Canadian Association of Palynologists
Association Canadienne des Palynologues

NEWSLETTER

Volume 40 Number 1 May 2017

President's Message

It is a great pleasure to report that this year the CAP award subcommittee had a difficult time deciding between four excellent student proposals. The 2017 Student Research Award recipient is Magdalena Sobol, who is a fourth-year Ph.D. student at the University of Toronto with Dr. Sarah Finkelstein. Magdalena's research focusses on high-resolution Holocene paleoenvironmental reconstructions in Southern Africa using pollen, phytoliths, ^{d13}C of soil organic matter, and macrocharcoal proxies. The Executive should consider expanding the number of future awards, aiming to award Ph.D. and M.Sc. level students.

CAP is accepting nominations and self-nominations for the position of President Elect for 2018-2019. Individuals interested in contributing to the CAP Executive, should send me (vpospe@uvic.ca) a letter of interest along their CV by the 23rd of September, 2017. The finalized list of candidates will be posted on our website and circulated by e-mail to CAP members. Electronic ballot elections will close on September 30th, to be ratified at the next AGM in October.

The next Annual General Meeting of the Canadian Association of Palynologists will be held on October 10th (2017) at the University of Victoria, SEOS, Bob Wright Centre - Ocean, Earth and Atmospheric Sciences, Room A440. Please mark your calendars and consider joining us in person, via Skype (or any other Internet media), or by phone from 11:00 am to 1:00 pm (PST). It would make a difference for CAP, if each of us encourages at least one of our graduate or undergraduate students to become a new CAP member and take part in the meeting.

It was suggested, and the Executive supports the idea, that the 2018 CAP AGM is to be held in Calgary during the Palynological Society (AASP) meeting. Please let me know if you have suggestions on special sessions that CAP should propose for the joint meeting.

The 11th International Conference on Modern and Fossil Dinoflagellates (Dino 11) will take place in Bordeaux, July 17- 21 (2017). There are a number of scheduled sessions, workshops, and field trips that would be of interest to palynologists. The complete program will be available in a month, but it looks as CAP will be well represented by our members who are working on modern and fossil dinoflagellate cysts. I hope to see many of you at the meeting.

Vera Pospelova, CAP President
vpospe@uvic.ca

CAP EXECUTIVE 2017

President: Vera Pospelova
President elect: Audrey Limoges
Secretary-Treasurer: Jesse Holst Vincent
Website Editor: Manuel Bringué
Newsletter Editor: Florin Pendea
IFPS Councillor: Simon Goring

ISSN 1188-3596

Editor's Notes

Thank you to all who contributed material for this edition of the *CAP Newsletter*:

K. Bell, D.R. Braman, M. Bringué, V. Bryant, K. Gajewski, T. Lacourse, K-B. Liu, V. Pospelova, J. Vincent, Q. Yao, and J.M. White.

Deadline for Next CAP Newsletter

Please submit items for the next issue of the *CAP Newsletter* (Volume 40, Number 2, December 2017) by November 10, 2017. 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:

Florin Pendea
CAP Newsletter Editor
ifpendea@lakeheadu.ca

Table of Contents

CAP STUDENT AWARD

I am happy to inform you that this year we had four very strong applicants, and the CAP Student Prize was awarded to Magdalena Sobol (Ph.D. student, Department of Earth Sciences, University of Toronto, Supervisor: Dr. Sarah A. Finkelstein).

Magdalena's doctoral research focusses on environmental controls on savanna-desert transitions in Southern Africa. The main field site she is working at is a paleo-lake in central South Africa, adjacent to the Kalahari margin (Kathu Pan). This is a site of great significance to Stone Age archaeology for Southern Africa and Magdalena has participated in several seasons of field sampling with multi-disciplinary teams of sedimentologists/geomorphologists, archeologists and geophysicists. She is developing a multi-proxy Holocene record from this site which includes pollen. The pollen work has been challenging due to low concentrations, poor preservation and low taxonomic resolution. Magdalena has responded to these challenges in several ways, firstly by developing a synthesis paper of modern pollen sites. She has gathered all available data (published, and unpublished. through her networks in South Africa) and is adding 20-30 new

sites. She collected these new surface samples on a transect from interior South Africa to Botswana. This paper (in preparation) will be a key contribution to the community as in addition to bringing together the largest dataset yet available for Southern Africa, she also develops random forest classification methodologies to better assign fossil assemblages to savanna vs grassland biomes. Secondly, Magdalena is producing charcoal and phytolith records from the Kathu Pan sediments to support the pollen-derived interpretations. She would like to also include stable isotope measurements and this is what she is proposing for the CAP funds.

Vera Pospelova
Chair of Awards Selection Committee

Palynfo

Members in the News
Vaughn Bryant
in
Bee Culture

Dr. Vaughn Bryant from the Department of Anthropology at Texas A& M University was recently featured in the April 2017 issue of the popular beekeeping magazine "Bee Culture".

His article "Searching for pollen in Honey—It's not as easy as you think" introduces the readers to the fascinating yet daunting task of identifying pollen in honey.

Dr. Bryant was recently awarded the Medal for Scientific Excellence by the American Association of Stratigraphic Palynologists (AASP) for his years of outstanding dedication to teaching, research and service to the community.

Mark your calendars
CAP AGM 2017

Our next CAP AGM will be on Tuesday, October 10th, at 11 am PST.

Where: University of Victoria, SEOS, Room A440 (Bob Wright Centre - Ocean, Earth and Atmospheric Sciences). Participation is now possible by Skype. Please contact Dr. Vera Pospelova (vpospe@uvic.ca) for details on how to connect to the meeting.

Please encourage students and postdocs to attend!

New CAP website now online!

It is with great pleasure and enthusiasm that I joined the CAP Executive as the new Website Editor last October at the AGM in Victoria. I am relieving Alwynne Beaudoin from a post she has occupied since its creation in 1995. Needless to say that Alwynne's contribution to Canadian Palynology is invaluable, having built and maintained CAP's web presentation, written many original articles for the newsletter herself and contributed to the Association in so many other ways over more than two decades!

I am pleased to announce that the new CAP website (capacp.wordpress.com) was released this January. Although it has a fresh new face and is now hosted by WordPress, most of its content comes directly from the original website, at times slightly modified, and therefore all credit goes to Alwynne and the CAP members who contributed to the Newsletter over the years! In addition to information regarding CAP's organisation and structure, you will also find in the new site popular items such as the list of thesis related to Canadian palynology, some of Lou Maher's most prized tips, and links to major palynology labs in Canada. Thankfully, Alwynne kindly accepted to keep a lot of the original content on her personal website (www.scirpus.ca) and I encourage everyone to explore the wealth and breadth of information she hosts.

The website continues to serve mainly as an online repository of Newsletter articles. Although it does not currently provide all content in both official languages, we strongly encourage contributions in French! We hope that this will help better reflect the diversity within the CAP membership.

New contributions are always welcomed for the Newsletter and/or the website. If you feel like sharing a few pictures of your favourite palynomorphs, it may help enhance the appearance of the web presentation while promoting interest for our beloved pollen grains or some more mysterious groups that are gaining attention. Please feel free to email me your pictures, comments or any information you would like to see updated on the website.

I would like to thank Alwynne again for her long service and dedication to the Association, and for her help in ensuring a smooth transition as the website changed hosting platforms. I look forward to serving the Canadian palynological community!

Yours truly,

Manuel Bringué, mbringue@uvic.ca

Obituary

Arthur (Art) Richard Sweet (1942-2017)

By J.M. White and D.R. Braman
23 April 2017

Dr. Arthur (Art) Sweet passed away peacefully at his home on March 5, 2017 at the age of 74. Art was one of Canada's gifted geologists and palynologists and his death is a loss to the country and the scientific community. He will be missed by all of those whose lives he touched.

Art was born in Lloydminster, Sask. in November, 1942. Berry picking, grouse hunting and fishing during his childhood on the family farm by Gull Lake, Alberta, stimulated his active interest in the natural world. Plowed fields yielded interesting rocks, and traditional farming gave him knowledge that informed his future life in urban Calgary.

Art started his education, to Grade 6, in one-room schoolhouse, later earning a B.Sc. from the University of Alberta, Edmonton, in 1963. He worked as a geological assistant and science teacher until completing his Ph.D. in 1972 at the University of Calgary, majoring in palynology under the guidance of Dr. Len Hills. From 1969 to 1971, he was granted the Izaak Walton Killam Memorial Award for doctoral students of outstanding caliber, while completing his thesis on *Azolla* and *Azollopsis*. In 1972, Art started as a Research Scientist at the Geological Survey of Canada, for a year in Ottawa and then in Calgary at the Institute of Sedimentary and Petroleum Geology (now GSC-Calgary), where he remained throughout his career. Art married his wife, Alberta, in 1966 and they have three children, David, Patrick and Karilynn and seven grandchildren.

At the GSC, Art first worked on Late Jurassic and Early Cretaceous terrestrial palynofloras for the coal group. He was soon drawn to study the incredible diversification of angiosperms in the Cretaceous, and the post 'K-T' boundary flora of the Paleogene. His objective was to understand angiosperm pollen phylogenies and to develop more refined biostratigraphies for western and northern Canada, often with synergistic collaboration from paleomagnetic studies. Art's encyclopedic memory, for both literature and for pollen and spore specimens that he had seen, made him a scientist well suited to explore this diverse and formative interval of angiosperm development. The 'Cretaceous-Tertiary' boundary and contiguous strata particularly fascinated him. Many end-of-hallway coffee conversations dealt with the perturbations of floras around the world-changing Cretaceous-Paleogene boundary event. The iridium anomaly provided a precise correlation, and Art made detailed investigations of many sections in western and northern Canada, including co-leader of a Canadian Continental Drilling Project, while he meticulously documented palynological evidence of floral transitions preceding, and following the boundary. He

elucidated both stratigraphic and latitudinal changes in flora and vegetation. In later years, his biostratigraphic knowledge was applied to derive a record of now-eroded sedimentary rock that once covered the Slave Craton, evidence being derived from fossiliferous sedimentary clasts within kimberlites. His most recent focus was the Albian through Paleogene strata of Bylot Island and the Yukon and Northwest Territories. From 2002-2008, he served as GSC's Chief Paleontologist and Paleolab Leader.

A contributor of geologically essential age and environmental information, Art authored or co-authored at least 119 professional publications and 127 abstracts and/or posters at scientific meetings. GSC paleontologists support the research of GSC's stratigraphers and mappers by reporting on referred samples. Art authored 390 GSC internal Paleontology Reports on some 4700 samples. These internal reports are substantial research documents in their own right. Art recorded the slide and microscope coordinates of important specimens from his research, leaving a detailed record of evidence for the future. Art personally collected 12,516 outcrop and well samples between 1967 and 2015. The tally of publications, reports and samples documents his contribution to Canadian geology, to 'K-T' boundary studies, and to the research and careers of his collaborators and colleagues, inside and outside the GSC.

Art's office was located opposite the palynology laboratory and he was the principal scientist supervising the palynology lab. Working with lab technicians, he always aimed for the optimum preparation of samples; often having samples reprocessed a number of times.

Art Sweet's scientific career is shown by his bibliography, but this misses the personal side of Art. Clearly, he was immensely dedicated to his discipline of palynology and geology. At the start of the working day, it was routine to find Art already in his office, having arrived at 3 or 4 AM; likewise, if chance had one driving by the GSC in the evening, one would regularly see his office light on. Evenings at home we often spent writing papers, or reviews for journals. He seemed to pack two careers of dedicated work into one lifetime. He continued to work past formal retirement age until ill-health began to limit him.

In spite of his scientific accomplishments, Art was self-effacing. He was generous to others with his time and expertise, and invariably kind and thoughtful to colleagues, students, and new-comers. He helped many people start their careers. His open office door was pasted with jokes and a sign, "A clean desk is a sign of absolutely nothing else to do". Hospitality was often extended to out of town visitors. Art wanted to make sure that people were comfortable, had a place to stay, a home-cooked meal, perhaps even a pit roasted pig.

Few days went by when Art did not have a colleague or visitor seeking advice from his extensive knowledge of Mesozoic and Cenozoic stratigraphy and palynology, or an application of his expertise. He was gracious and kind through innumerable interruptions, the best sort of mentor students, or junior colleagues, could have. For students, "Art….created a story with every pollen grain and made even a lack of evidence exciting… every student/casual [employee] over 15 years gain[ed] an appreciation for the science….he did this in such a subtle and humble way." (K. Boyce, 27 March 2017). Art developed particularly long lasting, fruitful relationships in science. He is honoured by the naming of two species: a fungal spore, *Diplodites sweetii*, (Kalgutkar et al.,1993. Review of Palaeobotany and Palynology, v 77, p. 107-118) "in recognition of his outstanding contribution to Tertiary palynology and his significant role in the understanding and interpretation of the K-T boundary"; and the pollen *Parviprojectus sweetii* (White, 2009. Geological Survey of Canada, Bulletin 594), dedicated for his "career-long fascination with triprojectate pollen".

Art loved making 'flower power' posters

for scientific meetings, and had a strong artistic aptitude in their creation. And he seemed to thrive on the pre-meeting pressure of poster preparation, still sitting at his microscope mere days before departure, interacting with a student doing the computer graphics. Work and discussions were fueled by frequent cups of instant coffee, his drunk from a blackened melamine mug ("one shake or two" he would ask when preparing a visitor's instant coffee).

Self-sufficiency was a core value derived from Art's childhood, and he bought a prairie pioneer knowledge to his food growing and storage. Alberta, Art and children had a rich, productive garden in Calgary - it was more than a hobby. They understood the need to nourish the soil. In the fall Art often had a truckload of leaves, collected by the landscaper from the GSC grounds, delivered to his driveway. Dug into the garden, the leaves produced a deep, friable, fertile soil. And who but Art would think of leaving potatoes out on the ground for a prairie winter, covered only by a blanket and a pile of leaves; lift the blanket and grab a potato. Art and Alberta also had a 30 year-long bee keeping business. Coffee conversation often turned to bees, with a hint of competition between Art and John Utting, over whose bees were most productive, and whose honey was best.

Art said that he would like to think his as a "life of service and a life of science". His children list values that he instilled in them: 'family first, work hard, be self-sufficient, be kind and humble, sit up straight and smile'.

Arthur R. Sweet, Ph.D. Bibliography

This bibliography has been compiled from Dr. Sweet's own bibliography and from records compiled by Dr. Dennis Braman. Abstracts and poster presentations have been omitted.

THESIS

Sweet, A.R. 1972. Taxonomy, Evolution, and Stratigraphic Value of *Azolla* and *Azollopsis* in the Upper Cretaceous and Early Tertiary. Unpublished Ph.D. Thesis. University of Calgary, 403 p.

JOURNAL PUBLICATIONS

Sweet, A.R. and Hills, L.V. 1971. A study of *Azolla pinnata*, R. Brown. American Fern Journal, v. 61, p. 1-13.

Hills, L.V., Smith, R.E. and **Sweet, A.R.** 1971. Upper Devonian megaspores of Northeastern Banks Island, N.W.T. Bulletin of Canadian Petroleum Geology, v. 19, p. 799-811.

Wall, J.H., **Sweet, A.R.** and Hills, L.V. 1971. Paleoecology of the Bearpaw and contiguous Upper Cretaceous Formations in the C.P.O.G. Strathmore Well, Southern Alberta. Bulletin of Canadian Petroleum Geology, v. 19, p. 691- 702.

Hills, L.V. and **Sweet, A.R.** 1972. .The use of "Quaternary O" in megaspore palynological preparations. Review of Palaeobotany and Palynology, v. 13, p. 229-231.

Sweet, A.R. and Chandrasekharem, A. 1973. Vegetative remains of *Azolla schopfii* Dijkstra from Genesee, Alberta. Canadian Journal of Botany, v. 51, p. 1491-1496.

Sweet, A.R. and Hills, L.V. 1974. A detailed study of the genus *Azollopsis* Hall, 1968. Canadian Journal of Botany, v. 52, p. 1625-1642.

Hills, L.V., Klovan, J.E. and **Sweet, A.R.**. 1974. *Juglans eocinerea* n. sp., Beaufort Formation (Tertiary), southwestern Banks Island, Arctic Canada. Ca-

nadian Journal of Botany, v. 52, p. 65-90.

Hills, L.V., Chi, B.I. and **Sweet, A.R.** .1975. The genus *Ocksisporites* Chaloner. Review of Palaeobotony and Palynology, v. 19, p. 101- 115.

Sweet, A.R. and Hills, L.V. 1976. Early Tertiary species of *Azolla* subg. *Azolla* sect. *Kremastospor*a from western and Arctic Canada. Canadian Journal of Botany, v. 54, p. 334-351.

Sweet, A.R. 1979. Jurassic and Cretaceous megaspores; *In* Contributions of Stratigraphic Palynology, Mesozoic Palynology. American Association of Stratigraphic Palynologists, v. 2, p. 1-30.

Sweet, A. R. and Jerzykiewicz, T. 1985. The Cretaceous-Tertiary boundary. Geos, v. 14, no. 4, p. 6-9.

Jerzykiewicz, T. and **Sweet A.R.** 1986. The Cretaceous-Tertiary boundary in the central Alberta Foothills: I. Stratigraphy. Canadian Journal of Earth Sciences, v. 23, p. 1356-1374.

Sweet, A. R. 1986. The Cretaceous-Tertiary boundary in the central Alberta Foothills: II. Miospore and pollen taxonomy. Canadian Journal of Earth Sciences, v. 23, p. 1375-1388.

Sweet, A.R. and Jerszykiewicz, T. 1987. Sedimentary facies and environmentally controlled palynological assemblages; their relevance to floral changes at the Cretaceous-Tertiary boundary. *In* P.J. Currie and E.H. Koster (eds.), Fourth Symposium on Mesozoic Terrestrial Ecosystems, Short Papers, Occasional Papers of the Tyrrell Museum of Palaeontology, no. 3, p. 206-211.

Lerbekmo, J. F., **Sweet, A. R.** and St. Louis, R. M. 1987. The relationship between the iridium anomaly and palynological floral events at three Cretaceous-Tertiary boundary localities in Western Canada. Geological Society of America Bulletin, v. 99, p. 325-330.

Sweet, A.R. and McIntyre, D.J. 1988. Late Turonian marine and nonmarine palynomorphs from the Cardium formation, north- central Alberta Foothills, Canada. *In* James, D.P. and Leckie, D.A. (eds.), Sequences, stratigraphy, sedimentology: surface and subsurface, Canadian Society of Petroleum Geologists, Memoir 16, p. 499-517.

Jerzykiewicz, T. and **Sweet, A.R.** 1988. Sedimentological and palynological evidence of regional climatic changes in the Campanian to Paleocene sediments of the Rocky Mountain Foothills, Canada. Sedimentary Geology, v. 59, p. 29-76.

Sweet, A.R., Jerzykiewicz, T., McIntyre, D.J., McNeil, D.H., Braman, D.R. and Lerbekmo, J.F. 1989. Proposal for three coreholes intersecting the Cretaceous-Tertiary boundary in the southern interior plains of Canada. *In* Scientific Drilling: Sedimentary Basins, Canadian Continental Drilling Program, CCDP Report 89-3, p. 8-9.

Sweet, A.R. 1990. Palynofloras and climates of the Santonian to Paleocene of midcontinental North America. Proceedings of the Symposium "Paleofloristic and paleoclimatic changes in the Cretaceous and Tertiary", Prague, p. 99-103.

Sweet, A.R., Braman, D.R. and Lerbekmo, J.F. 1990. Palynofloral response to K-T Boundary events - A transito-

ry interruption within a dynamic system. *In* Sharpton, V.L. and Ward, P.D. (eds.), Global catastrophes in Earth history; an interdisciplinary conference on impacts, volcanism and mass mortality. Geological Society of America, Special Paper, 247, p. 457-469.

Sweet, A.R. and Cameron, A.R. 1991. Palynofacies, coal petrographic facies and depositional environments: Amphitheatre Formation (Eocene to Oligocene) and Ravenscrag Formation (Maastrichtian to Paleocene), Canada. International Journal of Coal Geology, v. 19, p. 121-144.

McIver, E.E., **Sweet, A.R.** and Basinger, J.F. 1991. Sixty-five million year old flowers bearing pollen of the extinct triprojectate complex - a Cretaceous-Tertiary boundary survivor. Review of Palaeobotany and Palynology, v. 70, p. 77-88.

Sweet, A.R. 1992. The Cretaceous/ Tertiary boundary: an extraordinary geological event. Wat on Earth, Spring 1992, p. 9-10.

Sweet, A.R. and Braman, D.R. 1992. The K-T boundary and contiguous strata in Western Canada: interactions between paleoenvironments and palynological assemblages. Cretaceous Research, v. 13, p. 31-79.

Ridgeway, K., DeCelles, P.G., Cameron, A.R. and **Sweet, A.R.** 1992. Cenozoic syntectonic sedimentation and strike-slip basin development along the Denali Fault System, Yukon Territories. Yukon Geology, 3, p.1-26.

Nichols, D.J. and **Sweet, A.R.** 1993. Biostratigraphy of Upper Cretaceous non marine palynomorphs in north-south transect of Western Interior Basin. *In* Caldwell, W.G.E. and Kauffman, E.G., eds., The Evolution of the Western Interior Basin, Geological Association of Canada Special Paper 39, p. 539-584.

Russell, D.A., Russell, D.E. and **Sweet, A.R**. 1993. The End of the Dinosaurian Era in the Nanxiong Basin. Vertebrata Palasiatica, p. 139-145.

Dawson, F.M., Evans, C.G., Marsh, R., Richarson, R., Power, B., **Sweet, A.R.** and Edwards, W.A.D. 1994. Uppermost Cretaceous and Tertiary strata of the Western Canada sedimentary basin. *In* . Grant D. Mossop and Irina Shetsen (compilers), Geological Atlas of the Western Canada Sedimentary Basin Canadian Society of Petroleum Geologists/Alberta Research Council (Calgary/Edmonton, Alberta, Canada), p. 387-406.

Long, D.G.F., and **Sweet, A.R.** 1994. Age and depositional environment of the Rock River coal basin (NTS 95D/11 and 14), Yukon Territory, Canada. Canadian Journal of Earth Sciences, 31: 865-880.

Sweet, A.R. 1994. Relationships between depositional environments and changes in palynofloras across the K-T boundary interval. *In* A. Traverse (ed.), Sedimentation of Organic Particles, Cambridge University Press, p. 461-488.

Hoffman, G.L.; Stockey, R.A. and **Sweet, A.R.** 1995. A *Spirodela*-like plant from the Paleocene Joffre Bridge locality. American Journal of Botany, v. 82, p. 87.

Lerbekmo, J.F., **Sweet, A.R.** and Braman, D.R. 1995. Magnetobiostratigraphy of late Maastrichtian to early Paleocene sediments of the Hand Hills,

south-central Alberta, Canada. Bulletin of Canadian Petroleum Geology, v. 43, p. 35-43.

Ridgway, K.D., **Sweet, A.R.** and Cameron, A.R. 1995. Climatically induced floristic changes across the Eocene-Oligocene transition in the northern high latitudes, Yukon Territory, Canada. Geological Society of America Bulletin, v. 107, p. 676-696.

Catuneanu, O., **Sweet, A.R.** and Miall, A.D. 1996. Hingeline of foreland basins; mapping techniques and tectonic significance; the case study of the Campanian-Paleocene Western Interior. Studii si Cercetari de Geologie (1990). v. 41, p. 125-142.

Lerbekmo, J.F., **Sweet, A.R.** and Duke, M.J.M. 1996. A normal polarity subchron which embraces the K/T boundary: a measure of sedimentary continuity across the boundary and sychroneity of boundary events. *In* G. Ryder, D. Fastovsky and S. Gartner (eds.), Cretaceous-Tertiary Event and other Catastrophes in Earth History. Geological Society of America, Special Paper 307, p. 465-476.

Catuneanu, O., Miall, A.D. and **Sweet, A.R.** 1997. Reciprocal architecture of Bearpaw T-R sequences, uppermost Cretaceous, Western Canada sedimentary basin. Bulletin of Canadian Petroleum Geology, v. 45, p. 75-94.

Catuneanu, O., **Sweet, A.R.** and Miall, A.D. 1997. Hinge-line of the western Canada foreland basins as reflected within the uppermost Cretaceous Bearpaw sequences. Revue Roumaine de Geologie, v. 41; p. 87-104.

Ridgway, K.D., Trop, J.M. and **Sweet, A.R.** 1997. Thrust-top basin formation along a suture zone, Cantwell basin, Alaska Range: Implications for development of the Denali fault system. Geological Society of America, Bulletin, v. 109, p. 505-523.

Sweet, A.R. 1997. Reflections on the Cretaceous-Tertiary boundary plant record: discussion. Geoscience Canada, v. 24, p.205-206.

Sweet, A.R., Braman, D.R. and Lerbekmo, J.F. 1999. Sequential palynological changes across the composite Cretaceous - Tertiary (K-T) boundary claystone and contiguous strata, western Canada and Montana, U.S.A. Canadian Journal of Earth Sciences, v. 36, p. 743-768.

Braman, D. R. and **Sweet, A.R.** 1999. Terrestrial palynomorph biostratigraphy of the Cypress Hills, Wood Mountain and Turtle Mountain areas (Late Cretaceous-Paleocene), western Canada. Canadian Journal of Earth Sciences. v. 36, p. 725-741.

Braman, D. R., **Sweet, A.R.** and Lerbekmo, J.F. 1999. Upper Cretaceous-lower Tertiary lithostratigraphic relationships of three cores from Alberta, Saskatchewan and Manitoba, Canada. Canadian Journal of Earth Sciences, v. 36, p. 669-683.

Catuneanu, O. and **Sweet, A.R.** 1999. Maastrichtian-Paleocene foreland basin stratigraphies, Western Canada: a reciprocal sequence architecture. Canadian Journal of Earth Sciences, v. 36, p. 685-703.

Catuneanu, O., **Sweet A.R.** and Miall, A.D. 1999. Concept and styles of reciprocal stratigraphies: Western Canada foreland system. Terra Nova, v. 11, p. 1-8.

Harrison, J.C., Mayr, U., McNeil, D.H., **Sweet, A.R.,** McIntyre, D.J.,

Eberle, J.J., Harington, C.R., Chalmers, J.A., Dam, G. and Nohr-Hansen, H. 1999. Correlation of Cenozoic sequences of the Canadian arctic region and Greenland. Bulletin of Canadian Petroleum Geology, v. 47, p. 223-254.

Lerbekmo, J.F., **Sweet, A.R.** and Davidson, R.A. 1999. Geochemistry of the Cretaceous-Tertiary (K-T) boundary interval: south-central Saskatchewan and Montana. Canadian Journal of Earth Sciences, v. 36, p. 717-724.

Ridgway, K.D., Trop, J.M. and **Sweet, A.R.** 1999. Stratigraphy, depositional systems, and age of the White Mountain Basin, Denali Fault System, southwestern Alaska. Short Notes on Alaska Geology, 1999, p. 77-84.

Trop, J.M., Ridgway, K.D., **Sweet, A.R.** and Layer, P.W. 1999. Submarine fan deposystems and tectonics of a Late Cretaceous forearc basin along an accretionary convergent plate boundary, MacColl Ridge Formation, Wrangell Mountains, Alaska. Canadian Journal of Earth Sciences, v. 36, p. 433-458.

Sweet, A.R., Klassen, R.W., Lemmen, D.S. and Tokaryk, T.T. 2000. Guide to the Geology, Paleontology and Geomorphology of Grasslands National Park. *In* K. Smith Fargey, S. Duquette Larson, S. J. Grant, P. Fargey and C. Schmidt (eds.), Grasslands National Park Field Guide.. Prairie Wind and Silver Sage-Friends of Grasslands Inc., p.1 - 49.

Catuneanu, O., **Sweet, A.R.,** and Maill, A.D. 2000. Reciprocal stratigraphy of the Campanian-Paleocene Western Interior of North America. Sedimentary Geology, v. 134, p. 235-255.

Lerbekmo, J.F., and **Sweet, A.R.** 2000. Magnetostratigraphy and biostratigraphy of the continental Paleocene in the Calgary area, southwestern Alberta. Bulletin of Canadian Petroleum Geology, v. 48, p. 285-306.

Sweet, A.R. 2001. Plants, a yardstick for measuring the environmental consequences of the Cretaceous-Tertiary boundary event. Geoscience Canada, v. 28, p. 127-138.

Sweet, A.R. and Braman, D.R. 2001. Cretaceous-Tertiary palynofloral perturbations and extinctions within the *Aquilapollenites* Phytogeographic Province. Canadian Journal of Earth Sciences, v. 38, p. 249-269.

Long, D.G.F., Lowey, G.W. and **Sweet, A.R.** 2001. Age and setting of dinosaur trackways, Ross River area, Yukon Territory (105F/15). *In* D.S. Emond and L.H. Weston (eds.), Yukon Exploration and Geology 2000, Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, p. 181-198.

Belcher, C.M., Collinson, M.E., **Sweet, A.R.,** Hildebrand, A.R. and Scott, A.C. 2003. Fireball passes and nothing burns; the role of thermal radiation in the Cretaceous-Tertiary event: evidence from the charcoal record of North America. Geology (Boulder), v. 31, p. 1061-1064.

Belcher, C.M., Collinson, M.E., **Sweet, A.R.,** Hildebrand, A.R. and Scott, A.C. 2004. Reply to Comment by Robertson et al., on AFireball passes and nothing burns". Comment and Reply: Geology (Boulder), v. 32, p. e50-e51.

Trop, J.M., Ridgway, K.D. and **Sweet, A.R.** 2004. Stratigraphy, palynology, and provenance of the Colorado

Creek Basin, Alaska, USA: Oligocene transpressional tectonics along the central Denali Fault System. Canadian Journal of Earth Sciences, v. 41, p. 457-480.

Stasiuk, L.D., **Sweet, A.R.** and Issler D.R. 2006. Construction of burial history of eroded Mesozoic strata using kimberlite shale xenoliths, volcaniclastic and crater facies, Northwest Territories. Canada. International Journal of Coal Geology, v. 65, p. 129-145.

Wolfe, A.P., Edlund, M.B., **Sweet, A.R.** and Creighton, S.D. 2006. A first account of organelle preservation in Eocene nonmarine diatoms: Observations and paleobiological implications. Palaios, v. 21, p. 298-304.

Langenberg, C.W., Berhane, H., **Sweet, A.R.,** Marchioni, D. and Heaman, L.M. 2007. Regional correlations of the Ardley coal zone, Alberta Earth Sciences Report 2007-05, 31p.

Chin, K., Bloch, J., Harwood, D., **Sweet, A.R.,** Justin, T., Jaelyn, E., Stephen, C., Jakub and W., David, H. 2008. Life in a temperate polar sea; a unique taphonomic window on the structure of a Late Cretaceous arctic marine ecosystem. Proceedings - Royal Society Of London, Biological Sciences, v. 275, p. 2675-2685.

Lerbekmo, J.F. and **Sweet, A.R.** 2008. Magnetobiostratigraphy of the continental Paleocene upper Coalspur and Paskapoo formations near Hinton, Alberta. Bulletin of Canadian Petroleum Geology, v. 56, p. 118-146.

Lerbekmo, J.F., Heaman, L.M., Baadsgaard, H., Muehlenbachs, K., Evans, M.E., and **Sweet, A.R.** 2008. Normal polarity magnetosubchrons in 24r and the age of the Paleocene- Eocene boundary. Canadian Journal of Earth Sciences, v. 45, p. 781-793.

Eccles, D.R., Heaman, L.M. and **Sweet, A.R**. 2008. Kimberlite-sourced bentonite, its paleoenvironment and implication for the Late Cretaceous K14 kimberlite cluster, northern Alberta, Geology of northeastern British Columbia and northwestern Alberta; diamonds, shallow gas, gravel, and glaciers. Canadian Journal of Earth Sciences, v. 45, p. 531-547.

Grasby, S.E., Chen, Z., Hamblin, A.P., Wozniak, P.R.J. and **Sweet, A.R**. 2008. Regional characterization of the Paskapoo bedrock aquifer system, southern Alberta. Canadian Journal of Earth Sciences, v. 45, p. 1501-1516.

Eccles, D.R.; **Sweet, A.R.**; Creaser, R.A. and Heaman, L.M. 2009. A geochronological based approach to characterize the setting of the Buffalo Head Hills kimberlite field, northern Alberta, Canada. *In* D.R. Lentz, K.G. Thorne and K.-L. Beal (eds.), Proceedings of the 24th International Applied Geochemistry Symposium, v. 1, p. 239-242.

Lowey, G.W., Long, D.G.F., Fowler, M.G., **Sweet, A.R**. and Orchard, M.J. 2009. Petroleum source rock potential of Whitehorse trough: a frontier basin in south-central Yukon. Bulletin of Canadian Petroleum Geology, v. 57, p. 350-386.

Schulte, P., Alegret, L., Arenillas, I., Arz, J.A., Bown, P.R., Bralower, T.J., Christeson, G.L., Claeys, P., Cockell, C.S., Collins, G.S., Deutsch, A., Goldin, T.J., Goto, K., Grajales-Nishimura, J.M., Grieve, R.A.F., Gulick, S.P.S., Johnson, K.R., Kiessling, W., Koeberl, C., Kring, D.A., Mac-

Leod, K.G., Matsui, T., Melosh, J., Montanari, A., Morgan, J.V., Neal, C.R., Nichols, D.J., Norris, R.D., Pierazzo, E., Ravizza, G., Rebolledo-Vieyra, M., Reimold, W.U., Robin, E., Salge, T., Speijer, R.P., **Sweet, A.R**., Urrutia-Fucugauchi, J., Vajda, V., Michael T. Whalen, M.T., and Willumsen, P.S. 2010. The Chicxulub asteroid impact and mass extinction at the Cretaceous-Paleogene boundary. Science, v. 327, p. 1214-1218.

Schulte, P., Alegret, L., Arenillas, I., Arz, J.A., Barton, P.J., Bown, P.R., Bralower, T.J., Christeson, G.L., Claeys, P., Cockell, C.S., Collins, G.S., Deutsch, A.; Goldin, T.J.; Goto, K., Grajales-Nishimura, J.M., Grieve, R.A.F., Gulick, S.P.S., Johnson, K.R., Kiessling, W., Koeberl, C., Kring, D.A., MacLeod, K.G., Matsui, T., Melosh, J., Montanari, A., Morgan, J.V., Neal, C.R., Nichols, D.J., Norris, R.D., Pierazzo, E., Ravizza, G., Rebolledo-Vieyra, M., Reimold, W.U., Robin, E., Salge, T., Speijer, R.P., **Sweet, A.R.**, Urrutia-Fucugauchi, J., Vajda, V., Whalen, M.T. and Willumsen, P.S. 2010. Cretaceous Extinctions: Response. Science, v. 328, p. 975-976.

Barke, J., Abels, H.A., Sangiorgi, F., Greenwood, D.R., **Sweet, A.R.,** Donders, T., Reichart, G., Lotter, A.F., and Brinkhuis, H. 2011. Orbitally forced *Azolla* blooms and Middle Eocene Arctic hydrology: Clues from palynology. Geology Boulder, v. 39, p. 427-430.

Haggart, J.W., Mahoney, J.B., Forgette, M., Carter, E.S., Schroder-Adams, C.J., MacLaurin, C.I. and **Sweet, A.R.** 2011. Paleoenvironmental and chronological constraints on the Mount Tatlow succession, British Columbia; first recognition of radiolarian and foraminiferal faunas in the Intermontane Cretaceous back-arc basins of western Canada New insights in Cordilleran Intermontane geoscience; reducing exploration risk in the mountain pine beetle-affected area. Canadian Journal of Earth Sciences, v. 48, p. 952-972.

Bercovici, A., Vajda, V. and **Sweet A**. 2012. Pollen and spore stratigraphy of the Cretaceous-Paleogene mass-extinction interval in the northern hemisphere. Journal of Stratigraphy, v. 36, p. 165-188.

Braman, D.R. and **Sweet A.R.** 2012. Biostratigraphically useful Late Cretaceous–Paleocene Terrestrial palynomorphs from the Canadian Western Interior Sedimentary Basin. Palynology, v. 36, p. 8-35.

Galloway, J.M., **Sweet, A.R.,** Pugh, A., Schröder-Adams, C.J., Swindles, G.T., Haggart, J.W. and Embry, A.F. 2012. Correlating middle Cretaceous palynological records from the Canadian High Arctic based on a section from the Sverdrup Basin and samples from the Eclipse Trough. Palynology, v. 36, p. 277-302.

Galloway, J.M., **Sweet, A.R.**, Swindles, G.T., Dewing, K., Hadlari, T., Embry, A.F. and Sanei, H. 2013. Middle Jurassic to Lower Cretaceous paleoclimate of Sverdrup Basin, Canadian Arctic Archipelago inferred from the palynostratigraphy. Marine and Petroleum Geology, v. 44, p. 240-255.

Fox, R.C.; Rankin, B.D.; Scott, C.S. and **Sweet, A.R**. 2014. Second known occurrence of the early Paleocene plesiadapiform *Pandemonium* (Mammalia: Primates), with descrip-

tion of a new species. Canadian Journal of Earth Sciences, v. 51, p. 1059-1066.

Scott, C.S.; Spivak, D.N. and **Sweet, A.R.** 2013. First mammals from the Paleocene Porcupine Hills Formation of southwestern Alberta, Canada. Canadian Journal of Earth Sciences, v. 50, p. 355-378.

Hadlari, T., MacLean, B.C., Galloway, J.M., **Sweet, A.R.**, White, J.M., Thomson, D., Gabites, J. and Schröder-Adams, C.J. 2014. The flexural margin, the foredeep, and the orogenic margin of a northern Cordilleran foreland basin: Cretaceous tectonostratigraphy and detrital zircon provenance, northwestern Canada. Marine and Petroleum Geology, v. 57, p. 173-186.

Padilla, A., Eberle, J.J., Gottfried, M.D., **Sweet, A.R**. and Hutchison, J.H. 2014. A sand tiger shark-dominated fauna from the Eocene Arctic greenhouse. Journal of Vertebrate Paleontology, v. 34, p. 1307-1316.

CONTRIBUTIONS PUBLISHED BY GSC AND OTHER SURVEYS

Many contributions and possible downloads can be found at http://geoscan.nrcan.gc.ca/

Sweet, A.R. 1972. Palynologic study of coals and associated clastics of the Kootenay Formation, Crowsnest area. Geological Survey of Canada Report of Activities Paper 72-IB, p. 23.

Brideaux, W.W., Chamney, T.P., Dunay, R.E., Fritz, W.H., Hopkins, W.S. Jr., Jeletzky, J.A., McGregor, D.C., Norford, B.S., Norris, A.W., Pedder, A.E.H., Sherrington, P.F., Sliter, W.V., **Sweet, A.R.**, Uyeno, T.T. and Waterhouse, J.B. 1975. Biostratigraphic determinations of fossils from the subsurface of the districts of Franklin and Mackenzie. Geological Survey of Canada, Paper 74-39, 19p.

Brideaux, W.W., Clowser, D.R., Copeland, M.T., Jeletzky, J.A., Norford, B.S.; Norris, A.W., Pedder, A.E.H., **Sweet, A.R.**, Thorsteinsson, R., Uyeno, T.T. and Wall, J. 1976. Biostratigraphic determinations from the subsurface of the districts of Franklin and Mackenzie and the Yukon Territory. Geological Survey of Canada, Paper 75-10, 18p.

Hopkins, W.S., Jr., and **Sweet, A.R.** 1976. Miospores and megaspores from the Lower Cretaceous Mattagami Formation of Ontario. Geological Survey of Canada, Bulletin 256, p. 55-71.

Hopkins, W.S., Jr., and **Sweet, A.R.** 1976. A microflora from a short section of the Paleogene Kishenehn Formation, southeastern British Columbia. Geological Survey of Canada, Paper 76-1B, p. 307-309.

Sweet, A.R. 1978. Palynology of the lower part, type section, Tent Island Formation, Yukon Territory. Geological Survey of Canada, Paper 78-1B, p. 31-37.

Sweet, A. R. 1978. Palynology of the Ravenscrag and Frenchman formations. *In* J.A. Irving, S.H. Whitaker and P.L. Broughton (eds.), Coal Resources of southern Saskatchewan; a model for evaluation methodology, Canadian Geological Survey, Economic Report, v. 30, pt. 1, p. 29-39.

Sweet, A.R. 1980. Appendix 1, Palynology. *In* Jerzykiewicz, T. and McLean, J.R., Lithostratigraphical and sedimentological framework of coal-bearing

Upper Cretaceous and Lower Tertiary strata, Coal Valley area, Central Alberta Foothills. Geological Survey of Canada, Paper 79-12, p. 27-31.

Sweet, A.R. 1985. Appendix 3, Palynology. *In* Gibson, D.W., Stratigraphy, sedimentology and depositional environments of the coal bearing Jurassic-Cretaceous Kootenay Group, Alberta and British Columbia. Geological Survey of Canada Bulletin 357, p. 91-102.

Jerzykiewicz, T. and **Sweet, A. R.** 1986. Caliche and associated impoverished palynological assemblages: an innovative line of paleoclimatic research into the uppermost Cretaceous and Paleocene of southern Alberta. Geological Survey of Canada, Paper 86-1B, p. 653-663. Reprinted *In* Canadian Society of Petroleum Geologists, 1986 Core Conference, October 16 and 17, Core Research Centre, Calgary, p. 7-1 -7-19.

Ricketts, B.D., and **Sweet, A.R.** 1986. Stratigraphy, sedimentology and palynology of the Kootenay Blairmore transition in southwestern Alberta and southeastern British Columbia. Geological Survey of Canada Paper 84-15, 41p.

Jerzykiewicz, T. and **Sweet, A.R.** 1987. Semiarid floodplain as a paleoenvironmental setting of the Upper Cretaceous dinosaurs: sedimentological evidence from Mongolia and Alberta. *In* Currie, P.M. and Koster, E.H. (Eds.) Fourth Symposium on Mesozoic Terrestrial Ecosystems, Short Papers, Occasional Paper of the Tyrrell Museum of Palaeontology, p. 120-124.

Kalgutkar, R.M. **and Sweet, A.R.** 1988. Morphology, taxonomy and phylogeny of the fossil fungal genus *Pesavis* from northwestern Canada. Geological Survey of Canada, Bulletin 379, p. 117-133.

Sweet, A.R. and Braman, D.R. 1989. A distinctive terrestrial palynofloral assemblage from the Lower Campanian Chungo Member, Wapiabi Formation, southwestern Alberta; a key to regional correlation. Geological Survey of Canada, Paper 89-8, p. 32-40.

Sweet, A.R. and Kalgutkar, R.M. 1989. *Trichopeltinites* Cookson from the latest Maastrichtian of Canada. Geological Survey of Canada, Bulletin 396, p. 223-227.

Sweet, A.R., Ricketts, B.D., Cameron, A.R. and Norris, D.K. 1989. An integrated analysis of the Brackett Coal Basin, Northwest Territories. Geological Survey of Canada, Paper 89-1G, p. 85-99.

Dawson, F.M., Jerzykiewicz, T. and **Sweet, A.R.** 1989. A preliminary analysis of the stratigraphy and sedimentology of the coal-bearing Wapiti Group northwestern Alberta, *In* Langenberg, W. (ed), Advances in Western Canadian Coal Geoscience--Forum Proceeding; Alberta Research Council Information Series No. 103, p. 1-11.

Dawson, F.M.; Kalkreuth, W.D. and **Sweet, A.R**. 1992. Stratigraphy and coal resource potential of the Upper Cretaceous to Tertiary strata of northwestern Alberta. Geological Survey of Canada, Open File Report 2499, 56p.

Stott, D.F., Dixon, J., Dietrich, J.R., McNeil, D.H., Russell, L.S. and **Sweet, A.R.** 1993. Tertiary; Subchapter 4J. *In*

Sedimentary Cover of the Craton in Canada, D.F. Stott and J.D. Aitken (eds.), Geological Survey of Canada, Geology of Canada, no. 5, p. 439-465.

Dawson, F.M., Kalkreuth, W.D. and **Sweet, A.R**. 1994. Stratigraphy and coal resource potential of the Upper Cretaceous to Tertiary strata of northwestern Alberta. Geological Survey of Canada, Bulletin 466, 59p.

Catuneanu, O., Sweet, A.R., Lerbekmo, J.F. and Braman, D.R. 1995. Palynological support in understanding third and fourth order stratigraphic cycles in the uppermost Cretaceous/ Lowermost Tertiary, Western Canada Basin: an example of reciprocal proximal and distal stratigraphies. *In* J.S. Bell, T.D. Bird, T.L. Hillier, and P.L. Greener (eds.), Proceedings of the Oil and Gas Forum '95 - Energy from Sediments, Geological Survey of Canada, Open File 3058, p. 17-22.

Jerzykiewicz, T., **Sweet, A.R.,** and McNeil, D.H. 1996. Shoreface of the Bearpaw Sea in the footwall of the Lewis Thrust, southern Canadian Cordillera, Alberta. Current Research, 1996-A, Geological Survey of Canada, p.155-163.

De Freitas, T.A., **Sweet, A.** and Thorsteinsson, R. 1997 A problematic Early Cretaceous age for the conglomerates previously assigned to the Eureka Sound Group, east-central Ellesmere Island, Arctic Archipelago. Geological Survey of Canada, Current Research 1997-E, p. 21-32.

De Freitas, T.A. and **Sweet, A.R.** 1998. New observations on the geology of eastern Ellesmere Island, Canadian Arctic, part I: structure and stratigraphy in the vicinity of Franklin Pierce and Allman Bays. Geological Survey of Canada, Paper 1998-E, p. 21-30.

Sweet, A.R. 1999. Review of `Dinosaur Impressions. Postcards from a Paleontologist' by P. Taquet. Geoscience Canada, v. 26, p. 49.

Stasiuk, L.D., **Sweet, A.R.**, Issler, D.R. and McIntyre, D.J. 2002. Organic petrology, organic geochemistry, palynology, and petrophysics data from Lac de Gras kimberlites and associated sedimentary rocks and xenoliths. Geological Survey of Canada, Open File Report 4272, cd disk.

Sweet, A.R. 2008. Terrestrial Paleocene palynofloras, eastern Ellesmere Island, Arctic Canada. *In* Geology of Northeast Ellesmere Island Adjacent to Kane Basin and Kennedy Channel, Nunavut, U. Mayr (ed.), Geological Survey of Canada, Bulletin 592, p. 197-225.

Lane, L.S., Hayman, A., Utting, J. and **Sweet, A.R.** 2012. Summary of current geochemical, geophysical and biostratigraphic data for Chevron SOBC WM N. Parkin YT D-61 (UWI 300D616630137000), Eagle Plain, Yukon. Geological Survey of Canada, Open File Report 7050.

FIELD GUIDES

Wall, J.H., and **Sweet, A.R.** 1979. Field Trip Cretaceous-Tertiary, Gleichen and Bassano Districts. Canadian Society of Petroleum Geologists, Paleontology Division. 29 p.

Wall, J.H., and **Sweet, A.R.** 1982. Upper Cretaceous-Paleocene stratigraphy, micropaleontology and palynology of the Bow Valley area, Alberta. Canadian Society of Petroleum Geologists Field Trip (No. 10) Guidebook,

47 p.

Braman, D.R., Currie, P., Hills, L.V., Revel, R.D., Russell, D., **Sweet, A.R.** and Wilson, M.C. 1984. Plains region, Campanian to Paleocene. Field Trip No. 1, Sixth International Palynological Conference Calgary. 60 p.

McIntyre, D.J., **Sweet, A.R.,** and Wall, J.H. 1984. Palynology and micropaleontology of the Foothills belts near Calgary, Cenomanian to Paleocene. Field Excursion No. 3, Sixth International Palynological Conference Calgary. 73 p.

Braman, D.R., Dawson, M., Hills, L. and **Sweet, A.R.** 1990. Stratigraphy of the post Wapiabi slice: southwestern Saskatchewan and southern Alberta. Canadian Society of Petroleum Geologists, 1990 Annual Convention, Basin Perspectives, 92 pp.

Sweet, A.R., White, J.M. and McIntyre, D.J. 1990. Transect of the Front Ranges and Foothills of the Rocky Mountains. American Association of Stratigraphic Palynologists, 1990 Annual Meeting, Field Guide, 32 pp.

Braman, D.R. and **Sweet, A.R**. (compilers) 1990. Guide to uppermost Cretaceous-Tertiary strata in southern Saskatchewan and Alberta. Canadian Society of Petroleum Geologists, 1990 Annual Convention, Basin Perspectives, Calgary, 92p.

Braman, D.R. and **Sweet, A.R.** 1991. Field Guide to Uppermost Cretaceous-Tertiary strata in southern Saskatchewan and Alberta. Event Markers in Earth History, August 26-27, 1991, 55 pp.

Trop, J.M., Ridgway, K.D. and **Sweet A.R.** 1995. Geologic History of the Lower -Cantwell Formation, Cantwell Basin, South-Central Alaska. *In* The Geology and Glacial History of Denali National Park and Vicinity, GSA Field Trip #9 Guidebook & Roadlog Cordilleran Section Meeting Fairbanks, Alaska, 21 p., 6 Text-Figs.

Sweet, A.R., Braman, D.R, Catuneanu, O., and Lerbekmo, J.F. 1997. Uppermost Cretaceous-Paleocene strata in southern Saskatchewan emphasizing reciprocal stratigraphies and the Cretaceous-Tertiary boundary. *In* L. McKenzie McAnally (ed.), Upper Cretaceous and Tertiary Stratigraphy and Paleontology of Southern Saskatchewan, Canadian Paleontology Conference Field Trip Guidebook No. 6, p. 45-69.

Sweet, A.R., Klassen, R.W., Lemmen, D.S. and Tokaryk, T.T. 2000. Guide to the Geology, Paleontology and Geomorphology of Grasslands National Park. *In* F.K. Smith; L.S. Duquette; S.J. Grant; P. Fargey and C. Schmidt (eds.), Grasslands National Park Field Guide, Prairie Wind and Silver Sage-Friends of Grasslands Inc., p. 1-49.

Catuneanu, O. and **Sweet, A.R.** 2005. Fluvial Sequence Stratigraphy and Sedimentology of the Uppermost Cretceous to Paleocene, Alberta Foredeep. Association of Petroleum Geologists with SEPM. 2005 AAPG Annual Convention American, 14 p. and supplementary figures.

Recent Publications

*Bringué, M., *Pospelova, V., Calvert, S.E., Enkin, R.J., *Lacourse, T., Ivanochko, T., 2016. High resolution dinoflagellate cyst record of environmental change in Effingham Inlet (BC, Canada) over the last millennium. *Palaeogeography, Palaeoclimatology, Palaeoecology,* 441(4):787-810.

*Price, A., *Pospelova, V., Coffin, M.R.S, Latimer, J.S., *Chmura, G.L., 2016. Biogeography of dinoflagellate cysts in northwest Atlantic estuaries. *Ecology and Evolution*, 6:5648–5662.

*Price, A., Gurdebeke, P.R., Mertens, K.N., *Pospelova, V., 2016. Determining the absolute abundance of dinoflagellate cysts in recent marine sediments III: Identifying the source of *Lycopodium* loss during palynological processing and further testing of the *Lycopodium* marker-grain method. *Review of Palaeobotany and Palynology*, 226(1):78-90.

*Van Nieuwenhove, N., Baumann, A., Matthiessen, J., Bonnet, S., *de Vernal, A., 2016. Sea surface conditions in the southern Nordic Seas during the Holocene based on dinoflagellate cyst assemblages. *The Holocene* 26, 722-735, doi:10.1177/0959683615618258.

*Van Nieuwenhove, N., C. Hillaire-Marcel, H. A. Bauch, *de Vernal, A. 2016. Sea surface density gradients in the Nordic Seas during the Holocene as revealed by paired microfossil and isotope proxies. *Paleoceanography* 31, doi:10.1002/2015PA002815.

Baldini, L.M., Baldini, J.U.L., McElwaine, J., Frappier, A.B., Asmerom, Y., *Liu, K.B., Prufer, K., Ridley, H.E., Polyak, V., Kennett, D.J., Macpherson, C.G., Aquino, V.V., Awe, J., and Breitenbach, S.F.M., 2016. Persistent northward North Atlantic tropical cyclone track migration over the past five centuries. *Scientific Reports* 6:37522, doi: 10:1038/srep37522

Bianchette, T.A., *Liu, K.B., Qiang, Y., and Lam, N.S.N., 2016. Wetland accretion rates along coastal Louisiana: Spatial and temporal variability in light of Hurricane Isaac's impacts. *Water* 8(1): doi:10.3390/w8010001

Bianchette, T.A., McCloskey, T.A., and *Liu, K.B., 2016. Re-Evaluating the Geological Evidence for Late Holocene Marine Incursion Events along the Guerrero Seismic Gap on the Pacific Coast of Mexico. *PLoS ONE* 11(8): Article Number: e0161568; DOI: 10.1371/journal.pone.0161568

Bianchette, T.A., McCloskey, T.A., and *Liu, K.B., 2017. A 7000-year history of coastal environmental changes from Mexico's Pacific coast: A multi-proxy record from Laguna Mitla, Guerrero. *The Holocene*, DOI: 10.1177/0959683616687379

Chaput, M and Gajewski, K. 2016. Radiocarbon dates as estimates of ancient human population size. *Anthropocene* 15: 3-12. doi:10.1016/j.ancene.2015.10.002

Conroy, J.L., Hudson, A.M., Overpeck, J.T., *Liu, K.B., Wang, L., and Cole, J.E., 2016. The primacy of multidecadal to centennial variability over late-Holocene forced change of the Asian Monsoon on the southern Tibetan Plateau. *Earth and Planetary Science Letters* 458: 337-348.

Cooper, E, Neil, K., and Gajewski, K. 2016. A 1250-year record of Cladoceran community responses to environmental change in Lac Brûlé, southwestern Québec. *EcoScience* 23: 97-112. dx.doi.org/10.1080/11956860.2017.1286895

Ellegaard, M., Dale, B., Mertens, K.N., *Pospelova, V., Ribeiro, S. 2017. Invited book chapter #12: "Dinoflagellate cysts as proxies for Holocene and recent environmental change in estuaries: Diversity, abundance and morphology." Eds. K. Weckström et al. (eds.), *Applications of Paleoenvironmental Techniques in Estuarine Studies, Developments in Paleoenvironmental*

Research 20, DOI:10.1007/978-94-024-0990-1_12, Berlin, Germany: Springer, p. 295-312.

Figueroa-Rangel, B.L., Valle-Martínez, A., Olvera-Vargas, M., and *Liu, K.B. 2016. Environmental history of mangrove vegetation in Pacific west-central Mexico during the last 1300 years. *Frontiers in Ecology and Evolution* 4: 101. Doi: 10.3389/fevo.2016.00101

Heikkilä, M., *Pospelova, V., Forest, A., Stern, G.A., Fortier, L., Macdonald, R.W. 2016. Dinoflagellate cyst production over an annual cycle in seasonally ice-covered Hudson Bay. *Marine Micropaleontology*, 125:1-24.

*Lacourse, T., Beer, K.W, and Hoffman, E.H. 2016. Identification of conifer stomata in pollen samples from western North America. *Review of Palaeobotany and Palynology* 232: 140-150. doi: /10.1016/j.revpalbo.2016.05.005

Lane, C.S., Hildebrandt, B., Kennedy, L.M., LeBlanc, A.R., *Liu, K.B., Wagner, A.J., and Hawkes, A.D. 2017. Verification of tropical storm deposits with oxygen isotope analyses of coeval ostracod valves. *Journal of Paleolimnology* 57: 245-255.

Mertens, K.N., Gu, H., Takano, Y., *Price, A., *Pospelova, V., Bogus, K., Versteegh, G, Marret, F., Turner, R.E., Rabalais, N., Matsuoka, K. 2017. The cyst-theca relationship of *Trinovantedinium pallidifulvum*, with erection of *Protoperidinium lousianensis* sp. nov. and their phylogenetic position within the *Conica* group. *Palynology*, 41 (2):183-202.

Outridge, PM, Sanei, H., Mustaphi, C. C. and *Gajewski, K. 2017. Holocene climate change influences on trace metal and organic matter geochemistry over 7000 years in a varved Arctic lake sediment profile. *Applied Geochemistry* 78: 35 48. dx.doi.org/10.1016/j.apgeochem.2016.11.018

Paull, T, *Finkelstein, S. and *Gajewski, K. 2017. Interactions between climate and landscape drive Holocene ecological change in a High Arctic lake on Somerset Island, Nunavut, Canada. *Arctic Science* 3: 17-38. *doi:* 10.1139/AS-2016-0013

Song, B., *Li., Z., Lu, H., Mao, L., Saito, Y., Yi, S., Li, Z., Lu, A., Sha, L., Zhou, R., *Pospelova, V. 2017. Pollen record of the centennial climate changes during 9-7 cal ka BP in the Changjiang (Yangtze) River Delta plain, China. *Quaternary Research*, 87:275–287.

Yang, S.X, Li, J., *Liu, K.B., Li, R., Wen, Z.H., Ye, S.Y., Yi, S., and Chen, X.H., 2016. Pollen-spore distribution in the surface sediments of the western Bohai Sea, China. *Quaternary International* 392:213-223. DOI: 10.1016/j.quaint.2015.05.072

Yang, S.X., Li, J., Mao, L.M., *Liu, K.B., Gao, M.S., Ye, S.Y., Yi, S., Zhou, L.Y., and Wang, F.F., 2016. Assessing pollen distribution patterns and provenance based on palynological investigation on surface sediments from Laizhou Bay, China: an aid to palaeoecological interpretation. *Palaeogeography Palaeoclimatology Palaeoecology* 457: 209-220.

Yang, S.X., *Liu, K.B., Yi, S., Ye, S.Y., Li, J., Yuan, H.M., Zhao, G.M., Pei, S.F., He, L., and Ding, X.G., 2016. Distribution and provenance of modern pollen and spores in the surface sediments of Liaodong Bay, China. *Marine Geology* 376: 1-14.

Yao Q, *Liu K-b, 2017 Dynamics of marsh-mangrove ecotone since the mid-Holocene: A palynological study of mangrove encroachment and sea level rise in the Shark River Estuary, Florida. *PLoS ONE* 12 (3): e0173670.

Zhao, L., Ma, C.M., Tang, L.Y., *Liu, K.B., Mao, L.M., Zhang, Y., Lu, H.Y., Wu, S.Y., and Tu, Q.Y., 2016. Investigation of peat sediments from Daiyun Mountain in southeast China: late Holocene vegetation, climate and human impact. *Vegetation History and Archaeobotany* 25(4): 359-373.

* denotes a CAP member

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 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. Jessie Holst Vincent, CAP Secretary-Treasurer, c/o Prof. Francine McCarthy,
Dept. of Earth Sciences, Brock University, St Catharines, ON, L2S 3A1, CANADA

Name: _____

Affiliation: _____

Address: _____

_____

_____

Tel: _____ FAX: _____

E-mail: _____

Web page URL: _____

Research interests: _____

_____

New membership ☐ Renewal ☐ 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" in the CAP World Wide Web page? 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 ☐