

Alberta

Palaeontological Society Bulletin

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THE SOCIETY WAS INCORPORATED IN 1986 as a non-profit organization formed to:

- Promote the science of palaeontology through study and education.
- Make contributions to the science by: 1) Discovery. 2) Collection. 3) Description. 4) Education of the general public. 5) Preservation of material for study and the future.
- Provide information and expertise to other collectors.
- Work with professionals at museums and universities to add to the palaeontological collections of the province (preserve 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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Inquiries regarding 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, April 25 (FOURTH FRIDAY), 2014—Dr. Jon Noad, Husky Energy.

In Search of Provincial Fossils.

An abstract of this talk is available at www.albertapaleo.org/meetings.html

Friday, May 23 (FOURTH FRIDAY), 2014—Annual General Meeting, Elections, Book Sale.

Speaker: Jason Pardo, University of Calgary.

The origin of a living fossil: A new Early Permian lungfish and the evolution of modern lungfishes.

June, July, August, 2014—No meetings. See Field Trips schedule, **Page 7.**

ON THE COVER: Alberta fossils. *Viviparus* sp. gastropods, Edmonton Group (Upper Cretaceous–Paleocene), Drumheller area. Scale bar is 5 mm. APS fossil collection, APS.1985.11. APS file photo.

Annual General Meeting May 23

Alberta Palaeontological Society Elections

Up for election are the following positions:

| Position | Term |
|---------------------|---------|
| President | 1 Year |
| Vice President | 1 Year |
| Secretary | 1 Year |
| Treasurer | 1 Year |
| Editor | 2 Years |
| Membership Director | 2 Years |

Not up for election are the positions of:

Field Trip Co-ordinator

Wayne Braunberger (2nd of 2 year term).

Program Co-ordinator

Harold Whittaker (2nd of 2 year term).

Committee Chairperson Positions are not up for election but are appointed by the Board.

Current committees are:

| Committee | Current Chairperson | Term |
|-------------------|---------------------|-----------|
| Fossil Collection | Howard Allen | Unlimited |
| Library | Reg Spratley | Unlimited |
| Logo Design | Cory Gross | Limited |
| Public Outreach | Cory Gross | Unlimited |
| Social | Dan Quinsey | Unlimited |
| Symposium | (Open) | Unlimited |
| Website | Vaclav Marsovsky | Unlimited |

If you would like more information about Board positions or are interested in chairing or participating on a Committee, please contact Past President **Wayne Braunberger** at (403) 278-5154 evenings and weekends or by e-mail: pastpres@albertapaleo.org.

All inquiries will be kept confidential if requested.

Book Sale at AGM

A large number of books donated to the Society by member **Bill McPheeters** (See December *Bulletin*) will be sold by silent auction at the Annual General Meeting (AGM) on May 23. Eighty of the

palaeontology titles donated by Bill have been added to the APS library and will be available to members for loan. The balance of the donation (62 titles) will be available to purchase. The books are all non-fiction titles. Subjects include various topics in science (biology, physics, astronomy/cosmology, anthropology), history of science, biography and others. Sale proceeds will go to the Society. Be sure to attend! □

In Memoriam

We are sad to report the passing of three friends of the Society.



Dr. Meinrad Hoffmann was a member from 1986 to 2011. We learned only recently that he had passed away March 9, 2012 at age 93. Meinrad and his wife Eva attended many meetings

and field trips over the years. We were frequently treated to Eva's excellent baking at our Christmas socials and general meetings. Meinrad, a medical doctor, travelled to remote parts of western Canada to relieve local doctors. During his travels he would prospect for fossils at likely looking locations. The APS was a beneficiary of his collecting, and received a number of specimens for our collection. He was survived by Eva and numerous family members. An obituary can be read at www.legacy.com/obituaries/calgaryherald/obituary.aspx?pid=156478971



Roslyn Osztian, a member from 1988 to 2008, died January 27, 2014, in her 80s, according to her long-time friend, **Marilyn Fraser** (no information could be found in the media regarding Roslyn's passing). Roslyn was very active in the

Society until her health prevented her from attending meetings. Prior to that, she faithfully attended most meetings and events and was an enthusiastic participant in the summer field trips. Her reputation for spotting fossil seed cones in the Horseshoe Canyon Formation was legendary and earned her the affectionate title of "The Pinecone Lady." Over the years, Roslyn donated a number of specimens to the APS fossil collection, plus a reference collection of thirty-two microfossil specimens that is kept in a binder in the APS library for the education of members. She presented posters at several of the early symposiums

and served as poster and display coordinator in 2008. Roslyn was also a volunteer technician at the Royal Tyrrell Museum for a period of time and later continued to lend her skill and knowledge at our winter microfossil sorting sessions. Other contributions to the Society are too numerous to list: she was a welcome and valuable member of the Society for her entire tenure and will be remembered with fondness.

Taras (Terry) Storey, though not a longtime APS member (he joined in 2011), was a well-known geologist in the Canadian petroleum industry. He passed away December 27, 2013 at the age of 94. His experience in the Earth science community made him a skilled raconteur, whose company was enjoyed at the general meetings he attended. The fact that he joined the APS and continued to take part in learning activities at such an advanced stage in his life is an inspiration. We offer our condolences to his family, friends and former colleagues. An obituary can be read at www.legacy.com/obituaries/calgaryherald/obituary.aspx?pid=168823036

[Thanks to Harvey Negrich, Marilyn Fraser and Lisa Storozynsky. Photo of Meinrad Hoffmann from the Hoffmann family. Photo of Roslyn Osztian by Keith Mychaluk.] □

Program Summary

February

Robin Cuthbertson

University of Calgary

Marine Reptiles from the Sulphur Mountain Formation in Northern British Columbia

Friday, February 21, 2014 7:30 PM

Mount Royal University, Room B108

Ichthyopterygia is a diverse clade of Mesozoic marine reptiles that first appears in the Early Triassic, already exhibiting a highly-derived skeleton modified for an aquatic lifestyle. However, fossil evidence for informative early forms is incomplete and only a few locations worldwide have produced material. As a result, we have a poor understanding of the early evolution of this interesting clade.

Recent exploration of Sulphur Mountain Formation (Early–Middle Triassic) outcrop in the alpine of east-central British Columbia has resulted in an abundance of new ichthyopterygian fossil material, increasing our knowledge of early group members.

Based on cranial and postcranial data, TMP 89.127.3 is identified as a new taxon (*Gulosaurus helmi*) with its phylogenetic position retrieved within Grippidia, a clade formerly restricted to Lower Triassic deposits in Norway. A second specimen (PRPRC 2007.08.81) comprises a complete skull roof preserved in dorsal aspect and is referred to *Utatusaurus* sp. (formerly recognized only from the Early Triassic Osawa Formation of Japan), representing the first substantive evidence of this genus from the Sulphur Mountain Formation of Canada. The third examined specimen (PRPRC 2004.05.08), referred to Mixosauria, is represented by a partial skull bearing a premaxilla with a pointed posterior margin and an enlarged supratemporal terrace. Based on these features and its dental characteristics, PRPRC 2004.05.08 appears closely related to a contemporaneous mixosaurid from China (*Mixosaurus panxianensis*).

To achieve such a broad palaeogeographic range of closely related taxa, these few Sulphur Mountain Formation specimens suggest at least two radiation events took place during the early evolutionary history of Ichthyopterygia, one for basal group members and a second for the more crownward mixosaurids.

Biography

Robin Cuthbertson is a sessional instructor in the Department of Biological Sciences at the University of Calgary. As a first step towards investigating the vertebrate biotic recovery following the end-Permian mass extinction event, his Ph.D. studies focused on an assemblage of Early Triassic ichthyopterygians from Canada. Morphological and phylogenetic patterns were highlighted as a means of improving the clarity of the early evolutionary history of the group. As part of his M.Sc. work, Robin has also investigated the chewing mechanics of duck-billed dinosaurs by identifying the kinetic limitations imposed by intracranial joints in the hadrosaurines *Brachylophosaurus* and *Edmontosaurus*. □

Bulletin back issues on Web

Thanks to our Web Master, **Vaclav Marsovsky**, a complete archive of *Bulletin* back issues from 1986 to 2013 is available for download in PDF format. www.albertapaleo.org/bulletinarchive.htm

Paleo 2014 Another Success

By Mona Marsovsky

On Saturday, March 22, more than eighty people braved the cold and snow to attend Paleo 2014, the 18th annual APS Symposium. **Harold Whittaker** arranged eight excellent speakers. Attendees were treated to a variety of talks, ranging from Cambrian arthropod trackways (approximately 500 million years old) to 3–4 million year old Late Neogene camels in the Arctic.

On Saturday, during the longer-than-normal poster session (due to one absent speaker), participants enjoyed the seventeen posters that were provided by presenters from all over Alberta on a variety of topics. The Archaeological Society of Alberta (Calgary Centre), Joli Fou Society (the Mount Royal students' geology society) and APS member **Les Adler** showed interesting displays. There were fossils from the APS collection, APS Public Outreach (ice age animals of Alberta) and fossil specimens to compare Permian brachiopods from the Canadian Arctic with those from Svalbard, Norway.

On Sunday, March 23, artist **Sydney Mohr** presented two sessions of her workshop, "An introduction to drawing prehistoric life." Of the twenty-nine people who registered, twenty-four were able to attend and to learn some things to watch for while illustrating dinosaurs and birds.

Thanks go to the APS organizing committee: **Cory Gross** (President and Symposium Committee Chair), **Harold Whittaker** (who arranged the speakers and workshop), **Howard**

Allen (editor of the abstracts volume), **Doug Shaw** (posters and displays), **Reg Spratley** (advertising), **Judith Aldama** (speaker introductions), **Vaclav Marsovsky** and **Mona Marsovsky** (sales table). I would also like to thank the sales table volunteers: **Howard Allen**, **Lisa Bohach**, **Wayne Braunberger**, **Emily Frampton**, **Cory Gross**, **Georgia Hoffman**, **Vaclav Marsovsky**, **Renee Mullins**, **Keith Mychaluk** and **Doug Shaw**.

Without the amazing support of the Department of Earth Sciences of Mount Royal University (especially **Mike Clark** and **John Cox**) and the Canadian Society of Petroleum Geologists, Paleontological Division, we would not have been able to hold this event without cost to the participants.

We want to thank all of the speakers, poster presenters and display staff for their contributions which made this symposium so interesting. I would hazard a guess that everyone learned something new from the talks, posters and workshops.

If you missed getting a copy of the abstracts volume, which includes all of the abstracts from the talks and posters, there are a few left at the bargain price of \$7 each. Contact **Mona Marsovsky** (giftshop@albertapaleo.org or 403-547-0182) to get a copy.

If you are interested in giving a talk or presenting a workshop at next year's symposium, contact **Harold Whittaker** (programs1@albertapaleo.org). □



Poster session attendees crowd the viewing area on Saturday afternoon. Photo by Cory Gross.

APS Logo Search Update

By Howard Allen

As reported in the March 2013 *Bulletin*, the Society Executive has struck a committee to solicit ideas for a new logo. A few submissions have been entered and these are illustrated here. The process is open to all APS members: do you think you can do better? Then please enter your own designs! There is no deadline at this stage, and no limit on the number of ideas. Logo designs will be displayed anonymously to ensure that judgements concentrate on the design, rather than personal alliances. Artists will be identified at the end of the process. We want to take our time and see what the membership comes up with. Some members have already voiced their preference for our original logo. With that in mind, we have agreed that the old logo will be included as one of the choices in a final vote, whenever that takes place. Here are a few things to keep in mind:

- We're looking for a logo, **not a T-shirt design!** It must be relatively simple, bold, and look good on letterhead, advertising, posters, literature, etc. and give an air of professionalism.
- The design must be scalable: that means it has to look good and be recognizable at any size, from a giant poster to a tiny corner of a mailing envelope.
- Following from the first two points, we would prefer to see designs that are relatively simple to scale and reproduce by computer and printing press: they should avoid shaded or multicoloured graphics and complex, fine lines. A logo must look good in one or two colours.
- Designs (and designers!) should be open to change. It may be that a really outstanding idea will turn up, but some aspect needs to be modified to better suit our purposes. Designers should be willing to work with us toward that end.
- Don't worry if you lack sophisticated drawing tools. We can work with you in developing your idea from a rough pencil sketch.

So sharpen your pencils and put on your thinking caps! Submit your designs to **Cory Gross, Howard Allen**, or any other member of the Board (see **Page 2** for contact information). □



2014 Field Trips

By Wayne Braunberger

A field trip is tentatively planned for the first weekend in July (July 5 and 6). We hope to have **Annie Quinney**, a Ph.D. student at Monash University in Australia, lead us on a trip to the Drumheller Valley to learn how to recognize fossil soil horizons in the Cretaceous rocks exposed there. This would be a mostly observational learning experience to be conducted all day Saturday. A less formal collecting-oriented day would probably be held on the Sunday. Watch for updates in the June *Bulletin* and on the APS website, www.albertapaleo.org/fieldtrips.html.

Planning is also underway for other field trips. If you have any suggestions for possible trips or would be willing to lead a trip please contact me or any member of the Board (see **Page 2**). Tentative dates for 2014 are July 5 and 6 and August 16 and 17.

Field Trip Committee

I broached the idea of forming a field trip committee last year and although some interest was shown, no one committed to serving. If you would like to be more involved with the field trips but not have to make a huge commitment this would be a good opportunity. □



The Tenth BC Paleontological Symposium runs May 9–12 in Victoria. Registration fee is \$65 (regular), or \$55 (students). Deadline for submitting abstracts for posters, displays or talks is April 18. Information and registration forms are available at www.vicpalaeo.org

K/T Floras Bulletin Available Online

W.A. Bell's 1949 GSC Bulletin 13 on fossil plants of western Alberta can be downloaded at geoscan.nrcan.gc.ca/geoscan-index.html (Use *Advanced Search* for author "Bell" and year "1949").

[Thanks to Georgia Hoffman and Matthew Vavrek.]

Winter Microfossil Sorting Summary

By Beverley Ulmer

The winter 2013 and 2014 microfossil sorting sessions at Mt. Royal University were attended by forty-two people in total. We hosted nine days of sorting sessions this season and all were well attended. Among the APS members we saw some new faces and some new families attended.

We started off the season with **Dr. Jessica Theodore** (University of Calgary) and her student **Chelsey Zurowski**, with matrix from the Swift Current Creek fauna in the Cypress Hills of Saskatchewan, dated middle Eocene. Of interest was the finding of three multituberculate teeth. Many rodent teeth were also found and many intact whole bones.

The 2014 new year brought us matrix from **Cory Redman** of the Royal Tyrrell Museum. His matrix, part of his postdoctoral research, was from the Frenchman Formation, below the Cretaceous-Paleogene boundary. We also sorted for **Dr. Don Brinkman** of the Tyrrell Museum. His matrix was early Paleocene, containing fish and mammal material. Sessions were enjoyed by all and we were able to help the researchers with their studies. Thank you to all who were able to get out and attend. □

Fossils in the News

Edited by Howard Allen

CBC News online

April 4, 2014

Nunavut dinosaur fossil is most northern ever found

AXEL HEIBERG ISLAND, Nunavut—A hadrosaur vertebra takes the record as the most northerly dinosaur fossil found to date. At the time the dinosaur was alive, in the Late Cretaceous Period, the latitude of the area was slightly farther south than today, but still above the Arctic Circle and thus subject to seasonal 24-hour periods of darkness and daylight. The climate was of course much warmer than today. Palaeogeographic interpretations suggest that the landmass the dinosaurs lived on would have been

isolated from more southerly regions, preventing the animals from making seasonal southward migrations and forcing them to make do with whatever plant material was available during the winter dark periods. www.cbc.ca/news/technology/nunavut-dinosaur-fossil-is-most-northern-ever-found-1.2598606. A paper discussing the fossil is published in the journal *Arctic* (paywalled). Listen to a CBC *Quirks and Quarks* interview with lead author Matthew Vavrek at www.cbc.ca/quirks (search Q & Q for “Vavrek”).

CBC News online

March 14, 2014

Fossil discovery unearths “nursery in the sea”

NEW YORK—A team of researchers from the US, UK and Japan has announced the discovery of remarkably preserved microfossils of ostracodes (crustaceans, “seed shrimps”) showing brooding behaviour. The fossils, found in 450 million year old (Ordovician) rocks in New York state, are preserved in pyrite and were studied using X-ray technology. Specimens include soft body parts, eggs and hatched larvae. Adult specimens are preserved with clusters of incubated eggs, evidence of parental care similar to their modern descendents. The research paper, in the journal *Current Biology*, is paywalled. www.cbc.ca/news/technology/fossil-discovery-unearths-nursery-in-the-sea-1.2572886.

BBC News online

January 14, 2014

Tiktaalik: Iconic fossil’s rear parts described

ELLESMERE ISLAND, Nunavut—The famous fossil *Tiktaalik*, a tetrapodomorph animal that seems to have been transitional between fishes and land-going quadrupeds, was heretofore known only from the front half of its skeleton. But now, after preparation of additional material collected at the same time as the original specimen, researchers can see how its hindquarters were built and may have contributed to its locomotion. The relatively large size of its pelvic bones and hind fins was a surprise, according to Dr. Ted Daeschler, of Drexel University. “The pelvis is as large as the shoulder girdle . . . we would have expected the pelvic fins to be smaller.” The implication is that *Tiktaalik* was more advanced toward a quadrupedal form than initially supposed. The fins would have been used for swimming—not walking—

but may have been robust enough to push the animal along the bottom of the shallow sea, where it lived in the Devonian Period. See www.bbc.com/news/science-environment-25713538. The new research is published in *PNAS* (open access): www.pnas.org/content/111/3/893.full

CNN online February 21, 2014

Mammoth, “very strange-looking” dinosaur skull found in Canada

DRUMHELLER—What may be the largest-ever *Pachyrhinosaurus* skull has been recovered from a locality in Drumheller. University of Calgary professor Dr. Darla Zelenitsky (sporting a “Slash” T-shirt in a media photo) discovered the skull in October 2013 while prospecting for fossils. Excavation required the removal of some 5 t of rock over ten days. According to Dr. Zelenitsky, “the skull would have been well over 2 m long and was likely of a mature or older individual.” See www.cnn.com (search for “Pachyrhinosaurus”). A news release with a couple more photos is available at Dr. Zelenitsky’s research site: www.ucalgary.ca/drg

[Thanks to Phil Benham and Georgia Hoffman] □

The Calgary Rock and Lapidary Club
celebrates our 2014 - 54th Annual

GEM, MINERAL & FOSSIL SHOW

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