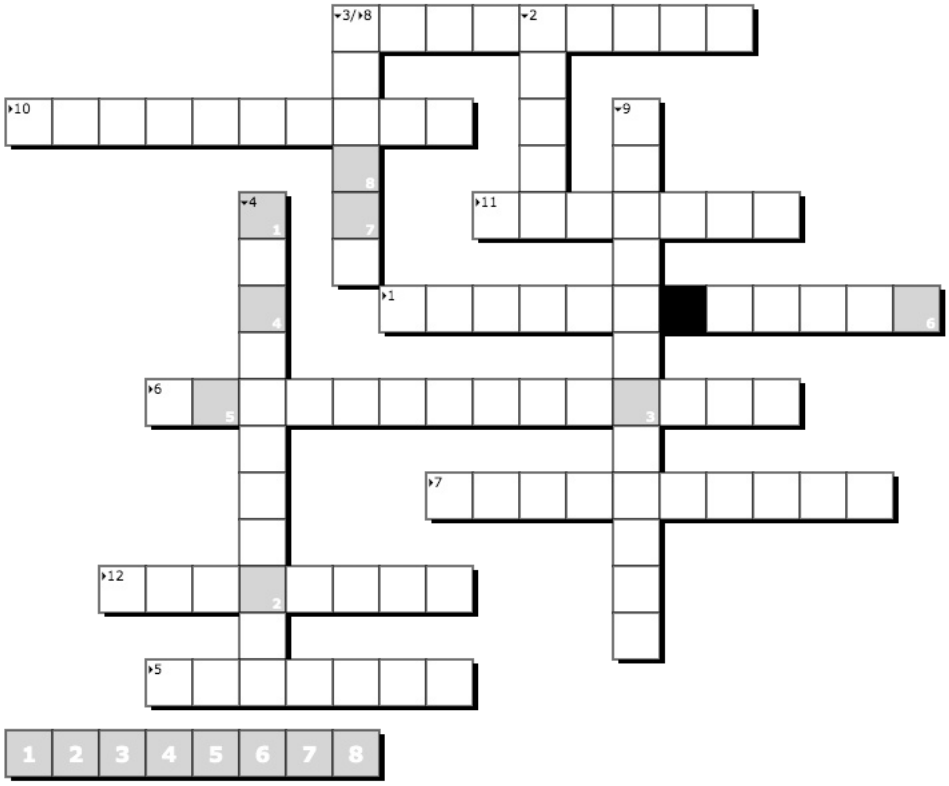
Editor's Game

1. Collection of microspores that assists with plant fertilization.
2. Environment consisting mainly of cone-bearing evergreens, such as firs, pines, and spruces, and some deciduous trees, such as larches, birches, and aspens.
3. Oxygenless.
4. Pollen grains and spores of a region or site, considered as a whole.
5. Large open area of grassland.
6. Single-celled organism with two flagella.
7. Sequence of sediment or rock at a particular place used to establish a reference point on a geologic time scale.
8. Define any organic-walled microfossils that cannot be assigned to a known biological group.
9. System for naming things.
10. In biology, the study of the size, shape, and structure of animals, plants, and microorganisms.
11. Large mammal of an extinct genus, from the Pleistocene, having hairy skin and ridged molar teeth.
12. Soil science.

Pierre's alias?



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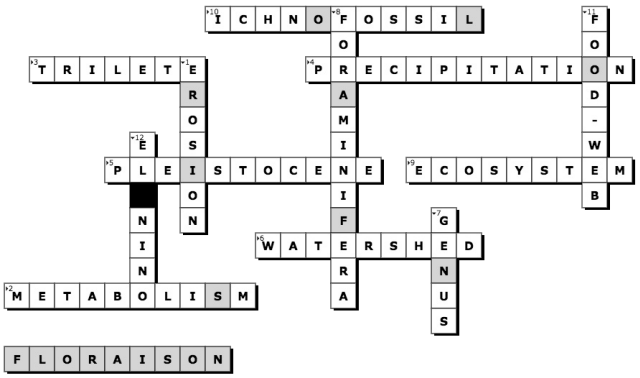
May 2023 solutions



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https://www.xwords-generator.de/en

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 $15 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 for a reduced amount of $40.
You have two options to join or renew:

(1) fill out the online form at https://capacp.wordpress.com/membership/ and send an e-transfer to CAP Secretary-Treasurer Francine McCarthy (fmccarthy@brocku.ca)

(2) is to complete and print this form and attach a cheque (Canadian bank only) or money order payable to CAP, and mail the form and payment to the following address:

Prof. Francine McCarthy, Dept. of Earth Sciences, Brock University
St Catharines, ON, L2S 3A1, CANADA

Name:
Affiliation:
Address:
Tel: Fax:
E-mail:

Research interests:

Do you want to make a donation towards the Annual CAP Student Research Award?
Yes ☐ No ☐ Amount:

New membership ☐ Renewal ☐ Total amount enclosed:

If you are the head of a palynology laboratory in Canada, may we include your name/address/research interests/webpage in the online "Directory of Canadian Palynology labs" on the CAP website? Yes ☐ No ☐

Lab page URL:
Do you permit your name/address/email address to be included in the printed "World Directory of Palynologists" being compiled by IFPS? Yes ☐ No ☐