

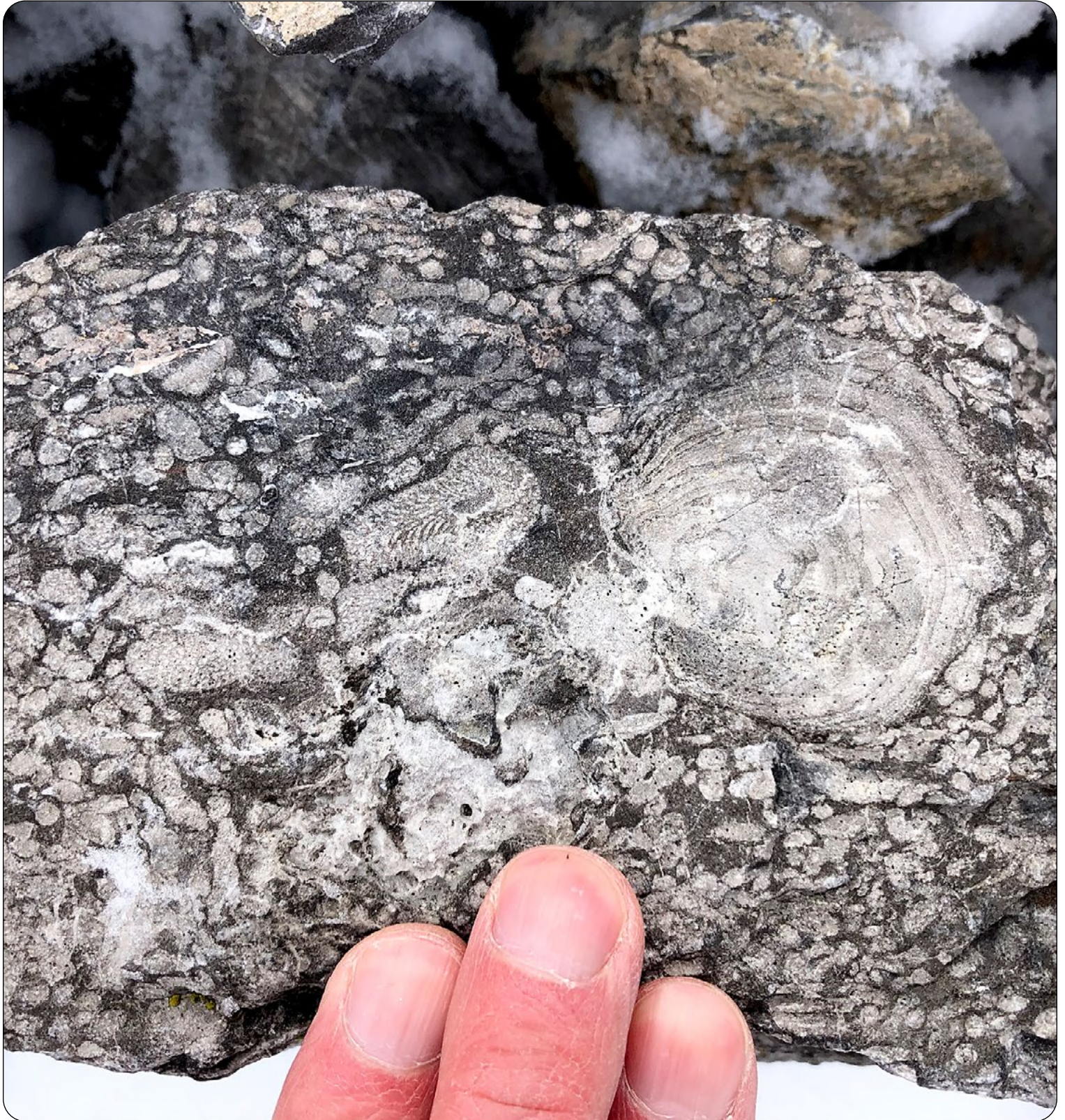
# Alberta

*Palaeontological Society Bulletin*

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JUNE 2023





# ALBERTA PALAEOLOGICAL SOCIETY

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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. Contribute 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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Requests for missing *Bulletin* issues should be directed to the Editor. Back issues are available at [www.albertapaleo.org/bulletinarchive.html](http://www.albertapaleo.org/bulletinarchive.html). 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.**

**No meetings in June, July and August. See Field Trips on our [website](#).**

**Friday, September 15, 2023—Selina Robson, University of Calgary.**

***Tentative topic: North American camelids (camel relatives).***

**Check the APS website for updates! [www.albertapaleo.org/meetings.html](http://www.albertapaleo.org/meetings.html)**

**ON THE COVER:** Alberta fossils! Back-reef/lagoonal facies dolostone with nodular stromatoporoid (large, round object right of centre); *Thamnopora* sp. tabulate coral (oblong, centre, with fine internal structure); *Ampipora* sp. and probably *Stachyodes* sp. stromatoporoid fragments (abundant small, rounded objects). Upper Devonian, Cairn Formation; Wasootch Ridge, Kananaskis Country, Alberta. Photo by Howard Allen.

# Thank you!

We'd like to thank **Steven Dixon** for making a financial donation to APS.

Watch upcoming *Bulletins* for an announcement of a major financial gift to APS from Life Member **Harvey Negrich**. □

## 2023 Annual General Meeting Election results

By Vaclav Marsovsky, Secretary

The Annual General Meeting (AGM) was held on Friday, May 12, 2022. We returned to holding the elections in person at Mount Royal University as well as on the Zoom platform. A quorum was met with 27 voting members included. The minutes of the meeting may be requested from the Secretary but in any case will be made available prior to the next AGM, scheduled for May 10, 2024.

Here are the results. Elected for 1 year term were **Cory Gross** as President, **Dr. Emily Bamforth** as Vice-President, **Vaclav Marsovsky** as Secretary, **Mona Trick** as Treasurer. Elected for a 2 year term were **Lacey Holoboff** as Program Director, **Howard Allen** for both Membership Director and Editor and **Keith Mychaluk** as Field Trip Coordinator. The President, who chaired the meeting, recognized and thanked the past board members and committee chairpersons for their volunteering and tireless service over the past year.

The financial information and financial audit were presented and a motion for the names of next year's auditor approved.

A few words about the people moving from the board or committees which they chaired for many years. **Vaclav Marsovsky** is stepping down from chairing the Website Committee and will be working on a transition over the summer. The original website design was created and launched in 1999 under the domain name **albertapaleo.org** which we have held since the beginning and the website has been updated and evolved since then. Many features were

added over the years, such as the *Bulletin* archive. The Website position was formalized in 2002 when it became an official committee of the Society. **Eric Campbell** has stepped forward to take over the development and management of the APS website.

**Harold Whittaker** moves on from Program Director. Harold has held this position since 2011 and has been a member of the APS board since 2009. Harold took over the Program portfolio from **Phil Benham** in 2011, who recently passed away as you know (*Bulletin*, March 2023). Harold was key to organizing the eight monthly speakers from September to May of each year, plus the speakers for our annual symposium and workshops. During his tenure our relationship with MRU and CSPG (now CEGA) developed and expanded and Harold was instrumental in that. The monthly presentations and symposia were conducted purely in person when Harold took over but now are presented in a hybrid format, being held in person and on-line. There were challenges both with the presentation technology and with speakers having to cancel at the last minute, requiring Harold to scramble to arrange substitutes. Harold took it all in stride. During COVID, Harold arranged for us to broadcast our monthly meetings on the CSPG webinar platform. Now we welcome **Lacey Holoboff** into the role of Program Director and she will be busy organizing a slate of new speakers for the fall. □

## Paleo 2023 Summary

By Mona Trick, Symposium Committee Chair

Finally, after the shutdown imposed by COVID-19, we were allowed to gather in person for Paleo 2023 (our 26th annual symposium) on Saturday March 18 at Jenkins Theatre at Mount Royal University. We took advantage of the learnings from last year's symposium to host a hybrid symposium with a Zoom link provided for those who could not physically attend. Eighty-one people attended in person while ten took advantage of the Zoom link to view the presentations live on line. All but three of the talks are also now available to view at any time on the APS YouTube Channel at <https://youtube.com/@AlbertaPalaeontologicalSociety>.

APS President **Cory Gross** welcomed the sym-



**Figure 1.** Jared Voris gives his presentation on tyrannosaur biology in the Jenkins Theatre. Photo by Mona Trick.

posium attendees and provided an overview of the upcoming talks.

**Dr. Paul Johnston**, of Mount Royal University, discussed the stenotheoids, found in the Lower and Middle Cambrian rocks. Unique combinations of anatomical features have resulted in different researchers placing these animals in four different phyla over the past century—namely Mollusca, Brachiopoda, Arthropoda and even their own phylum, Stenothecata. New observations from the specimens found in the Yoho River and Wash Limestone members of the Middle Cambrian Burgess Shale have led to the conclusion that the stenotheoids are most closely related to the Brachiopoda. Dr. Johnston and his colleagues have assigned them to a new total clade, Pan-Brachiopoda, a stem group of the brachiopod crown group.

**Dr. Miriam Reichel-Bodner** of Lifeways of Canada, described how the presence of calcrete (or caliche) and alternating patterns of mineralization by calcite or silica in vertebrate fossils indicates the climate of the Triassic of southern Brazil was semi-arid, hot, with low sea levels and seasonal wet and dry conditions. She noted how similar characteristics in fossils found in the Paleocene of Alberta indicate a similar climate. She stressed the importance of studying taphonomic processes, in addition to geological and chemical patterns, to determine past climate.

**Jared Voris**, PhD student at the University of

Calgary, showed how the discovery of a new species of tyrannosaur from the Foremost Formation has altered our understanding of tyrannosaur evolution and biogeography.

**Darren Tanke** of the Royal Tyrrell Museum of Palaeontology illustrated the difficulties of removing a hadrosaur (the “Kaskie hadrosaur”) with extensive skin impressions—a “mummy”—buried under 11 m of overburden in Dinosaur Provincial Park. He discussed the steps that will be needed to move the fossil in its huge jacket (approximately 5.6 t) across ecologically sensitive and protected terrain to a nearby road and thence to the museum.

**John Issa**, of Korite International, showed the spectacular ammonites and marine reptiles recovered during the mining of the ammonite gemstone in southern Alberta.

**Dr. Femke Holwerda**, from the Royal Tyrrell Museum of Palaeontology, showed how microwear and chemical composition studies of mosasaur teeth from the Campanian Bearpaw Formation (80 to 75 million years old) were used to determine what mosasaurs were eating and where. She concluded that although there was no strict separation of the different types of mosasaurs, habitat partitioning (some feeding near shore versus in the open ocean, some feeding at deeper depths) served to reduce competition for food.

Unfortunately, due to a sudden illness, **Dr. Jessica Theodor**, of the University of Calgary, was unable



to deliver her scheduled talk on protoceratid (early artiodactyl) mammal fossils. APS President **Cory Gross** stepped in at the last minute (notified at 8:00 P.M. the night before) to talk about his work as Calgary's official Historian in Residence.

**Dr. Rowan Martindale** of the University of Texas in Austin showed the exceptional fossil preservation of the Early Jurassic (183 million years old) Yahatinda Formation in Alberta. Many fossils were first exposed by the floods of 2013. She studied the geochemical, sedimentological, palaeoecological and taphonomic data to learn how the marine community responded to environmental changes and stresses (heat, acidity and anoxia). Dr. Martindale described her board game, "Taphonomy: Dead and Fossilized," which she co-developed, for teaching taphonomy using the fossils found in the Yahatinda Formation. She brought copies of the game for purchase at the APS sales table.

Participants enjoyed ten posters, featuring a wide variety of topics. There were interesting displays provided by the **Archaeological Society of Alberta**; and



**Figure 2.** Two fossils that were brought to the APS table by members of the public: a section of dinosaur bone with tooth marks, and a theropod dinosaur tooth. Photo by Dan Quinsey.

artists **Linda McKendry** and **Adrianah Thompson**. Fossil displays were provided by **Matthew Smith**, **Lacey Holoboff** and the APS collection.

On Sunday **Wayne Braunberger**, Past President of APS and retired oil and gas geologist, taught two half-day sessions of his workshop, "Curation of Fossil Collections." The fifteen participants learned the basics of curating a fossil collection and the importance of recording locality data for every specimen.

We have several copies of this year's abstract volume (which includes the abstracts of all of the talks and posters) available for sale at the price of \$7. If you would like to buy a copy, attend an upcoming APS meeting or contact **Mona Trick** via e-mail at **gifts-hop@albertapaleo.org** or phone, (587) 578-4579.

The APS organizing committee included **Harold Whittaker** (organizer of the speakers and workshop), **Howard Allen** (editor of the abstracts volume and organizer of the APS fossil display), **Lacey Holoboff** (coordinator of the posters and displays), **Mona Trick** (symposium organizing committee chair, advertising), **Vaclav Marsovsky** (website), **Dan Quinsey** (sales table), and President **Cory Gross**. I would like to thank those who volunteered at the APS sales table: **Walter Dimattia**, **Gilles Fournier**, **Georgia Hoffman**, **Vaclav Marsovsky**, **Dan Quinsey**, **Anita Reilander**, **Doug Shaw** and **Lorraine Stratkotter**.

We would like to thank all of those who helped to publicize this event. The **Canadian Society of Petroleum Geologists** (now **Canadian Energy Geoscience Association**) advertised the symposium in their publication, *The Reservoir*. Information on Paleo 2023 was listed online on numerous websites. CHQR 770 radio's **Ted Henley** interviewed **Dr. Miriam Reichel-Bodner** on Friday, March 3. CHQR radio frequently promoted Paleo 2023 during the subsequent two weeks. CTV News featured an interview with **John Issa**, **Jared Voris** and **Mona Trick** during both the 5:00 P.M. and 6:00 P.M. news hours on Friday, March 17. CTV Community Calendar also promoted Paleo 2023 during the evening news hours, the week before the event. CBC reporter **Helen Pike** attended the symposium and interviewed **Dr. Femke Holwerda** and **Howard Allen**. The CBC interview aired on CBC radio at 8:30 A.M. on Sunday, March 19. We would like to thank the **Calgary Public Library** for displaying our posters advertising the event. Thanks also go to **Judith Horan** who tweeted the message to her social networks.

We thank all of the speakers, poster present-

ers and display staff for their contributions to the symposium.

APS is able to hold this event for the general public without cost due to the support of the **Department of Earth Sciences of Mount Royal University** (especially **Candace Toner, Dr. Jonathan Withey and Dr. Paul Johnston**), along with **Dr. Jon Noad** and the **Paleontological Division of the Canadian Energy Geoscience Association**. Thank you all.

Mark your calendar for next year's symposium, scheduled for **March 16 and 17, 2024**. Contact **Mona Trick** ([symposium@albertapaleo.org](mailto:symposium@albertapaleo.org)) if you would like to present a talk or workshop or have ideas on a talk or workshop which you would enjoy. We will finalize our speaker program by the end of October 2023, so be sure to submit your suggestions now. □

# Microfossil sorting sessions well attended

By Mona Trick

**A**fter the long COVID-19 shutdown, volunteers were once again able to gather to search for tiny

fossils at Mount Royal University. During six afternoon sessions scheduled from November, 2022 to March, 2023, we used microscopes to search the sediment (matrix) provided by **Dr. Jessica Theodor, Dr. Alex Dutchak** and Ph.D. candidate **Selina Robson**, of the University of Calgary, to find tiny teeth and bone fossils from the Cypress Hills Formation (Middle Eocene) of the Swift Current Creek area of Saskatchewan. This area is particularly important because it is the northernmost known occurrence of its age, namely the Uintan North American Mammal Age (42 million years old).

Attendance and enthusiasm were really high, with thirteen to eighteen volunteers attending each session, averaging sixteen people per session.

Mammal teeth were the prize. Rodent teeth easily outnumbered the rest, but we also found teeth from insectivores, marsupials, lagomorphs (rabbits, hares) and possibly even a primate tooth! In addition, we recovered a nice lizard jaw, snake vertebrae, fish scales and teeth, crocodile scutes, tiny limb bones and many small bone fragments. All of the fossils found will be used to aid the research into this important locality.

We are very grateful to Mount Royal University for letting us use their microscopes and lab, which allows us to offer these sessions at no cost.

We look forward to next autumn's microfossil sorting sessions, to continue our search for tiny treasures. □



**Shoulder-to-shoulder** attendance at the February 26 microfossil session. Photo by Mona Trick.

# 2023 Field Trips

By Keith Mychaluk

**Trip 2023-2. July 8, 2023**  
**K/Pg boundary, Knudsen's Farm,**  
**Huxley, Alberta**

**Leader: Tako Koning**

If you missed this tour last year, Tako will again lead us to the famous Cretaceous-Paleogene boundary (formerly the “K/T boundary”) site on Knudsen’s farm near Huxley, AB. This site is the best location in Canada to view the K/Pg mass extinction boundary. It marks the event when dinosaurs and 75 percent of the Earth’s creatures and plants died almost instantaneously. Extensive academic research at this site has contributed materially to our knowledge of what happened to the world at that time. Huxley is about a 2-hour drive from Calgary. This is a single-day trip and the **registration deadline is July 1.**

**Trip 2023-3. July 14 to 16, 2023**  
**Green River Formation,**  
**Kemmerer, Wyoming, USA**

**Leader: Keith Mychaluk**

We have been planning this trip for a number of years and finally it is here! The Green River Formation is world-famous for fossil fish, rays, palm leaves and even prehistoric horses and birds preserved in stunning detail in Eocene lake sediments. This trip will take place over three days—excluding the long drive to and from Wyoming—in order to accommodate everything we hope to see and do. Kemmerer, Wyoming is a 13.5 hour drive from Calgary (excluding the time required to cross the USA-Canada border; which can be quite variable). Participants will have to find their own way to and from Kemmerer and I strongly recommend splitting-up the drive over (at least) two days in each direction.

Here is the proposed itinerary:

**Friday July 14**

1:00 P.M. Tour of Fossil Butte National Monument (no admission cost).

4:00 P.M. Drive to Kemmerer (about 20 mins from

Fossil Butte) and check-into hotel(s).

**Saturday July 15**

8:00 A.M. to 12:00 P.M. Half-day dig at Warfield’s Quarry (US\$70 per person fee payable upon arrival; cash or cheque only). All tools, including rock saws, are provided.

Afternoon free—A good time to rest and/or visit Ulrich’s Fossil Gallery in town.

6:30 P.M. to 12:00 A.M. OPTIONAL nighttime “V.I.P. Dig” at Warfield’s Quarry. There is no cost for those observing, but will cost US\$500 per person to participate and keep a fossil (see more below).

**Sunday July 16**

Half-day dig at either Warfield’s or at a different quarry (again, US\$70 per person).

5:00 P.M. Official end of trip.

Please view the videos on Warfield’s website, **www.fossilsafari.com** to give you an idea of what to expect. Most exciting is the opportunity to watch the professionals excavate fossils at nighttime from the famous “18 Inch Layer” during their “V.I.P dig”. Artificial illumination helps the pros spot subtle clues in the rock indicating where fossils are located. Then they excavate with special shims, chisels and rock saws. It should be quite the learning experience. For those willing to pay an optional fee, you will be able to keep one fossil fish recovered during the night dig. I understand these are quite remarkable; however, the nighttime experience is optional whether you are paying or simply observing.

We have already reserved a block of rooms at the Fossil Country Inn (Best Western Plus) in Kemmerer, Wyoming at a group rate discount. Each room is non-smoking with two queen beds. Details will be provided once you have completed registration on a first-come, first-served basis. There are other accommodations in Kemmerer but not nearly as nice as the Best Western. I am also told by many sources to **BOOK ROOMS EARLY** as there are several large industrial construction projects in the region and rooms are disappearing fast. The next nearest town for accommodations is Evanston, Wyoming, which is an hour to the south of Kemmerer. However



there are many campgrounds within and near Kemmerer as another option.

Please register early and **ONLY** if you are serious about attending. Expect hot weather! There are no restrictions for attendance but motel space could be a limiting factor. **The registration deadline is July 1 but I highly recommend registering early.** Please contact **Keith** at (403) 809-3211 or [fieldtrips@albertapaleo.org](mailto:fieldtrips@albertapaleo.org) if you have any questions.

**Trip 2023-4. August 19, 2023  
Danek Bonebed and University of Alberta  
Palaeo-Lab tour, Edmonton, Alberta**

**Leader: Keith Mychaluk**

**O**ur gracious host, **Dr. Eva Koppelhus** of the University of Alberta, will guide us to a hadrosaur bone-bed located within the city limits of Edmonton. The Danek Bonebed is used to teach students enrolled in the palaeontology program at the University of Alberta as their field school. Eva has also arranged for us to have a backrooms tour of their palaeo-lab so we can better appreciate how fossils are prepared and studied. Normally closed on weekends, we will also be provided special access to the University of Alberta Palaeontology Museum, which houses the university's fossil collection.

Participants may also wish to tour the Royal Alberta Museum across town on their own schedule. Due to limited physical space at both the bone-bed and the lab, registration is limited to 20 participants. This is a single-day field trip. **Registration deadline is August 1.**

**Trip 2023-5. September 16, 2023  
Fossils-in-Tyndall building stone walking tour,  
Calgary, Alberta**

**Leader: Tako Koning**

**O**nce again, Tako Koning has agreed to conduct his popular tour of Calgary buildings clad with Ordovician-aged Red River Formation limestone originally quarried in Tyndall, Manitoba. See impressively preserved fossils of corals, gastropods, starfish, orthocones and even algae at Calgary landmarks like the historic Bank of Montreal building. This will be a walking tour of several buildings in downtown Calgary, the community of Kensington and the SAIT campus and is suitable for all ages. **Registration deadline is September 1.**

For more information on any of the field trips con-

tact **Keith Mychaluk** at (403) 809-3211 or by email: [fieldtrips@albertapaleo.org](mailto:fieldtrips@albertapaleo.org). A field trip registration form is included with this issue of the *Bulletin* and is available on the APS website, [www.albertapaleo.org/fieldtrips.html](http://www.albertapaleo.org/fieldtrips.html). All fees are due at the time of registration. Fees for trips are \$10.00. **Non-members and unaccompanied minors will not be allowed to attend field trips.** All participants are required to have their membership in good standing. Any membership applications received after May 1, 2023 will not be reviewed and voted on by the Board of Directors until September, 2023. Therefore, if you are a non-member and would like to join be sure your application is received prior to May 1, 2023.

All participants will be required to read and sign a release form (waiver). Detailed information will be provided to all those registered shortly after the registration deadline. After the registration deadline no refunds will be given; however, you will receive the guide for the trip. Registrations are accepted on a first come, first served basis so sign up early to avoid disappointment. For the 2023 field trips I will be sending you the waiver and medical forms along with the trip information. This information will be sent to you via email or Canada Post. Please ensure that your address is correct and legible when sending in registration forms. When you arrive at the meeting place please have all forms completed. All participants are required to have fully completed all waiver and medical forms in order to attend the trip. There will be no exceptions. All personal information is held in confidence and ultimately destroyed.

### **Trip Participant Responsibilities**

It is understood that risk is inherent to some degree in outdoor activities. Before registering for a trip please ensure you understand the risks involved and are prepared to accept them.

- As a participant you are responsible for your own safety and equipment at all times.
- Inform the trip leader of any medical conditions they should be aware of in an emergency.
- Ensure that your previous experience, ability and fitness level are adequate for the trip. □

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Needs Volunteers!**

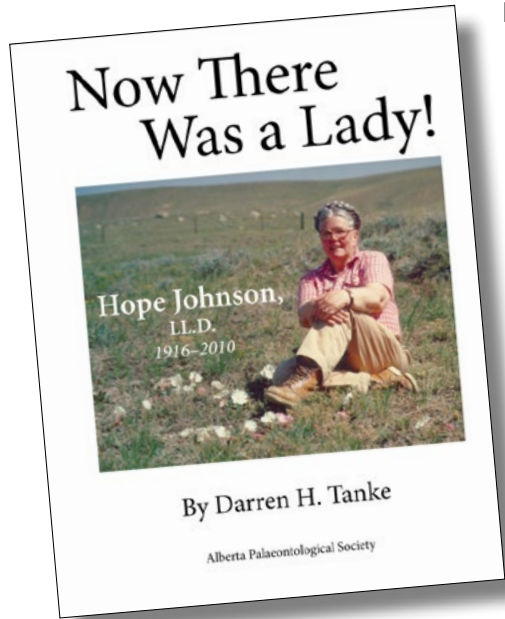
**Please THINK about  
volunteering for APS!**



# Now There Was a Lady!

Hope Johnson, LL.D. 1916–2010

By Darren H. Tanke



**Edited and published by the Alberta Palaeontological Society** with forewords by palaeontologist Dr. Philip J. Currie, artist Allan C.J. Jensen and geologist, museologist, naturalist and writer, David A.E. Spalding.

The 2010 passing of Hope Johnson marked the end of an era for Alberta's vertebrate palaeontology communities. Her death affected other disciplines, too, as she travelled in many circles within the province for 65 years. How many among us can truly say they never knew her personally, saw her art work, or learned to identify Alberta prairie plants, or Late Cretaceous bones and teeth through her fossil identification books? During much of her middle and later life, and especially during the late 1950s to 1980s, Hope was a well-known and respected powerhouse in the Albertan amateur and professional vertebrate palaeontological communities. She was also heavily involved in the naturalist and visual arts communities as well as charitable organizations. This book focuses on her extensive activities in Alberta vertebrate palaeontology and provides examples of some of her fossil and botanical drawings and paintings.

Coil bound, 283 pages; extensively illustrated in black and white, with 30-page colour section showcasing Hope Johnson's art. Includes index. ISBN 978-0-9811101-1-0

**APS Members: \$30.00 Non-Members: \$35.00**

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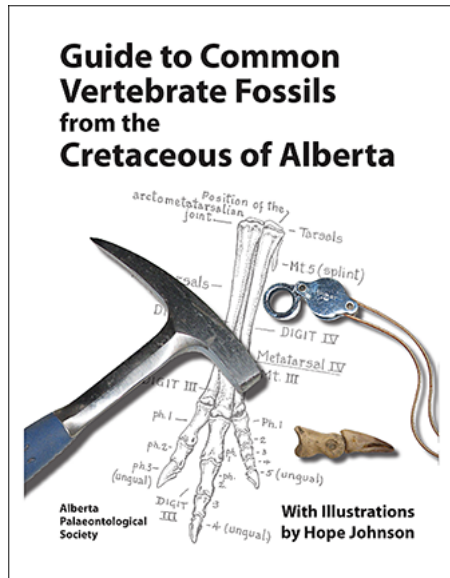
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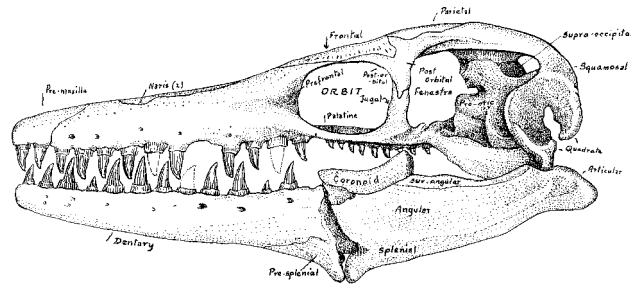
# Guide to Common Vertebrate Fossils from the Cretaceous of Alberta

By the **Alberta Palaeontological Society** with illustrations by naturalist and artist **Hope Johnson, LL.D.**  
Foreword by Dr. Donald Brinkman, Royal Tyrrell Museum of Palaeontology.

**Contents include:** Geology of the vertebrate fossil bearing formations in Alberta • Collecting regulations • Curation • Skeleton terminology • Fishes • Amphibians • Turtles • Champsosaurs • Crocodiles • Lizards • Mosasaurs • Plesiosaurs • Tyrannosaurs • Ornithomimids • Hadrosaurs • Ceratopsians • Ankylosaurs • Pachycephalosaurs • Mammals • And much more!



Hope Johnson's illustrations are the inspiration for this publication. Her passion for nature and contributions to the science of palaeontology have brought Alberta's natural history to life.



Coil bound with 234 pages; 144 illustrations, photographs, tables, and index. This guide is a must-have for amateur and professional palaeontologists.

ISBN 978-0-9811101-0-3

**APS Members: \$30.00 Non-Members: \$35.00**

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