Palæontological
Alberta
Society
Bulletin

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The Society was incorporated in 1986, as a non-profit organization formed to:

a. Promote the science of palaeontology through study and education.

b. 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

c. Provide information and expertise to other collectors.

d. 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**

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Upcoming APS Meetings

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

June, July, August, 2013—Field Trips, no General Meetings (See Page 4)**.**

Friday, September 20, 2013—Dr. David A. Eberth, Royal Tyrrell Museum.
Climate Influence on Dinosaurian Biostratigraphy in the Horseshoe Canyon Formation (Upper Cretaceous), Alberta, Canada (See Page 3)**.**

Friday, October 18, 2013—Topic to be announced.

Friday, November 15, 2013—Topic to be announced.

Friday, December 13 (Second Friday), 2013—Christmas Social.

ON THE COVER: Ganoid scale of garpike, *Lepisosteus* sp., Upper Cretaceous (Campanian), Dinosaur Park Formation, southern Alberta. Length of specimen is 19.5 mm. Photo courtesy of APS member **Randall Quon**. See more of Randall's photography at **www.randallquon.com**.

Upcoming Events

September

David A. Eberth
Royal Tyrrell Museum of Palaeontology

Climate Influence on Dinosaurian Biostratigraphy in the Horseshoe Canyon Formation (Upper Cretaceous), Alberta, Canada

Friday, September 20, 2013, 7:30 P.M.
Mount Royal University, Room B108

The Upper Cretaceous Edmonton Group (Horseshoe Canyon Formation (HCFm), Battle and Scollard Formations) has yielded 209 partial-to-complete dinosaur skeletons and thousands of isolated elements. Considered in a stratigraphic and palaeoenvironmental framework, these fossils reveal a high-resolution biostratigraphy that can help identify ecological and evolutionary responses among dinosaurs to a wide variety of environmental changes leading up to the K-T extinction event (*e.g.*, climate, sea level, mountain building). Biostratigraphic analysis reveals a least three dinosaurian assemblage zones in the HCFm, each characterized by a unique assemblage of ornithischians. These are: 1) *Edmontosaurus regalis-Pachyrhinosaurus canadensis* (lower zone); 2) *Hypacrosaurus altispinus-Saurolophus osborni* (middle zone); and 3) *Eotriceratops xerinsularis* (upper zone). Whereas the lowest two faunal zones (*E. regalis-P. canadensis, H. altispinus-S. osborni*) are based on numerous specimens of a least two taxa, the validity of the uppermost zone (*E. xerinsularis*) is tentative because it is based on a single specimen and the absence of dinosaur taxa. The transition from the *E. regalis-P. canadensis* zone to the *H. altispinus-S. osborni* zone was a response to climatic change in southern Alberta that witnessed the replacement of a warm-and-wet saturated deltaic setting with a cooler, coastal-plain landscape, characterized by more strongly seasonal rainfall and better-drained substrates. Changes in mean annual temperature and proximity to shoreline had little influence on this change; it most likely reflected changes in rainfall and substrate response. We speculate that the transition from the *H. altispinus-S. osborni* zone to the *E. xerinsularis* zone was also a response to palaeoenvironmental change back to wetter-and-warmer climatic conditions, and the re-establishment of poorly-drained substrates. Thus, the two "faunal turnovers" in the HCFm represent responses to palaeoclimate and are not reflective of significant and widespread evolutionary events (rapid diversification events or extinctions at the genus level or higher) such as those that distinguish the Dinosaur Park, Horseshoe Canyon and Scollard Formation "faunas" and are the basis of the Judithian, Edmontonian and Lancian LVAs. Dinosaur assemblage zones have also been identified in the dinosaur-rich Dinosaur Park Formation (DPFm, upper Campanian, Alberta), but are different from those in the HCFm: (1) there is no evidence for significant climatic changes during deposition of the DPFm; (2) the HCFm biozones are of much greater duration (1.6–1.9 Ma) with each one more-or-less encompassing the full duration of the DPFm (1.5 Ma); and (3) faunal turnovers in the HCFm appear to involve more distantly-related taxa. This suggests a greater degree of anagenic evolution in DPFm ornithischians (possibly due to rapid socio-sexual selection) contrasted with longer-term morphological stasis in HCFm ornithischians and significant climate-change-driven dinosaur migration-events into and out of the Drumheller area.

Biography

Dr. David A. Eberth (PhD, University of Toronto; MA, University of California, Berkeley), is Senior Research Scientist, Sedimentary Geology & Palaeoecology at the Royal Tyrrell Museum in Alberta, Canada. He studies stratigraphy and ancient environments of fossil-bearing rocks and has participated in field projects around the world. His specialties include the study of ancient physical environments, the age of the rocks, and how ancient plants and animals are preserved. He also has a deep interest in the causes for the revival of American creationism. Dave's research sheds light on Earth's ancient environments and how advances in the Earth sciences impact society and culture.

Dave has written and presented more than 100 papers in a career that, so far, spans 33 years. He has organized and hosted symposia at the Royal Tyrrell Museum and is the co-editor and a contributor for two recently published scientific books on bonebeds

and horned dinosaurs. He is now co-editing a third book about duck-billed dinosaurs. ❑

Program Summary

Alycia Wilson
Mount Royal University

Guitarfish (Rhinobatidae): a look at Myledaphus bipartitus *and some of its modern relatives*

Friday, May 24, 2013, 7:30 P.M.

Alycia's talk was a brief history and overview of a wonderful chondrichthyan group. Most people know what a shark, ray or even a chimaera is, but not as many know what a guitarfish is. The aptly named guitarfish (they look like a swimming guitar) are a cosmopolitan group found in marine waters along continental shelves in tropical to subtropical waters.

The history of the Rhinobatidae begins in the Late Jurassic when they begin to differentiate from other members of their order, the rays (Rajidae). The star of this presentation, *Myledaphus bipartitus*, is a Late Cretaceous (75 Ma) freshwater guitarfish that was first described in 1876. Until now very little was known about its ecology and life history.

Age and growth of over 100 specimens from the Oldman and Dinosaur Park formations of southern Alberta were analyzed. Results were compared with the age and growth of two modern marine *Rhinobatos* species (*R. productus* and *R. rhinobatos*). These species are currently being harvested, yet we know almost nothing about their ecology. Very little is known about any of the sixty-one identified modern species.

Biography

Alycia Wilson is a recent Bachelor of Science graduate of the Biological Sciences faculty at the University of Calgary. While earning her degree she was able to work in a variety of environments: a provincial water screen laboratory, a micro-ecology lab, a carbon capture research group, an animal research facility, and the Royal Tyrrell Museum. Her interest in palaeontology began when she approached Dr. Michael Newbrey of the Royal Tyrrell Museum of Palaeontology with interest in working on a chondrichthyan project. Dr. Newbrey then offered a study of the age and growth of *Myledaphus bipartitus*. The study provides important insight into the age and growth of *Myledaphus*, *Rhinobatos productus* and *Rhinobatos rhinobatos*. It also poses questions of their ecology and life histories. Alycia intends to continue working with guitarfish in her future studies. ❑

2013 Field Trips

By Wayne Braunberger

*READ THIS: A proposal to form a field trip committee has been put forth. If you have an interest in serving on this committee please contact Wayne Braunberger (**president1@albertapaleo.org**) or any member of the board of directors.*

Planning is well underway for this year's trips. For more information please contact **Wayne Braunberger** at **(403) 278-5154** or by email, **president@albertapaleo.org**. A field trip registration form was included with the March issue of the *Bulletin* and is also available on the APS website, **www.albertapaleo.org**.

Please note that all fees are due at the time of registration. Fees for trips are $10.00. This is to cover increased costs as guides will be featuring more colour photographs and diagrams. Guides are only produced in small numbers, so volume printing discounts are not available.

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, 2013 will not be reviewed and voted on by the Board of Directors until September, 2013. Therefore, if you are a non-member or late-renewing former member and would like to join, be sure your application is received prior to May 1, 2013.** All participants will be required to read and sign a release form (waiver). Detailed informa-

tion 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 field guide for the trip. No late registrations will be accepted**. Registrations are accepted on a first-come-first-served basis. Sign up early to avoid disappointment.

For the 2013 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 e-mail or Canada Post. Please ensure that your addresses are correct and legible when sending in registration forms.

When you arrive at the meeting place please have the 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.

Trip 2013-1, July 20 & 21, 2013
Alexo area, Alberta

The Alexo locality is a rock cut along the abandoned rail line west of Rocky Mountain House. The strata exposed there host plant fossils, and belong to the early Paleocene part of the Scollard Formation. Palynology samples from Alexo have shown that the beds were deposited very soon after the Cretaceous–Paleogene boundary, so the fossils found there represent survivors of the extinction event. Watch for further details on the APS website.

Registration deadline is July 5, 2013.

Trip 2013-2, August 16–18, 2013
Swan Hills area, Alberta

We are making another attempt to run this trip, cancelled previous years due to poor weather and forest fire hazards. Hopefully conditions will be better this August.

This is a three day exploratory trip (including travel time) to the Swan Hills area, northwest of Edmonton. Reports from the 1960s indicated the presence of both vertebrate and invertebrate fossils from rocks straddling the Cretaceous-Tertiary boundary in the Swan Hills. These early discoveries were made when the massive Swan Hills oil pool was being developed in the subsurface. Drilling sites, roads and oil pipelines were the source of exposures from which the fossils were located. Decades of inactivity have seen vegetation reclaim many of these earlier localities. However today there is a resurgence of drilling in the Swan Hills and we hope to evaluate new sites in this underexplored and isolated region of Alberta. This is a purely exploratory trip so be prepared not to find anything but keep in mind this is also "virgin" ground.

Accommodation, gasoline and a restaurant are available in the town of Swan Hills as well as in Whitecourt, about an hour's drive south of Swan Hills. There are plenty of campgrounds in the Swan Hills. Members are welcome to participate for all or part of the trip. Note that Swan Hills is approximately 500 km from Calgary and will take 6–7 hours to drive.

The registration deadline is August 2, 2013.

Trip 2013-3, September 21 & 22, 2013
Sundre area, Alberta

An exploratory trip to Paleocene and/or Cretaceous locations along the Red Deer River near Sundre, Alberta. Further details will be available on the APS website.

The registration deadline is September 6, 2013. ❑

Rock 'n' Fossil Road Show set for October

The 15th road show, organized by the Geological Survey of Canada and the Calgary Science Network, is scheduled for Saturday, October 19, from 11:00 A.M. to 3:00 P.M. This year's venue will be the Bowness Branch of the Calgary Public Library, 6532 Bowness Road, NW.

The APS will participate in this event, with **Dan Quinsey** manning a table. If you'd like to get involved contact Dan, **dinodan@shaw.ca** or (403) 247-3022. ❑

Paleo 2013 Symposium Highlights

By Mona Marsovsky
Photos by Vaclav Marsovsky

The seventeenth APS Symposium, Paleo 2013, was held on Saturday, March 16 at Mount Royal University. Luckily, the cold and snowy weather did not prevent those from Drumheller or the Edmonton area from attending. The participants enjoyed more than ten posters and several displays.

The eight talks featured a variety of palaeontological topics which spanned from the Cambrian to the Holocene. About seventy people attended the talks.

Cory Gross' excellent hands-on fossil display.

Due to an illness in the family, **Dr. Robert MacNaughton**, Research Scientist at the Geological Survey of Canada, was not able to present his talk. Instead **Joshua Ludtke**, PhD candidate at the University of Calgary, stepped up to the challenge of preparing a 50 minute talk (given less than three days notice) and enlightened the crowd on the Paleocene-Eocene Thermal Maximum (approximately 56 million years ago). He discussed using the Extended Price Equation to evaluate the differences in mammal body size (dwarfing) from the late Paleocene to the early Eocene.

Darren Tanke of the Royal Tyrrell Museum of Palaeontology described the different types of blood sucking insects of southern Alberta and the nasty diseases some of them carry in their bites.

Dr. Charles Henderson, Professor and Head of the Department of Geoscience at the University of Calgary, gave an overview of the major climatic extremes over the 50 million years of the Permian Period. He also discussed the value of conodont (small eel-like animal) teeth for dating Permian rocks. Precise dating of these fossils is currently indicating that the severe Permian extinction event at the Permian-Triassic boundary may have occurred over a period as short as 20,000 years.

Continuing in the Permian, **Jason Pardo**, Masters student at the University of Calgary, discussed how climate change may have been a major factor in the dramatic evolution in the Early Permian, as evidenced by his study of the Forest City Basin of eastern Nebraska and Kansas.

Dr. Jennifer Scott, Assistant Professor of the Department of Earth Sciences at Mount Royal University, described how trace fossils were helping to interpret the depositional environment and stratigraphy of the Green River Formation (Eocene) in fossil Lake Gosiute in southwestern Wyoming.

Dr. Lisa Bohach of Stantec Consulting Ltd. described two fossil mollusc faunas (land snails) from the early Holocene, one from southeastern Saskatchewan (approximately 11,000 years old) and another from southern Calgary (8,000 to 10,000 years old), and compared those fossil snails to the snails we find today.

Dr. David Eberth, Senior Research Scientist at the Royal Tyrrell Museum of Palaeontology, discussed the division of the Horseshoe Canyon Formation (Upper Cretaceous) into seven lithomembers with at least three dinosaur assemblage zones. He proposed that two "faunal turnovers" recorded in Horseshoe Canyon Formation rocks were a result of climate changes.

Finally, **Dr. Brian Chatterton**, Professor Emeritus at the University of Alberta, brought us back to the beginning (Cambrian) with a wide-ranging talk on the trilobites found in Canada.

On Sunday, March 17, **Wayne Braunberger**, President of APS, taught ammonite evolution, classification and morphology to a class of twenty. Many of the participants brought ammonite specimens, which really helped us visualize the various features

Arnold Ingelson and Les Adler discuss ammonite characteristics at the Sunday ammonite workshop.

required for ammonite description and classification.

The APS Symposium would not have been possible without the facilities and support of **Mount Royal University**, particularly **Mike Clark** and **John Cox**. The Paleontological Division of the **Canadian Society of Petroleum Geologists** (CSPG) provided advertising for the event in the CSPG *Reservoir* magazine. APS provided the organization and volunteers. Thanks go to the following volunteers: **Vaclav Marsovsky** (symposium chair), **Mona Marsovsky** (speakers, workshop and sales table), **Howard Allen** (abstract volume editor), **Wayne Braunberger** (introductions and workshop presenter), **Reg Spratley** (advertising), **Doug Shaw** (posters and displays) and **Cory Gross** (hands-on fossil display). Thanks go to the following volunteers who worked at the APS sales table: **Lisa Bohach**, **Cory Gross**, **Georgia Hoffman**, **Arnold Ingelson**, **Mona Marsovsky**, **Vaclav Marsovsky**, **Dan Quinsey**, **Doug Shaw**, **Peter Truch** and **Harold Whittaker**.

Howard Allen did an excellent job of assembling the abstracts for the talks and posters into an attractive volume. If you would like one of the few remaining abstract volumes at the bargain price of $8.00, contact **Mona Marsovsky**: **giftshop@albertapaleo.org**, (403) 547-0182.

We would especially like to thank all of the poster presenters and speakers for presenting their research.

If you would like to present a talk or workshop or have an idea of a talk or workshop you would like to see at next year's symposium, contact **Harold Whittaker** (**programs@albertapaleo.org**). ❑

Winter 2012–2013 Microfossil Sorting Summary

By Mona Marsovsky

The past autumn and winter, using microscopes provided by Mount Royal University, APS members and friends extracted fossils from matrix ("soil") on seven Saturday afternoons.

On November 3, fourteen members sorted the matrix that was collected during the July 2012 APS field trip for **Dr. Donald Brinkman** of the Royal Tyrrell Museum of Palaeontology (RTMP). The Upper Cretaceous (Campanian; about 79 million years old) matrix from "Wendy's Site," in the Foremost Formation on the south side of the Milk River of southeastern Alberta, yielded frog and salamander fossils, bird teeth, dinosaur eggshell, an amphibian jaw with teeth, turtle fossils, gar scales, an *Amia*

Ray teeth, *Myledaphus bipartitus*, Dinosaur Park Formation. Scale bar = 5 mm. APS collection, number 1984.18. APS file photo.

Lizard jaw (?) found in Wolf Coulee material. Photo by Beverley Ulmer.

(fish) jaw, a *Coriops* (fish) toothplate, a *Richardoestesia* (small dinosaur) tooth, a lizard jaw, a jaw from an albanerpetontid (small amphibian), *Myledaphus* teeth, dinosaur teeth and other various fish vertebrae and teeth.

On November 17, **Dr. Jessica Theodor** and her students, **Joshua Ludtke**, **Alyssia Morley** and **Xingkai Yang** from the University of Calgary, brought matrix from Swift Current Creek in Saskatchewan. This matrix is of a similar age (Uintan, of the Eocene) as material found in the Uinta Basin of Utah and the John Day National Monument in Oregon. This is the northernmost occurrence of fossils from this age in North America. In this very fine matrix, the eleven APS members found teeth from rodents, insectivores, artiodactyls (even-toed hoofed mammals), multituberculates and perhaps even primates. In addition, a lizard jaw with one tooth fused to the jaw and a calcaneum (ankle bone) were found.

During the five 2.5 hour sessions held January 12, January 26, February 9, February 23 and March 9, we sorted matrix from Wolf Coulee in Dinosaur Provincial Park, southeastern Alberta. **Dr. Donald Brinkman** of the RTMP brought the matrix and patiently answered all of our questions. This material, from near the Lethbridge Coal Zone, just under the Dinosaur Park Formation of the Late Cretaceous (approximately 75 million years ago), yielded lots of fossils from fish (teeth, vertebrae, scales, jaw and skull parts), sharks (teeth and denticles—skin armour) and even some crocodile teeth. Salamander fossils (atlas, axis, other vertebrae, jaws and skull parts) were relatively abundant. It was suggested that perhaps Wolf Coulee should be renamed as "Salamander Coulee". Rarer finds included a small tyrannosaur tooth, a bird tooth, frog jaw and a *Richardoestesia isosceles* tooth.

This year's volunteers (in alphabetical order) were **Les Adler**, **Judith Aldama**, **Mila Aldama**, **Dave Frishman**, **Rej Desjardins**, **Ron Fortier**, **Dominique Gagnon**, **Mark Gagnon**, **Georgia Hoffman**, **Peter Hone**, **Arnold Ingelson**, **Michele Mallinson**, **Mona Marsovsky**, **Vaclav Marsovsky**, **Erin Matthews**, **Harvey Negrich**, **Maria Newberry**, **Dan Quinsey**, **Al Rasmuson**, **Bill Spencer**, **Jenny Spencer**, **Doug Shaw**, **Reg Spratley**, **Peter Truch**, **Beverley Ulmer** and **Harold Whittaker**.

Thanks go to **Mike Clark** and **John Cox** for allowing us to use Mount Royal University's lab and microscopes. Without this support from Mount Royal University, these microfossil sorting sessions would not be possible.

We would also like to thank **Don Brinkman** and **Jessica Theodor** for supplying the fossil matrix and allowing us to share in their research.

[*A recent post by blogger Tony Edger on the frustrations of microfossil picking may be of interest to readers. See* **http://fossilsandotherlivingthings.blogspot.ca/2013/05/the-search-for-weapons-and-microfossils.html**] ❑

Dinosaur egg shell fragments, southern Alberta. Scale bar = 5 mm. APS collection, number 1986.35. APS file photo.

www.albertapaleo.org

Fossils in the News

Edited by Howard Allen

Calgary Herald
May 7, 2013

New "bone-headed" dinosaur named after Alberta rancher whose land yielded key fossil

MILK RIVER—Another new dinosaur from Alberta's fossil beds has been announced by a team including David Evans (Royal Ontario Museum), Mike Ryan (Cleveland Museum of Natural History), and Ryan Schott, Caleb Brown and Derek Larson, all of the University of Toronto.

The new dinosaur is a pachycephalosaur ("bone-headed dinosaur") named *Acrotholus audeti*, for Milk River area landowner Roy Audet. A skull dome (the only remains of the animal found) was recovered from Milk River Formation rocks (84 million years old) making it the oldest pachycephalosaur in North America and possibly the world. Another skull dome ascribed to the species was found 50 years ago in the same formation, but had remained unidentified until it was examined for the new study.

See **www.calgaryherald.com/technology/bone+headed+dinosaur+named+after+Alberta+rancher+whose+land/8350510/story.html**. Another article, including images and a video featuring Dr. Ryan can be seen at the Cleveland Museum website: **http://cmnh.org/site/ResearchandCollections/VertebratePaleontology/Announcements/Acrotholus.aspx**. The new species was described May 7, 2013 in *Nature Communications* (paywalled).

Calgary Herald
May 23, 2013

Turkey-sized dinosaur roamed southern Alberta 77 million years ago

MILK RIVER—Yet another new Alberta dinosaur, this one a small ornithopod, has been announced by Brown, Evans, Ryan (see previous item) and Dr. Anthony Russell, of the University of Calgary.

Remains of *Albertadromeus syntarsus*, as the new species is named, have been recovered from Oldman Formation beds and possibly also Dinosaur Park Formation rocks in the Milk River valley and at Dinosaur Park. The significance of the new species is that it fills a "gap" in the Campanian animal diversity of southern Alberta, namely small plant eaters, which would be expected to be fairly abundant in this type of ecosystem, but have hitherto been poorly documented, probably due to the relative delicacy of their bones, which do not tend to preserve well (and perhaps they tended to get crunched into splinters by their larger predators). They may also have simply been overlooked in the search for fossils of their more spectacularly-sized contemporaries. See the *Herald* article for more details and images: **www.calgaryherald.com/technology/Speedy+turkey+sized+dinosaur+discovered+southern+Alberta/8426245/story.html** The *Journal of Vertebrate Paleontology* paper describing the discovery can be read or downloaded in full (no paywall!) at **www.tandfonline.com/doi/full/10.1080/02724634.2013.746229#.UavtVuBQP9I**.

Canada.com
May 27, 2013

Alberta couple's backyard dig fuels major scientific debate over mammoth extinction event

BUCK LAKE, Alberta—A news item covered in the December 2005 *Bulletin* (p. 11) ended with the advice to "stay tuned" for more on this topic. Well it took nearly eight years, but there is indeed more. To refresh your memory, a pair of scientists, Richard Firestone (nuclear chemist) and Allen West (geologist) from the United States have advanced a hypothesis that the "Younger Dryas" extinction event, some 13,000 years ago, that precipitated the demise of the mammoths and other large ice-age fauna, as well as the disappearance of the Clovis aboriginal culture, was caused by the impact of an asteroid somewhere in the vicinity of then-frozen Hudson Bay.

Firestone and West's idea has legs, and the controversy continues. This past February, a 16-member team published an American Geophysical Union paper disputing the impact hypothesis on the grounds of a lack of good evidence. In response, a team of 29 other scientists (the more the merrier, apparently) countered in a *Proceedings of the National Academy of Sciences* (*PNAS*) paper that there is indeed

evidence—including material recovered from the property of Buck Lake, Alberta residents Anton and Maria Chobot. Sadly, Anton Chabot passed away (at age 92) just days after the *PNAS* paper was published.

The *PNAS* paper authors praise the Chobots for their tireless efforts to find and preserve "a museum-quality collection of prehistoric artifacts." The Chobots, over a span of some thirty years, have collected a large number of First Nations artifacts and animal bones from their property. The artifacts include Clovis spear points, found just below a carbonaceous layer containing "impact spherules" whose origin, the *PNAS* authors say, ". . . precludes all but a high-temperature cosmic impact event." Stay tuned.

[*Thanks to Phil Benham and Georgia Hoffman for sending links. –ed.*] ❑

News from the APS collection

By Howard Allen, Curator

A significant and welcome addition to the APS fossil collection has been provided by member **Judith Aldama**. Judith donated fourteen specimens of various Late Cretaceous vertebrate fossils that were collected some years ago from undocumented localities in Montana, USA. These are illustrated on the opposite page. Included are some items that were not previously represented in the Society collection and will make good "type" material for identification of future finds. Thanks very much to Judith for her generous donation.

Thanks also to **Vaclav Marsovsky** and **Don Sabo**, who helped to identify some of the material. One head-scratcher that has thus far resisted identification is item 9, an ungual phalanx ("claw bone") of some apparently uncommon animal. Figure 1 shows the specimen in different aspects. Anyone who thinks they know what it is (or has any opinions on the other specimens) is invited to contact the Curator (**editor1@albertapaleo.org**).

In other news, the specimen photography project is ongoing, slowly but surely. Material donated from 1984 to 1993 (and the latest 2013 acquisitions) have been photographed. Several of the photos in this issue of the *Bulletin* are results ("APS file photos"). ❑

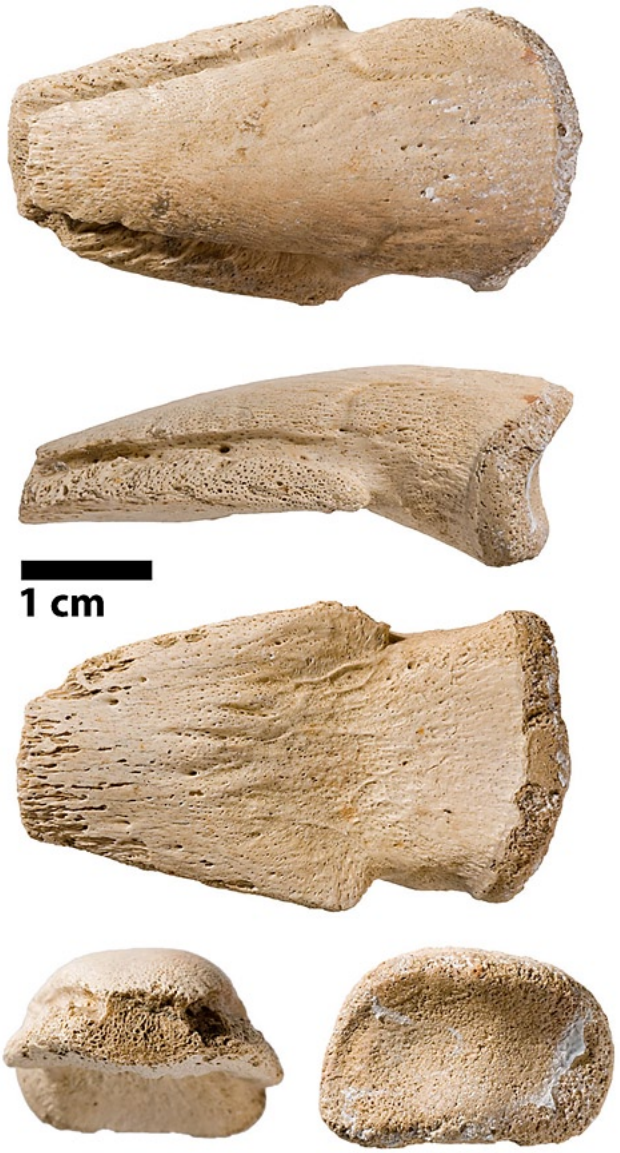

Figure 1. Unidentified ungual phalanx, Upper Cretaceous of Montana, USA. From top to bottom: dorsal, lateral, plantar, distal (left) and proximal. APS file photos.

Results of the Journal Sale

As reported in the March *Bulletin* (p. 8), a large number of scientific journals donated to the Society by **Ben Borkovic** were sold to raise funds for Society projects. The journals went to good homes and nearly $400.00 was raised. A few copies of the *Journal of Paleontology* remain unsold and will be offered at future general meetings. A big THANK YOU! to Ben Borkovic for his generous donation. ❑

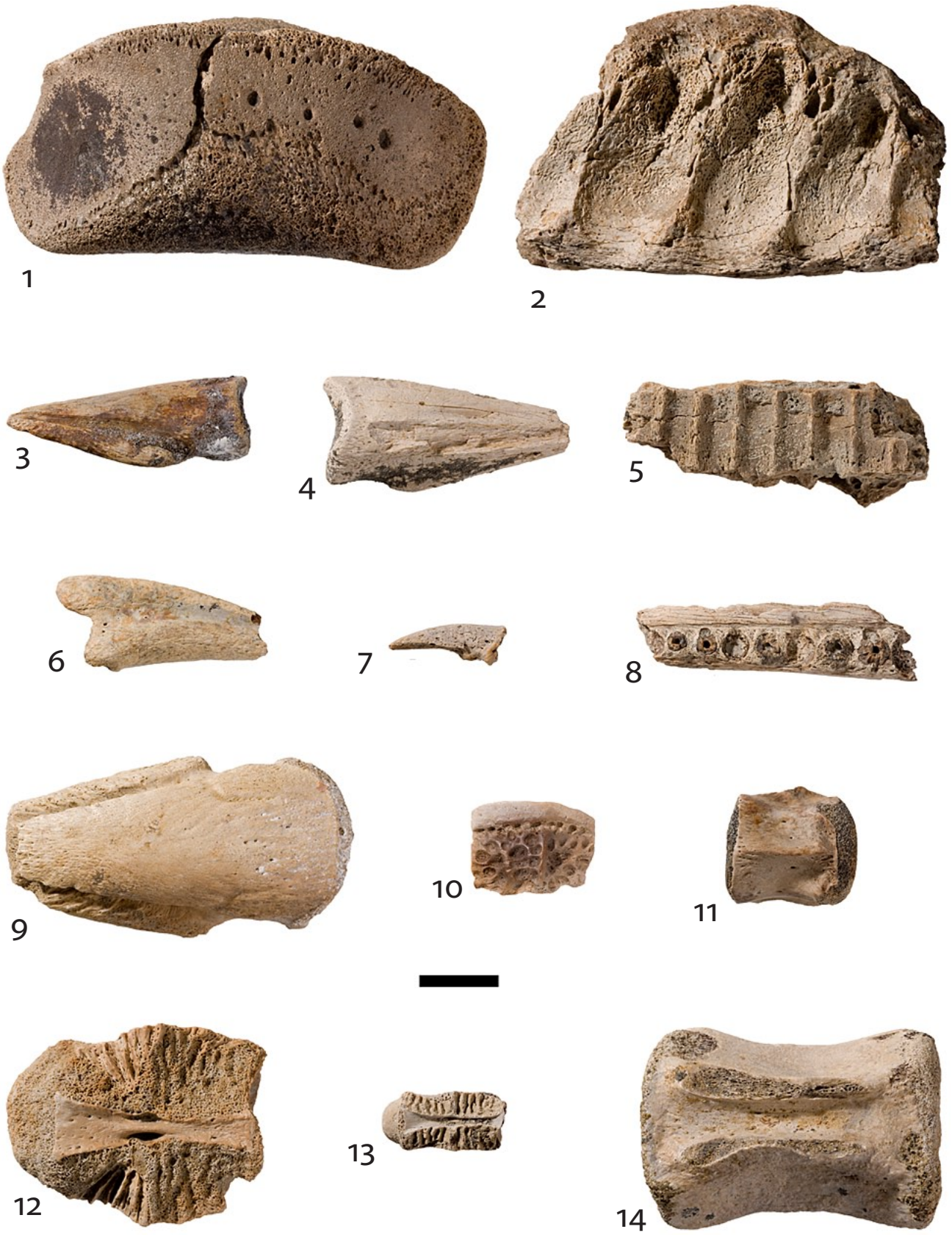

Figure 2. Vertebrate fossils donated by Judith Aldama, collected some years ago in Montana, USA (Upper Cretaceous). 1, Hadrosaur toe bone. 2, 5, hadrosaur jaw fragments. 3, 4, 6, ornithomimid ungual phalanges. 7, turtle ungual phalanx. 8, champsosaur jaw fragment. 9, unidentified ungual phalanx (see Figure 1). 10, crocodile scute fragment. 11, champsosaur cervical vertebra. 12, 13, crocodile vertebrae. 14, hadrosaur caudal (tail) vertebra. Scale bar 1 cm. APS file photos.

APS Balance Sheet for 2012

Revenues		**Expenses**	
Memberships	2440.00	Bulletin Printing	290.88
US$ Exchange	0.39	Bulletin Postage	132.60
T-shirts	240.00	Speaker Expenses	361.16
Pins	15.00	PO Box Rental	294.00
Field Trip Guides	2.00	Membership Printing	0.00
Abstract Volumes	6.00	Membership Postage	63.05
APS Book	1360.00	Field Trip Expenses	240.00
Shipping and Handling	125.71	Workshop Expenses	39.16
Misc. Sales	24.00	Symposium Speaker	2117.98
Refreshments	39.80	Symposium Abstract Printing	243.38
Field Trip Fees	380.00	Postage for Sales	109.31
Workshop Fees	705.00	Website Expenses	154.27
Donations	60.00	Refreshments	125.16
Symposium Abstract Sales	450.00	Bank Charges	80.80
Symposium Donations	544.25	Miscellaneous	71.89
Bank account interest	1.66	APS Book printing	1310.14
Public Outreach fund raising	76.00		
Subtotal Revenues	**6469.81**	**Subtotal Expenses**	**5633.78**
Plus Revenue Received in 2011 for 2012		**Plus Expenses paid in 2011 for 2012**	
2012 Membership Fees	410.00		
2012 Workshop Fees	30.00		
Savings for 2012 Symposium	1587.00		
Savings for refreshments	88.51		
Subtract Revenue Received in 2012 for 2013		**Minus Expenses paid 2012 for 2013**	
2013 Memberships Fees	455.00	PO Box rental	147.00
Donations for 2013 Symposium	744.00		
General donations for 2013	30.00		
2013 Symposium Workshop fees	150.00		
Savings for 2013 Public Outreach	76.00		
Total Revenues	**7130.32**	**Total Expenses**	**5486.78**

Excess of Revenues over Expenses = $1643.54

		Starting Jan. 1, 2012	
		Total Fund Raising Proceeds	**1,855.23**
Inventory Sale Value	**$2,107.00**	**Total Fund Raising Costs**	
Values Current to Date:	**02-Feb-13**	**Net Fund Raising**	**1,855.23**

Audited by APS Members as per the APS Bylaws:

Printed Name: Pete Trsch **Signature:** Pete Trsch **Date:** Feb 20/13

Printed Name: Doug Shaw **Signature:** Doug Shaw **Date:** April 5/13