

Alberta

Palaeontological Society Bulletin

VOLUME 31 • NUMBER 4

www.albertapaleo.org

DECEMBER 2016



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THE SOCIETY WAS INCORPORATED IN 1986

as a non-profit organization formed to:

1. Promote the science of palaeontology through study and education.
2. Make contributions to the science by: discovery; responsible collection; curation and display; education of the general public; preservation of palaeontological material for study and future generations.
3. Work with the professional and academic communities to aid in the preservation and understanding of Alberta's heritage.

MEMBERSHIP: Any person with a sincere interest in palaeontology is eligible to present their application for membership in the Society. Please enclose membership dues with your request for application.

Single membership \$20.00 annually

Family or Institution \$25.00 annually

SOCIETY MAILING ADDRESS:

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THE BULLETIN WILL BE PUBLISHED QUARTERLY: March, June, September and December. Deadline for submissions is the 15th of the month prior to publication. Material for the *Bulletin* should be sent to:

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Requests for missing *Bulletin* issues should be directed to the Editor. Send changes of contact information to the Membership Director.

NOTICE: Readers are advised that opinions expressed in the articles are those of the authors and do not necessarily reflect the viewpoint of the Society. Except for articles marked "Copyright ©," reprinting of articles by exchange newsletters is permitted, as long as credit is given.

Upcoming APS Meetings

Meetings take place at 7:30 P.M. in **Room B108,**
Mount Royal University, 4825 Mount Royal Gate SW, Calgary, Alberta.

Friday, January 20, 2017—Dr. Alexander Dutchak, University of Calgary.
Mammals and climate change in the Eocene of North America. See Page 3.

Friday, February 24, 2017—Dr. Christopher Boyd, Shell Canada.
Fossil characterization through destructive morphological modelling. See Page 4.

Saturday and Sunday, March 18 and 19, 2017—Paleo 2017: Our 21st Annual Symposium.
See Page 8.

Watch the APS website for updates.

ON THE COVER: Corallum of the Late Devonian rugose coral *Phillipsastrea* sp., Escarpment Formation, Hay River, near Enterprise, Northwest Territories. APS collection, donated by the late Dr. Meinrad Hoffmann. Catalogue number APS.2008.55A. Width of specimen is 6.4 cm. APS file photo. See story, Page 7.

Find Microfossils in Winter 2017

By Mona Marsovsky

Once again we will be searching for tiny fossils in matrix samples to aid scientific research. Join us at our microfossil sorting sessions this January, February and March. We will be using microscopes to find fossils in the matrix (“soil”) provided by **Dr. Donald Brinkman** of the Royal Tyrrell Museum of Palaeontology (RTMP) on the following Saturdays:

January 7, 2017

January 21

January 28

February 25

March 4

Join us on these dates in Room B213 at Mount Royal University from 1:00 to 3:30 P.M. All of the fossils we find will be kept by the RTMP and used in their research.

Registration is not required, but if you contact me, **Mona Marsovsky**, (403) 547-0182 or **giftshop@albertapaleo.org** and let me know you are planning to attend, then I’ll be able to inform you in case we



Microfossils collected on previous sorting sessions, from the “Sheeps Ahoy” locality, Paleocene, Scollard Formation, Alberta. Photos by Caitlin Collins.

need to cancel a session. No experience is required. Bring tweezers to pick the tiny fossils from the matrix and a pen to label your finds.

We are very grateful to Mount Royal University (especially **Mike Clark**) for allowing us to use their microscopes and lab. □

Upcoming Events

January

Alexander Dutchak

University of Calgary

Mammals and climate change in the Eocene of North America

Friday, January 20, 2017, 7:30 P.M.

Mount Royal University, Room B108

The Eocene Epoch (~55.5 to 35 million years ago) encompasses a number of significant climatic events in addition to well-documented immigration and extinction events that played an integral part in determining the current distribution of mammals across North America. In particular, the warming events of the early and middle Eocene, and the cooling event at the end of the Eocene are associated with significant fluctuations in mammalian faunal composition. The sedimentary basins of the American Rocky Mountain region, together with notable fossil deposits on the American plains and the Canadian Cypress Hills Formation, provide an excellent geologic record of this interval.

This presentation aims to discuss some of the methods used to identify climatic and mammalian faunal variability in the rock record, and how these geologic signatures relate to one another across central North America during the Eocene Epoch.

Biography:

Dr. Dutchak earned a BSc (Honours Palaeontology) from the University of Alberta in 2002. It was during his undergraduate studies, while taking classes from Dr. Richard Fox, that he developed his passion for mammalian fossils. Dr. Dutchak completed his M.Sc. from the University of Alberta in 2005 and his PhD from the University of Colorado at Boulder in 2010. His PhD dissertation was titled *Mammalian faunal change throughout the late Wasatchian and early Bridgerian early Eocene*

Climatic Optimum, Raven Ridge, Colorado/Utah. During this time, he was mentored and nurtured by Dr. Jaelyn Eberle at the University of Colorado and Dr. Richard Stucky of the Denver Museum.

Dr. Dutchak has lectured in the Department of Earth and Atmospheric Sciences at the University of Alberta (2011) and in the Department of Earth Sciences at Mount Royal University (2011 to 2014). He is presently an instructor in the Department of Geosciences at the University of Calgary (2014 to present).

Dr. Dutchak's research interests include patterns of mammalian faunal variation associated with intervals of climate change, immigration and emigration corridors between sedimentary basins, and latitudinal diversity gradients throughout the Paleogene.

February

Selina Robson

University of Calgary

Carnivorous mammals from the late Miocene of Kyrgyzstan

Friday, February 24, 2017, 7:30 P.M.

Mount Royal University, Room B108

This 15-minute presentation is in addition to the featured speaker, Dr. Christopher Boyd.

As with much of the Central Asian fossil record, the Cenozoic fossil record of Kyrgyzstan is almost entirely undocumented. Our understanding of Kyrgyz palaeobiology has recently been improved by the efforts of scientists from the University of Oregon who have begun to collect and study Kyrgyz fossils. Over the past couple of years, UO field crews have recovered more than 500 specimens, most of which are from the late Miocene to early Pliocene sediments of the Kochkor Basin.

So far, three carnivores have been identified: two hyenas and a mustelid-like carnivore. These three specimens represent the only carnivores from a fauna dominated by large ungulates, including rhinoceroses, horses and giraffids. The most complete of these carnivore fossils is a partial lower left jaw of a hyena with some premolars and molars preserved, belonging to a member of the genus *Hyaenictitherium*. Members of *Hyaenictitherium* were small jackal-

and wolf-like hyenas that had some bone-cracking tendencies. The *Hyaenictitherium* specimen was recovered from the middle Chu Formation in the Kochkor Basin, and we estimate that the hyena is about 7 million years old. The other hyena specimen is a lower left premolar that is either a member of *Hyaenictitherium* or a closely related genus. Lastly, we have a lower carnassial which belonged to a relatively large, mustelid-like carnivore. Both the hyena premolar and the mustelid-like carnassial were recovered from a sedimentary layer that is stratigraphically lower than the unit containing the hyena jaw, but both specimens are most likely still late Miocene in age. Together, these three specimens represent our current knowledge of extinct Cenozoic carnivores from Kyrgyzstan.

Biography

Selina Robson earned her B.Sc. in geology and psychology from the University of Oregon in 2016. As an undergraduate, Selina volunteered in a vertebrate palaeontology lab as a preparator, which quickly led to her discovering a love for palaeontology research. She predominantly worked with extinct carnivores from Kyrgyzstan and she described a Kyrgyz hyena fossil for her undergraduate thesis. Selina is now a Master's student at the University of Calgary, where she is studying the composition and structure of multituberculate dentine.

Christopher Boyd

Shell Canada

Fossil characterization through destructive morphological modelling

Friday, February 24, 2017, 7:30 P.M.

Mount Royal University, Room B108

Destructive analysis of fossils is not for the faint of heart. However in some circumstances, destructive analysis is the best or potentially the only way to collect the necessary data. A methodology has been developed which uses precision serial grinding and high-resolution digital photography to produce high-resolution full colour morphological models of both fossils and surrounding sediment. This technique is a highly accurate and reliable method for modelling and describing a specimen when traditional non-destructive methods fall short. Tradition-

al non-destructive methods of *in situ* fossil modelling involve the use of X-radiographs or CT scanning, both of which rely on sufficient density contrast between the fossil and the surrounding sediment. Often these techniques are unsuccessful due to low density contrasts, or cannot produce sufficiently high resolution models of large fossils. Fossil description using serial grinding and photography does not depend on a density contrast and does not have the same size limitations. This method has been used on a growing database of fossil specimens, including for taxonomic purposes and the introduction of new species.

Biography

Chris Boyd has had a passion for geology, palaeontology, and the deep past ever since his childhood searching for trilobites on the riverbanks

of Newfoundland. Chris completed his studies at Memorial University of Newfoundland. During his time at MUN he worked in both the palynology lab and the neo-ichnology research lab. Chris also ran a photography business on the side during his studies. His experience with photography combined with his passion for palaeontology led him to take on a Ph.D in morphologic modelling of fossils, where he was involved in the development of a novel high-resolution modelling technique for *in situ*, low-density specimen contrast. He has subsequently had several papers published on the topic and has introduced a new species using these methods. He currently works as a geoscientist at Shell and spends his evenings and weekends working on proto-conodonts from the lower Cambrian of Newfoundland. □

Rock 'n' Fossil Road Show 2016

Story and photos by Dan Quinsey
APS Public Outreach Committee Member

The Rock 'n' Fossil Show held on Saturday, October 15 at Crowfoot Public Library from 11:00 A.M. to 3:00 P.M. was well received by the public. As usual, the set-up and breakdown was efficient, and the crowd was a good size. There were an estimated 450 to 500 visitors, which exceeded our expectations. As always, it is difficult to get an accurate head count as you always miss a few faces and sometimes count some bodies twice.

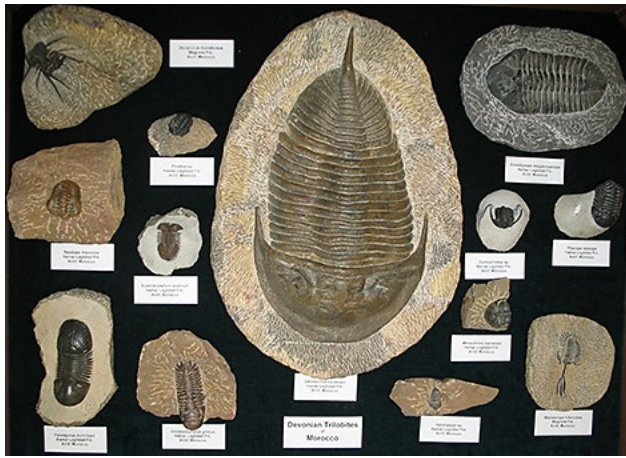
A total of thirteen part-time and full-time volunteers manned nine tables provided by library staff near the fireplace, close to the main entrance. Volunteers from the Alberta Science Network, Natural Resources Canada (NRCan), Geological Survey (GSC), and the Alberta Palaeontological Society (APS) were on hand to identify specimens, answer questions and deliver the occasional juggling act (thanks, Larry). Crowfoot Library staff were quite cooperative and accommodating.

On display were numerous specimens of rocks, minerals and fossils, including a microscope to look at micro-fossils provided by the GSC; and a showcase of fossils brought by Dan Quinsey of the APS. The APS and GSC also donated several give-away fossils for the children, big and small. To help with advertising, the GSC had set up a showcase with a few "select" specimens on display for three weeks prior to the event.

Volunteers arrived at the library to set up at approximately 10:00 A.M. Visitors began to gather quickly dur-



Geoscientists discuss rocks, minerals and fossils with members of the public.



Trilobites from Morocco. This attractive display was arranged by Dan Quinsey.



Road Show Volunteers. L–R: Sofie Gouwy, Sarah Saad, Karen Fallas, Lindsay Kung, Larry Lane, Kimberley Bell, Rob MacNaughton, Godfrey Nowlan, Dan Quinsey and Pavel Kabanov.

ing the set-up. There were so many interested participants still at the tables by the time 3:00 P.M. rolled around that we decided to let the show go overtime for about fifteen minutes. Finally, an announcement was made, thanking everyone for their interest and that it was time to close the show. The announcement was met by applause from those still around the tables. Library staff had to help with lingering visitors as we dismantled and packed the specimens and displays.

Thanks to everyone who make this event an annual success. See you again next year! ☐

Dates set for 2017 field trips

By Wayne Braunberger
Field Trips Director

The following dates have been selected for the summer 2017 field trip season:

June 17 and 18

July 15 and 16

August 19 and 20

All dates are tentative and locations have not been determined. Watch for further information in the March 2017 *Bulletin* and on the APS website: www.albertapaleo.org/fieldtrips.html. If you have suggestions for field trip destinations or would be interested in arranging or leading a field trip, please contact me: (403) 278-5154, fieldtrips@albertapaleo.org. ☐

Fossils in the News

Feathered dinosaur tail found in amber.
<http://news.nationalgeographic.com/2016/12/feathered-dinosaur-tail-amber-theropod-myanmar-burma-cretaceous/> [Thanks to Georgia Hoffman] ☐

Marks-Kucher 2017 Student Bursary

This bursary offers financial backing for students in palaeontology to take part in the Alberta Parks/Royal Tyrrell Museum one or two-day guided excavation experience program, in Dinosaur Provincial Park. Deadline for applications is April 28, 2017. For more information, download the information document and application form from the APS website: www.albertapaleo.org/markskucherbursary2017.pdf ☐

CSVP 2017 Conference at Dinosaur Park

The Fifth Annual Conference of the Canadian Society of Vertebrate Palaeontology is being held May 15–17 in Dinosaur Provincial Park. The conference will include a Technical Session (talks and posters) as well as field trips. At the time of writing, no information was available [Hello!] on the CSVP website or Facebook page, but a “First Circular” document can be had by contacting the Editor. ☐

FOUR FOSSILS

By Howard Allen, APS Collection Curator

A brief look at four more APS collection specimens this time, due to space constraints—just the facts!



APS.2010.06 (scale bar = 1 cm)

Vaclav and Mona Marsovsky attended the 2009 SVP conference in Bristol, UK. On a field trip to the Isle of Wight, they collected a number of small mollusc fossils, including these three snails, from the late Eocene Headon Hill Formation. A search of various sources, including an excellent website, www.dmap.co.uk/fossils/ reveals their likely identity as *Ptychopotamides vagus* (Solander).



APS.2004.06 (scale bar = 5 cm)

Here we have a slab of siltstone with its bedding surface covered in small scallop shells. It was donated, among a number of other fossils, by **Keith Mychaluk**. Its label gives its age as Triassic, from the Nicola Group, at “Sabiston, NW of Kamloops, BC.”



APS.1985.34 (scale bar = 1 cm)

The highly fossiliferous, Lower Carboniferous Banff Formation at Canyon Creek/Moose Dome Creek, in the foothills west of Calgary, is a popular collecting locality. This medium-sized brachiopod was donated by **Geoff Barrett**. A likely identification, based on photos in GSC Bulletin 378 (Carter, 1987), would be *Eomartiniopsis rostrata* (Girty).

APS.2008.55a (scale bar = 2 cm)

On his travels, the late **Dr. Meinrad Hoffmann** (*Bulletin*, March 2014, p. 3) frequently explored for fossils, often with success. One of his finds was this Upper Devonian colonial coral, *Phillipsastrea* sp., from the Escarpment Formation on the banks of the Hay River, near Enterprise, NWT. Countless specimens can be found weathered loose from their shaly matrix. Their size, shape, and the base of the colony (not seen here), covered in concentric growth rings, inspired our **Harvey Negrich** to coin a field name: “cow pies.” □



Paleo 2017

Alberta Palaeontological Society's
21st Annual Symposium

The Symposium

Paleo 2017 is a two day event with talks, posters and displays on Saturday, March 18 and a workshop on Sunday, March 19. Saturday programs are free and open to the public. Sunday workshop participants must register and pay a fee for manuals and materials. Main events will be centred in the lower level corridor at Mount Royal University. Lectures will be held in the Jenkins Theatre.

Call for posters and abstracts

You are invited to present a poster at Paleo 2017. The symposium will feature presentations from avocational, student and professional palaeontologists from all over western Canada. We welcome posters or displays associated with palaeontology. Invitations have been sent to staff and students of universities, natural history clubs, the Geological Survey of Canada, museums, the resource industry and the artists' community. Our aim is to showcase palaeontology to the public and foster closer relations between the APS and the above groups. There is no fee to submit a poster and abstract.

A table and stand with a 4 x 8-foot poster board will be supplied to each presenter. You should bring push pins or tape for attaching posters, but we will try to have some on hand for those who forget. Special requirements such as electricity to operate a display or a larger display area should be identified when you request a space. Presenters are requested to provide an abstract (see below). We request that poster presenters be set up by 8:30 A.M. Saturday, March 18. During the day a poster session period will be specified; please be available at least during this time for discussion of your exhibit. **Deadline for submitting requests for poster space is February 15, 2017.**

Paleo 2017 abstracts volume

A symposium abstracts volume will be published and sold at a price to cover costs. We request all speakers and poster presenters to submit abstracts or short papers for publication. **Submissions may be any length:** less than a full page is fine, multi-page abstracts or short papers will be accepted. **Contributors are encouraged to include photos and/or diagrams**, but note that colour images will be converted to black and white. Documents are not edited for content but will be formatted for publication. The author's mailing and email addresses should be included. **Submission deadline is February 15, 2017.** Download guidelines for authors (PDF) from our website, www.albertapaleo.org or contact the Editor (see contact information, next page).

Sunday Workshop—March 19, 2017

A workshop will be offered at Mount Royal University, Room B213. Attendance is limited, so register early! To register, contact **Harold Whittaker** (see next page). **Registration deadline is March 10, 2017.** Make cheques payable to Alberta Palaeontological Society. Payment may be handed to Harold or mailed to the Society's mailing address at P.O. Box 35111 Sarcee Postal Outlet, Calgary, AB T3E 7C7.

Mammal tooth identification, with Chelsey Zurowski, recent MSc graduate of the University of Calgary. A morning session from 9:00 A.M. to 12:00 P.M. and an afternoon session from 1:00 P.M. to 4:00 P.M. will be offered. Cost is \$10.00 per person.

Complex occluding teeth are considered a key adaptation in mammalian evolution and mammal molars are able to inform aspects of ecology and species relationships. This short course will introduce participants to the common shapes present in mammal molars and functional consequences of shape, with a focus on common mammalian groups and practical skills used for identification. Participants will be provided with a molar identification guide and will be able to practice identification and description skills on a range of extant and extinct specimens. These specimens will include modern mammals commonly found in Alberta, along with a selection of fossil casts. Additionally, molars from the Swift Current Creek locality that were extracted from matrix during APS sorting sessions will be available for identification. These specimens have yet to be identified and provide an opportunity for participants to make palaeontological discoveries and participate in ongoing research at the University of Calgary.

Contact Information

Paleo 2017 Committee Chairperson: Mona Marsovsky, (403) 547-0182, giftshop@albertapaleo.org

Posters & displays: Howard Allen (403) 862-3330, posters@albertapaleo.org

Presentations & Workshops: Harold Whittaker (403) 286-0349, programs1@albertapaleo.org

Abstract submissions: Howard Allen (403) 862-3330, editor2@albertapaleo.org

Advertising: Mona Marsovsky, (403) 547-0182, giftshop@albertapaleo.org

Visit the APS website for confirmation of lecture and workshop times and speakers: www.albertapaleo.org

Helpful Hints for Poster Presenters

What is a poster?

A poster is a visual medium to express results or an overview of one's research work on a topic they have chosen to study. It is something that you pin up on a board. The dimensions of a poster can vary. It can be anywhere from 2' x 3' to 4' x 8'. It contains text and images relevant to your work.

Who should do a poster?

Anyone who has an interest in sharing their work and who likes feedback from the audience (symposium attendees) should consider doing a poster.

What should be considered for a poster?

Any topic that ties in with palaeontology can be considered for a poster.

Why posters?

Written and illustrated presentations convey developments in a field of study that interests the investigator. Posters are an effective form of presentation.

A typical poster format:

- Title, Author(s), Affiliation
- Summary—sum up the study in one paragraph
- Introduction—reasons behind the work
- General information, location (study area)
- Description and interpretation
- Conclusions
- References

Dedicate a box to each one of the sections listed above. Within the box, include the text and figures

relevant to that section. Number the boxes in such a way that the reader can follow from one box to the next in your intended sequence. The structure of the framework will vary from topic to topic.

How does one make a poster?

Today, with powerful graphics and word processing software, a poster can be made entirely using a computer. The final poster image can be printed on a large-format colour printer. But you don't need a computer to do a poster! Carefully hand-lettered or typewritten text can be combined with drawings, photos or enlarged photocopies to make an effective presentation. These days it should be easy to find someone with a computer who could print out some titles or captions to add to your text.

What about the visual presentation?

Whatever the size of the poster, when one views it from one or two metres away, the type (or font) size must be large enough that the text can be easily read. Also, figures should be reasonably large. Think about when the eye doctor wants you to read off her chart of alphabets and numbers from a distance. Don't be tempted to crowd too much information onto a poster—you can overwhelm your audience. Adding colours makes a difference to the poster, and can lure viewers to your poster or even drive them away!

What's an abstract?

An abstract is just a summary of your work, from introduction to conclusion, boiled down to one or a few paragraphs. We'd like to have an abstract from each of our poster presenters and speakers, to include in the Symposium Abstracts Volume. Illustrations are encouraged (they will be converted to black-and-white).

Most of all, have fun!

APS Paleo 2017

Mount Royal University

4825 Mount Royal Gate SW, Calgary, Alberta

Presented in conjunction with the CSPG Palaeontological Division
and Mount Royal University Earth Sciences Department

Lectures and poster displays—Saturday, March 18, 2017, 9:00 AM to 4:30 PM

Workshop—Sunday, March 19, 2017, 9:00 AM to 4:00 PM

Saturday events are free to the public

There will be fossil displays and activities of interest to a wide audience including families.

The Sunday workshop requires pre-registration and a fee.

Saturday, March 18 speaker schedule

All talks will be held in Jenkins Theatre, lower level of Mount Royal University

- 9:00 AM** *Opening statement by APS President Cory Gross and symposium instructions by APS Programs Director Harold Whittaker.*
- 9:10 AM** *Mount Royal University's Cretaceous Land Exhibit*
Wayne Haglund, Mount Royal University.
- 9:15 AM** *Ice age mammals of the frozen North*
Grant Zazula, Government of Yukon.
- 10:15 AM** Coffee Break.
- 10:30 AM** *Regaliceratops peterhewsi—"Hell Boy"*
Peter Hews, Hara Consulting Limited.
- 11:00 AM** *Quantifying intraspecific morphometric variation in putative structures in ornithischian dinosaurs*
Caleb Brown, Royal Tyrrell Museum of Palaeontology.
- 11:30 AM** *Getting ahead on land: Big steps in the evolution of the early skull*
Jason Pardo, University of Calgary.
- 12:00 PM** Lunch Break and Poster Displays.
- 1:00 PM** *The Ogygopsis Shale: Old rocks, new thoughts*
Paul A. Johnston, Mount Royal University.
- 1:30 PM** *Paleontologists can be archaeologists: Use of palaeontological plaster jacketing techniques to collect an archaeological feature from Head-Smashed-In Buffalo Jump*
Darren Tanke, Royal Tyrrell Museum.
- 2:00 PM** Poster session, coffee break. Poster presenters are requested to be with their posters.
- 3:00 PM** *Morphological variation in mammoth teeth: what does it mean?*
Christina I. Barron-Ortiz, Royal Alberta Museum.
- 3:30 PM** *How humans populated North America*
Alwynne Beaudoin, Royal Alberta Museum.