Palæontological Society of Alberta Bulletin

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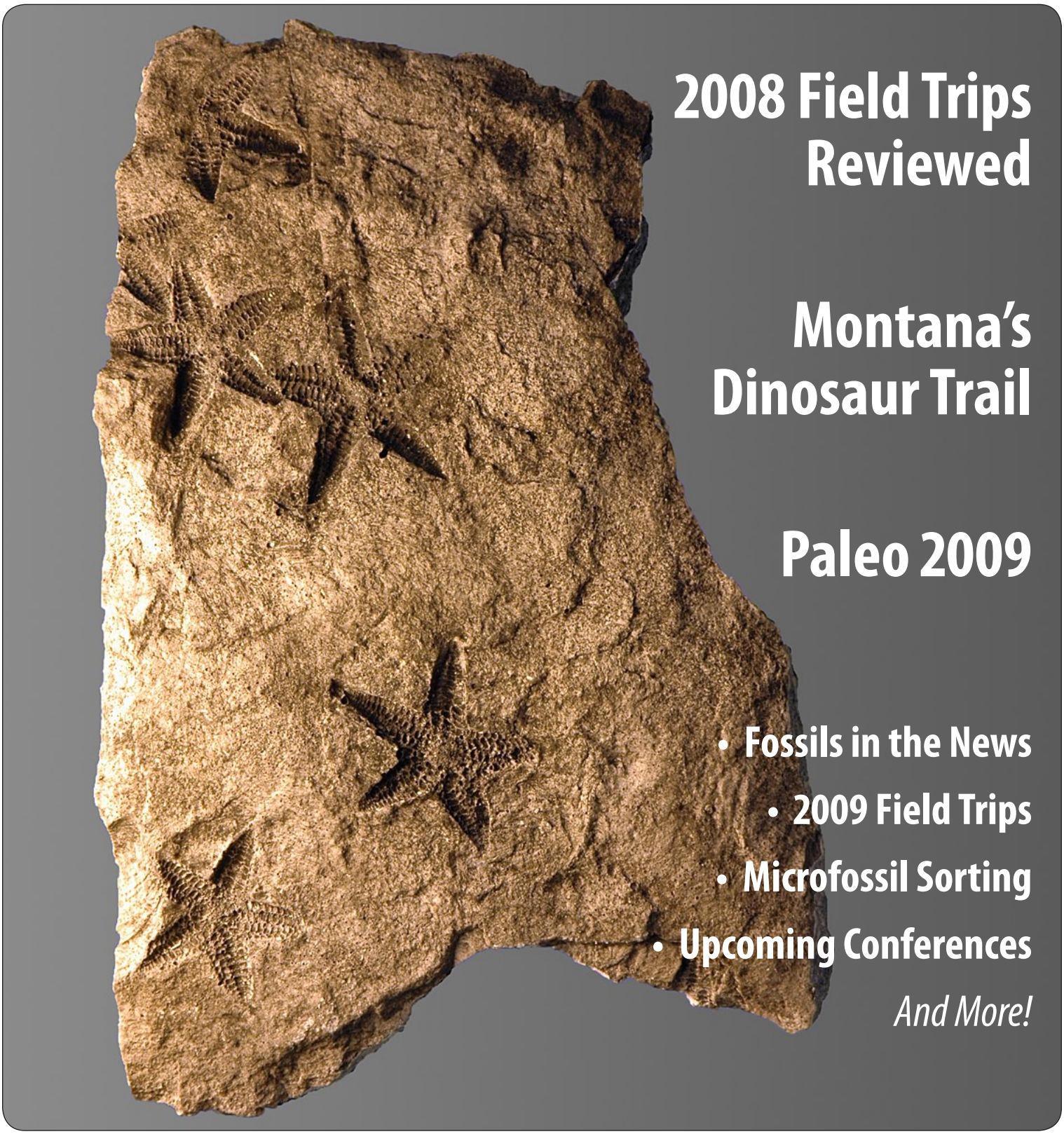

2008 Field Trips Reviewed

Montana's Dinosaur Trail

Paleo 2009

- Fossils in the News
- 2009 Field Trips
- Microfossil Sorting
- Upcoming Conferences

And More!

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**

THE BULLETIN WILL BE PUBLISHED QUARTERLY: March, June, September and December. Deadline for submitting material for publication is the 15th of the month prior to publication.

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UPCOMING APS MEETINGS

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

Friday, December 12, 2008—Christmas Social (See Page 3).

Friday, January 16, 2009—Philip Benham, Shell Canada Energy.
Garden of Eden: How the Great Rift Valley of East Africa influenced evolution (See Page 3).

Friday, February 20, 2009—Nick Longrich, University of Calgary.
Albertonykus borealis: ***a tiny, insect-eating dinosaur from the Cretaceous of Alberta.*** (See Page 4).

Saturday & Sunday, March 14 & 15, 2009
Paleo 2009, 13th Annual Symposium (See Pages 20–22).

ON THE COVER: Mystery specimen! This handsome plaster cast of fossil sea stars was donated to the Society's fossil collection sometime prior to 2008, but the current Curator could find no documentation with it. Does anyone know who donated this specimen, and can you shed any other light on it? Please contact me (Howard Allen, **editor@albertapaleo.org**) if you can help! Specimen length is 27 cm. Photo by Howard Allen.

Bylaws Update

By Dan Quinsey, President

The APS Bylaws approved by the Membership at our 2008 Annual General Meeting were reviewed by the Corporate Registry of Alberta during the summer. Corporate examiner Kiley Hodgins suggested a few more changes to clarify some issues before this document can be registered and put into place.

As well, one of our members sent the Board a letter bringing up a few items with the Bylaws as approved and offered some good suggestions to help clarify them.

Both the Corporate Examiner's comments and the letter provide by the APS member will be carefully reviewed and where possible, incorporated in revisions. The revisions will be sent back to the Corporate Examiner for evaluation before sending a notice of motion to the Membership.

It should be noted that a governing body such as the APS Board of Directors is expected to review documents such as our Bylaws periodically and amend them as necessary. This is a very good practice and is evidence your Board is doing the job you put them in office for. Patience is a virtue. ❑

Upcoming Events

December

Christmas Social

Friday, December 12, 2008, 7:30 P.M.
Mount Royal College, Room B108

This year's Christmas Social will have a fun theme with games, mock debates, various activities, and many door prizes to be won. We also have a gift for the first 30 people to arrive.

As in the past, refreshments will be provided by those who attend. Please bring finger food items. If you have special dietary needs, please be prepared by bring something special for yourself as well. Contact **Paul Dugan** (403-934-9599, **pdugan@ucalgary.ca**) for more information regarding the refreshments.

To start the evening, everyone who shows up will get a handful of raffle tickets to be used during the evening. You earn more raffle tickets during the evening simply by participating in the activities. You may also earn raffle tickets by wearing festive garb (red, green, seasonal items, etc), so come prepared!

You may also participate and earn raffle tickets by bringing in fossils or pictures to display. Everyone has a chance to earn tickets!

A container will be placed in front of each door prize to hold raffle tickets. You separate your tickets and put one half in the containers of the prizes you want to win. You can put all your tickets in one container to stack your odds, or spread your tickets among all the prizes as you wish, it's all up to you.

Don't miss this fun social event! ❑

January 2009

Philip Benham

Shell Canada Energy

Garden of Eden: How the Great Rift Valley of East Africa influenced evolution

Friday, January 16, 2009, 7:30 P.M.
Mount Royal College, Room B108

Africa's Great Rift Valley is one of the largest geological structures on Earth, stretching over 6,400 km from the Red Sea to the Kalahari Desert. Since initiation of the rift over 20 million years ago its growth has had such an impact on climate and topography that it has influenced the evolution of mammals, including early man. Famous volcanoes such as Kilimanjaro, Ngorongoro and Nyiragongo are testament to the huge volumes of lava extruded during this ongoing rifting event. The focus of this talk is a recent trip to Tanzania where I had the opportunity to examine the geology of the rift wall and ascend an active volcano to observe it in action.

Ol Doinyo Lengai (Masai for "Mountain of God") is the only active volcano in the world that erupts natrocarbonatite lavas. The lavas have a number of unusual properties including low temperature and lower viscosity than water. They also weather easily and are carried as dissolved mineral salts into nearby rift valley lakes. Lengai provides a good example of how volcanic activity has had both a local and a regional impact in East Africa.

Cloud shrouded Ol Doinyo Lengai, in East Africa's Great Rift Valley, erupts in the background as the expedition crew takes one last look before returning to base camp. Photo by Philip Benham.

Biography:

Philip has been employed by Shell Canada for fourteen years. During that time he has worked Foothills, Mackenzie Delta and offshore Newfoundland. He is chair of the CSPG Paleontology Division. He is keen to share his love of science and actively volunteers for the Burgess Shale Geoscience Foundation and the Alberta Palaeontological Society. He enjoys photography and travel to geological and culturally interesting places. Research is currently underway to find more obscure locations for future journeys.

February

Nick Longrich

University of Calgary

Albertonykus borealis*: a tiny, insect-eating dinosaur from the Cretaceous of Alberta*

Friday, February 20, 2009, 7:30 P.M.

Mount Royal College, Room B108

Program Summary

Dr. Craig Scott

Royal Tyrrell Museum of Palaeontology

(The beginning of) The Age of Mammals in western Canada

Friday, November 21, 2008

Western Canada has long been renowned for preserving some of the most spectacular dinosaur fossils so far discovered, and past and ongoing research has solidified the region as a hotbed for dinosaur palaeontology. While dinosaurs continue to garner the awe and scientific interest of amateurs and professionals, a less conspicuous but equally important component of Late Cretaceous and Early Paleogene terrestrial vertebrate faunas, the mammals, remains less well understood. Strata in the Western Canada Sedimentary Basin document a

dense record of early fossil mammal succession that spans the late Santonian through early Paleogene, and of the approximately 25 million years of mammalian evolution documented by this interval, perhaps none is better represented in terms of quantity and quality of specimens than the Paleocene.

More than fifty Paleocene age mammalian local faunas are known from Alberta and Saskatchewan

Over fifty Paleocene age mammalian local faunas are known from Alberta and Saskatchewan, collectively spanning a temporal interval from the Puercan (earliest Paleocene) to the late Tiffanian (late Paleocene). The Ravenscrag Formation of southwestern Saskatchewan yields the oldest Paleocene mammals in Canada and includes the earliest primates and carnivorans so far discovered. Slightly younger faunas are known from the Paskapoo Formation in the Calgary and foothills regions of southern Alberta; these localities document diverse assemblages of multituberculates, archaic ungulates, insectivorans, and primates. The youngest Paleocene mammals are known from localities in the Paskapoo Formation of the Red Deer River valley near Red Deer, Alberta; these localities have produced abundant and exquisitely preserved specimens that record a remarkable diversity of multituberculates and placentals, and include some of the largest Paleocene mammals so far discovered in western Canada.

Unlike mammals of the Late Cretaceous, which were almost uniformly of small body size and of limited taxonomic diversity, Paleocene mammals, especially placentals, are characterized by larger body size and possess astonishing suites of dental adaptations that are clearly indicative of radiations into a variety of ecological niches. While there is some evidence for a decline in mammalian taxonomic diversity in response to hypothesized climatic cooling through the Paleocene in other parts of the Western Interior, this does not appear to be the case in western Canada.

Biography:

Dr. Scott is Edmonton born. He received his Ph.D. in 2007 from the University of Alberta. His dissertation research was on late Paleocene mammals from near Red Deer, Alberta, with a particular focus on the phylogeny of early lipotyphlan insectivorans. He currently holds the position Curator of Fossil Mammals at the Royal Tyrrell Museum of Palaeontology.

His interests are in mammalian palaeontology, insectivoran phylogeny, mammalian biogeography; current research on mammals of the Belly River Group of southern Alberta and examining patterns of faunal change across the K/T boundary. ❑

Skull and lower jaw of *Pararyctes pattersoni*, a late Paleocene insectivoran from the Paskapoo Formation of Alberta. Photo courtesy of Dr. Craig Scott.

May 2008 Rock Show Thanks

By Dan Quinsey

The Calgary Rock and Lapidary Club Gem, Mineral & Fossil Show, "A Hobby for All Ages," was held at the West Hillhurst Arena Saturday and Sunday, May 3 and 4. The APS provided activities for children which were very well received. We will keep the same focus next year.

I would like to thank the following members for volunteering their time to man the APS booth and making this event a huge success: **Les Adler**, **Geoff Barrett**, **Wayne Braunberger**, **Cory Gross**, **Lyle Hartwig**, **Jake Jakielaszek**, and **Harvey Negrich**.

Good job, everyone! ❑

Dan Quinsey talks fossils with a young enthusiast. Photo by Sandy McCracken, Geological Survey of Canada.

The October Rock 'n' Fossil Road Show

By Dan Quinsey

The 9th semi-annual Rock 'n' Fossil Road Show was held at the Crowfoot Library on Saturday, October 18, 2008 from 11 A.M. to 3 P.M. and drew close to 600 visitors making this one of the busiest shows to date. An average of twenty-five to thirty people were crowded around the six display tables at any given time. Visitors were able to view posters, rocks, minerals and fossils put on display by the Geological Survey of Canada and the Alberta Palaeontological Society.

The Rock 'n' Fossil Road Show is hosted by the Calgary Science Network, Geological Survey of Canada, Calgary Public Library, Alberta Palaeontological Society, and Natural Resources Canada. It visits a different Calgary Public Library every spring and fall to identify and answer questions about rocks, minerals, and fossils brought in by the public.

Volunteers on hand were: **Sandy McCracken**, **Godfrey Nowlan**, **Rob MacNaughton**, **Larry Lane**, **Glen Stockmal**, **Terry Poulton**, **Mike Cecile**, **Karen Fallas**, **Linda Chan**, **Alejandra Duk-Rodkin**, **Rod Smith**, and **Suzanne Twelker** from the Geological Survey of Canada; **Grant Smith**, formerly of the GSC; and **Dan Quinsey** and **Nick Elderfield** from the Alberta Palaeontological Society. Also on hand were **Judy Samoil** of Natural Resources Canada (Edmonton), **David Luinstra** of the Calgary Public Library Crowfoot Branch, and **Jan Brigden** of the Calgary Science Network. ❑

The Sky is Falling!

Library Notes

By Garren Dugan

Now that I have your attention: Who is your APS Librarian? My name is Garren Dugan. I became a member of the Society some time ago, and not long after, in September 2006 I was voted to become the Librarian. After enjoying this new responsibility, I craved much more. Therefore, not long after, in May 2007, I became the Society's Secretary. I am currently going to SAIT Polytechnic for a Railway Conductor course. I'm also a volunteer firefighter for Carseland Fire Hall (my home town). I enjoy all fields of palaeontology, geology, and anything that is old—including antiques.

Now, before I say any more, please feel free to visit me back in my little corner at the meetings. Also keep in mind that all APS members are able to sign out books or videos at any meetings.

Lastly, the following books were donated on October 17, 2008:

Thanks to Sam Richter—

Extinction: Bad genes or bad luck? By David M. Raup, 1991.

Thanks to Philip Benham—

Jump start guide to better photography with your new digital camera. By London Drugs, 2008.

Geysers: What they are and how they work. By T. Scott Bryan, 2005.

The life of the cave: Our living world of nature. By Charles E. Mohr and Thomas L. Poulson, 1966. ❑

Field Trip Reviews

Trip 2008-1
June 21–22, 2008
Nordegg area, Alberta

Article and photos by Keith Mychaluk

On the weekend of June 21–22, a strong contingent of APS members met at Nordegg, Alberta to investigate a number of marine invertebrate fossil localities. Yours truly was fashionably late and managed to miss the first couple of stops just to the east of Nordegg, along Highway 11. An outcrop off the beaten path exposing the organic-rich black shales of the Lower Carboniferous Exshaw Formation was reviewed, while a road-cut along Highway 11 yielded many excellent brachiopods. The brachiopods represented a number of families including productids and spirifirids, up to 5 cm in width. They were found weathering out of their Upper Devonian limestone host rock (Costigan Member, Palliser Formation) and could be exposed by splitting the talus along the road cut. Diligent searching among the debris also yielded perfect three-dimensional brachiopods that had weathered out of the limestone all on their own. Many brachiopods revealed an inner lining of microcalcite crystals if broken open. Access to the road cut was easy as there was a day-use area parking lot right across the highway from the locality—about a five minute drive east of Nordegg.

Figure 1. Crescent Falls on a beautiful June day.

Figure 2. Canyon of the Bighorn River below Crescent Falls, exposes rocks of the Lower Cretaceous Luscar Group.

From the road cut the group travelled westward to Crescent Falls where I met up with everyone. After lunch (shared with many hungry squirrels) and a photo-op at the double falls (Figure 1) it was off to our next locale.

Wayne Braunberger, our leader, had us bushwhacking through the trees in search of an elusive path, which we eventually found (I think). That led

Figure 3. The steep trail down to—and more notably *up from*—the Bighorn River canyon.

us to the deep canyon of the Bighorn River below the falls (Figure 2). A very steep trail (Figure 3) led to the bottom where a small picturesque waterfall made for a scenic backdrop to our next stop.

Thin, sandy beds in the Cretaceous marine rocks (Lower Moosebar Formation, Luscar Group) contained a profusion of *Corbicula* (*Leptesthes*) aff. *C.* (*L.*) *fracta* (bivalves) and some gastropods (Figure 4). These sandy lenses are thought to be northern equivalents of the better-known "Ostracod" marker beds of the Lower Mannville/Blairmore Group of the southern Alberta subsurface. The steep climb out certainly got everyone's heart pumping, allowing for many opportunities to stop, rest and enjoy the stellar views. Although the weather was sunny and warm, snow still clung to shady notches within the canyon, sometimes forming wonderful ice falls.

From Crescent Falls, we drove back downstream and re-linked with the North Saskatchewan River at Bighorn Dam. Huge exposures of the Cretaceous Wapiabi Formation can be accessed in this area. *Scaphites* ammonites, *Inoceramus* bivalves and some belemnites can be found here although complete specimens are a challenge to find. One must pay close attention to the safety warnings in and around the power generation station below the dam in the main collecting area. As the afternoon came to a close, everyone returned to Nordegg for an overnight stay.

The following morning we awoke to pouring rain so I was glad to have stayed at the Nordegg Lodge, as some of our camping colleagues looked quite soggy. It was decided to cancel the remainder of the day's activities, though some of us decided to meet fur-

Figure 4. Bivalve coquina (*Corbicula* sp.), Lower Cretaceous Moosebar Formation, Bighorn River canyon. These beds are thought to be equivalent to the "Ostracod zone," an important marker bed in the oilfields of southern Alberta.

Figure 5. Specimens of the Late Cretaceous ammonite *Scaphites* sp. from the Wapiabi Formation.

ther south (on the return trip to Calgary) at Cripple Creek, along the Forestry Trunk Road. As luck would have it the rain had stopped prior to our arrival, but the creek was running high. A few *Scaphites* and *Inoceramus* were discovered by the group (Figure 5).

On the final drive home a few of us were rewarded with a close encounter at Ram Falls with a large herd of Rocky Mountain bighorn sheep including lambs and big rams (Figure 6).

Figure 6. The cute and the majestic put in appearances at the aptly named Ram Falls.

Trip 2008-2
July 19–20, 2008
Flathead Valley, BC

Article and photos by Keith Mychaluk

Once again terrific weather and new territory greeted the APS members who took part in the second field trip of the season. APS member **Guy Santucci** of Cranbrook, BC and trip leader Wayne Braunberger conspired to map out our exploration of the region south of Fernie, BC along the Flathead River valley. After gathering early on Saturday morning at the village of Morrisey (just southwest of Fernie) the group caravanned southward, ending up

Figure 7. Westward view of the Macdonald Range from Kisoo Pass.

at Kisoo Pass (Figure 7). After much debate by our fearless leaders about our route we finally chose an abandoned logging road and began hiking up our selected mountain (wild mini-strawberries were a refreshing snack along the way). Although outcrop was rare and usually only exposed by overgrown road cuts, we found tantalizing evidence of exceptional marine invertebrate fossils. Nice three-dimensional *Scaphites* ammonites and *Inoceramus* bivalves were found by most but were very rare and seemed to only occur in patches. This area is worthy of much more exploration. Unfortunately our time on the mountain came to an end and most of us were scattered widely across it but all managed to return safely. Below the mountain several of us decided to camp for the night (Figure 8) while others returned to Fernie.

The following morning all returned to Kisoo Pass and once again joined the caravan now pushing even further south, arriving just short of the US border with Montana. Our destination was Couldrey Creek,

Figure 8. Field trippers enjoy a campfire at Kisoo Pass.

where our old 1950s geological references discussed a variety fossils that had been found within the Tertiary-aged Kishenehn Formation. Again, after much debate by the leadership caste, we decided to head downstream. The debate centred around an apparent change in our position on the old maps versus what we were experiencing on the ground. Our conclusion was that the road had been modified since the 1950s reports had been made. Our subsequent bushwhacking downstream confirmed our suspicion as we found one of the key outcrops (Figure 10). This one contained a layer with

Figure 9. An orange butterfly finds something in common with Keith's backpack.

abundant gastropod impressions. After a thorough investigation of this remote outcrop the group had lunch on a nearby gravel bar in the creek where the author witnessed a flourishing love affair between an orange butterfly and his orange backpack (Figure 9); but like Romeo and Juliet it was not meant to be.

Then it was back to the waiting vehicles as we all had a long drive back to Calgary. Upon returning to the cars, APS member **Doug Shaw** and son **Tim** informed us that they had discovered considerably more outcrop that we all missed earlier. Apparently the roads were not the only thing that had changed since the 50s: the creek had also changed course,

Figure 10. Outcrop of the Kishenehn Formation on Couldrey Creek.

leaving a long stretch of cutbank hidden in the forest. We all decided that a return trip was needed to explore the cutbank in hopes of finding the elusive mammal fossils we had been searching for. Watch for a future APS trip!

Those with 4x4s and good ground clearance took the more direct route back home by driving straight north to the coal mining town of Corbin, BC. Previous rains had left some impressive water-filled potholes, making for a bumpy but absolutely fun drive! Pavement finally awaited us at Corbin and then it was back to Calgary via the Crowsnest Pass. Another successful trip filled with great rocks, beautiful weather and unmatched scenery!

Trip 2008-3
July 16–17, 2008
Eastend area, Saskatchewan

Article and photos by Keith Mychaluk

The third and final APS field trip took us to another hidden gem of the Canadian West: Eastend, Saskatchewan. The group all met on Saturday, July 16 at the new *T. rex* Discovery Centre, overlooking Eastend within the Frenchman River valley. Eastend hides in the southwest corner of Saskatchewan and was at the "east end" of the Mounties' horseback patrols from the neighbouring Cypress Hills in the 1800s. Over a hundred years later palaeontologists discovered Saskatchewan's first (and one of the world's most complete) *Tyrannosaurus rex* skeletons. Dubbed "Scotty" by the scotch-drinking discoverers, this skeleton has been a boon to both science and the local community, culminating in the *T. rex* Discovery Centre. This small but impressive museum houses great display specimens and serves as Saskatchewan's main preparatory lab for fossils found across the province. Full-size skull casts of many of the famous *T. rex* discoveries are on display in the main gallery and include, among others, "Sue" from South Dakota and "Black Beauty" from southern Alberta. After partaking in a public tour of the museum our group was treated to a backrooms tour of the preparatory lab. Our timing was fortunate as University of Alberta grad student, Lara Shychoski, and Palaeo Tech, Wes Long, were packing up Scotty's skull for transportation (Figure 11). Scotty was to receive a MRI in hopes of revealing more secrets about the brain case of tyrannosaurs.

Figure 11. Scotty's predentary being packed for shipment.

After lunch in town, it was off to the old clay pits near Ravenscrag. The Whitemud Formation was (and still is in some places) mined in Saskatchewan

Figure 12. Prairie scenery near Eastend, Saskatchewan. The white patches at the base of the badlands are exposures of kaolin clay in the Whitemud Formation—definitely not snow!

as a source of clay for bricks and pottery. The mining process has exposed other rock units, many fossil-bearing, in the same areas. In particular, a wonderfully diverse flora, from the earliest Tertiary, is known from the area. Although Saskatchewan law prohibited us from collecting any plant remains the group was able to observe and photograph many leaf imprints scattered throughout the clay pit tailings.

As the heat was stifling, the field portion of the day ended early, leaving time to explore the aptly named "Valley of Hidden Secrets" on our own. Many APS members toured local landmarks, such as Crazy Horse's Camp, in the comfort of air conditioning. I spent time taking many photographs of the Frenchman River valley landscape (Figure 12).

On Sunday it was back to Alberta along one of the most remote routes in the southern prairies: the Redcoat Trail (Highway 13 in Saskatchewan and Highway 501 in Alberta). As much of the route is unpaved, our group spread out considerably during the drive. As such, the only other vehicle I came across in two hours of driving was a burned up semi-trailer truck—still smoldering when I passed. Of course the lack of human activity is a great opportunity for wildlife to show itself and in this country birds of prey are king. I saw several different types of hawks and one golden eagle all curiously watching me from fence posts along the road. Several ghost towns are also located along this route, including Senate and Robsart in Saskatchewan and Cressday and Bain in Alberta; all reminders of the pioneer farming heyday prior to the Dirty Thirties.

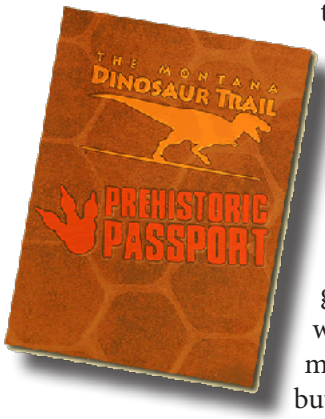
After regrouping it was off to a familiar Upper Cretaceous locality along South Manyberries Creek (southeast of Manyberries, Alberta), the site of several past APS trips. Reachable via oil well access roads, exposures of the Dinosaur Park Formation contain an abundance of micro-vertebrate remains as well as bivalves and gastropods. Again the heat was a limiting factor in the territory explored but I'm sure most found examples of Cretaceous fish scales, crocodile teeth, champsosaur vertebrae, theropod teeth and turtle shell among others. An eagle nest and a strange Doug Shaw-pronghorn antelope cross were also spotted by the group.

And so ends another APS field season: one of the best for weather in recent memory. As we head into winter let's all hope we took good field notes as we prepare and catalogue our discoveries. Thank you to Wayne Braunberger for organizing this year's trips and thank you to all the participants who make the trips so enjoyable for all. ❑

The Montana Dinosaur Trail

Article and photos by Dan Quinsey

The Montana Dinosaur Trail lets visitors follow in the footsteps of the prehistoric giants. During the Cretaceous and Jurassic periods, Montana was a lush, tropical nirvana for dinosaurs ranging from *Tyrannosaurus rex* to *Maiasaura*. Millions of years later, Montana is still prime country for dinosaurs, attracting palaeontologists both young and old from all over the world.



The Montana Dinosaur Trail organizes fifteen facilities in thirteen communities that feature significant, unique and world-class palaeontology displays and activities. On the trail you'll see the largest assembly of dinosaurs collected within the United States, including the first baby dinosaur bones found in the USA as well as the world's best preserved dinosaur. New fossil discoveries are happening all along the trail and many of these will be prepared and displayed at the Trail's facilities.

The Montana Dinosaur Trail also has a small booklet developed by the trail partners, called the "Prehistoric Passport." The Passport describes the dinosaur displays, exhibits and activities found along the trail. It also includes Fun Fossil Facts, room for field notes and space for a unique stamp that is available from each trail facility. If you get your Passport stamped at all of the fifteen facilities in Montana, you can redeem it for a gold-seal certificate of your completion of the Dinosaur Trail and a Passport T-shirt.

The Prehistoric Passport is available at each trail facility for US$5.00. For an additional $2.00 shipping fee (US$7.00 total) you can have a Passport mailed to you by calling (406) 654-1866, email **janee@mtintouch.net**.

I have not been able to make it to all of the facilities yet but the many I did visit were fantastic. Each stop has a unique exhibit you will not encounter at any of the other facilities. The Museum Curator is usually the person to greet you at the door and in every case, was helpful and eager to make our visit a memorable one. There is so much to share but I don't want to spoil you by showing you everything, so I will just give you some tidbits to whet your palate.

At the H. Earl Clack Museum in Havre we were treated to many displays specializing in embryonic or infant dinosaurs including "Ducky," the infant lambeosaur. At the time, the skull and jaw portions had been removed for research.

Baby lambeosaur "Ducky," a composite of bones from at least six individuals.

The Blaine County Museum in Chinook was our next stop. Jude Sheppard, the Curator, was quite helpful in guiding us around the museum and answering all of our questions. This museum features many unique fossil remains of palaeo-life from the seas. Shown (next page) are a plesiosaur paddle and skull.

At the Malta Field Station, we were given a "special after-hours tour" by the Curator, once she heard we had come all the way from Alberta, Canada just to see "Leonardo," the famous mummified dinosaur, *Brachylophosaurus canadensis*. Although I was able

Lab technicians at the Museum of the Rockies in Bozeman prep a sauropod bone.

Jude Sheppard, Curator at the Blaine County Museum in Chinook, Montana, holds a hadrosaur vertebra.

Sharon Emond, Curator at the Phillips County Museum in Malta, shows off a *Stygimoloch* (pachycephalosaur) skull from the Upper Cretaceous of Montana.

to get some pictures of Leonardo, I was also asked not to publish them, as research on this specimen was still ongoing.

Also in Malta is the Phillips County Museum where we met curator Sharon Emond. Sharon was very enthusiastic in giving us a tour of the museum and even opened up a showcase to hold a *Stygimoloch* skull and pose for a picture. Featured in the museum are many of the discoveries from the Judith River Formation including "Elvis," a 10 m long *Brachylophosaurus*, one of the best articulated dinosaur skeletons ever found.

Skull cast of a plesiosaur, *Alzadasaurus* (Upper Cretaceous), Blaine County Museum.

"Big Mike," a big metal tyrannosaur model, greets you as you enter the Museum of the Rockies in Bozeman. Featured in this museum were fantastic specimens of *Tyrannosaurus* and *Edmontosaurus* to name a few. The gift shop was very well stocked with many books and palaeo-related videos as well. This is a stop you must make on the Dinosaur Trail.

Plesiosaur flipper in the Blaine County Museum.

These are only a few tidbits from the Dinosaur Trail. Treat yourself to a vacation and visit Montana to take in the beautiful sights and the Dinosaur Trail. You will not be disappointed. ❑

Fossils in the News

[*Editor's note: If readers detect a big improvement in this issue's News section, it's because we have a new News Editor!* ***Chris Marion*** *has been a member since 2000 and recently moved with her family from Whitehorse, Yukon to Drumheller, where she is employed at the Royal Tyrrell Museum. I know I speak for the Society in extending a warm welcome to Chris and thanking her for what I hope will be an ongoing contribution to the* Bulletin. *–HA*]

Faculty of Science, University of Alberta
ScienceDaily (online) October 2, 2008

New horned dinosaur unveiled

GRANDE PRAIRIE, Alberta—A 72.5-million-year-old bonebed discovered in the 1970s at Pipestone Creek (30 km southwest of Grande Prairie) has given science a new dinosaur: *Pachyrhinosaurus lakustai*. The name honours Al Lakusta, the now-retired science teacher who first stumbled upon and started excavating the bonebed, bringing his discoveries to the attention of the Royal Tyrrell Museum. Pachyrhinosaurs had a large bony frill on the back of the skull which was ornamented with small horns. They also sported large bony structures above their nose and eyes, giving them their name of "thick-nosed lizards." Those structures probably supported keratin horns.

The importance of the Pipestone Creek bonebed cannot be understated. The density and preservation of the material is outstanding, and the various age groups represented by the twenty-seven individuals in this bonebed make it possible to investigate individual variations and growth patterns, the possibility of sexual dimorphism in this species, and possible behaviour such as herding. Look for the recently-published monograph, *A new horned dinosaur from an Upper Cretaceous bone bed in Alberta* by **Phil Currie***, Wann Langston, Jr., and **Darren H Tanke** (NRC Press, **http://pubs.nrc-cnrc.gc.ca/eng/books/books/9780660198194.html**).

For story details, see *A new dinosaur species unveiled,* **http://www.science.ualberta.ca/news.cfm?story=84079** and *New dinosaur species* Pachyrhinosaur lakustai*, had bony frill and horns*, **http://www.sciencedaily.com/releases/2008/10/081002092856.htm**

CBC News (online) October 13, 2008

Rare sauropod tracks a mighty find

SPARWOOD, British Columbia—Finally, proof that sauropods also lived in what is now Canada! Evidence of those giant, plant-eating dinosaurs had so far remained elusive, but the August 2008 discovery of a trackway at a mine near Sparwood, BC (south-eastern tip of the province) now sheds a bit of light on the movements of those beasts. **Rich McCrea**, Curator of the Peace River Paleontology Research Centre in Tumbler Ridge, BC and a dinosaur tracks expert, has made a cast of the rare metre-long tracks and will be returning to the site to complete more detailed mapping and measuring of the trackway found on a vertical slab of rock. A cast of the trackway will be available for viewing at the Dinosaur Discovery Gallery of the Tumbler Ridge Museum when it re-opens at its new location in 2009.

See *B.C. paleontologists seek clues in rare dinosaur tracks*, **http://www.cbc.ca/technology/story/2008/10/12/bc-sauropod-tracks.html**

CBC News (online) August 27, 2008
Winnipeg Free Press August 28, 2008

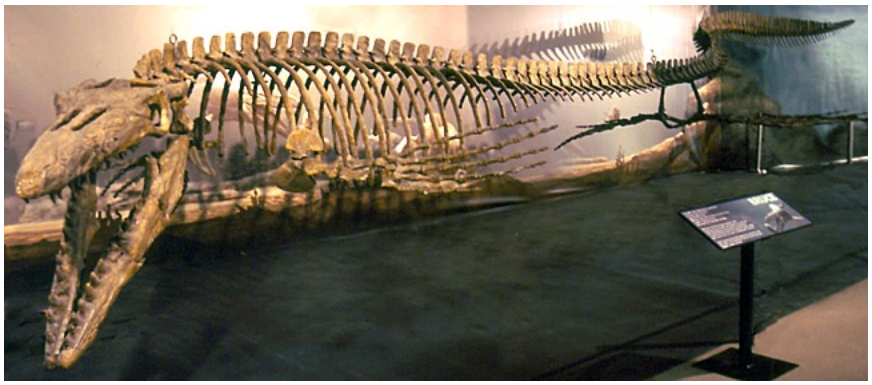
Mosasaur fossil found in Manitoba

MORDEN—Manitoba now boasts another big mosasaur, discovered this summer by a crew participating in a public dig with the Canadian Fossil Discovery Centre in Morden, and nicknamed "Angus." At 11 m in length, the 80-million-year-old marine reptile is only slightly smaller than "Bruce"—at 13 m, the biggest specimen ever found by the museum (see photo, next page). A second mosasaur was also found near Angus; based on the size of its jaw, it is probably about 7.5 m long.

But that's not all that the Centre came across this summer: the School/Youth Dig Program also found a death assemblage consisting of over 180 elements, including more mosasaur bones, a shark tooth, and bones from plesiosaurs, birds and at least two species of fish.

Visit the Discovery Centre's website at **http://www.discoverfossils.com/Research/FieldResearch.html** for more information and pictures about both those digs. See also *Manitoba dig uncovers 80-million-year-old sea creature*, **http://www.cbc.ca/technology/story/2008/08/27/mosasaur.html**

* Names highlighted in **bold text** are APS members.



Morden Museum's "Bruce" the mosasaur, currently the museum's biggest specimen, at 13 m. Photographed in 2008 by Vaclav Marsovsky.

CBC News (online) September 23, 2008
ScienceDaily (online) September 25, 2008

Alberta chicken-sized dinosaur is smallest in North America

DRUMHELLER—Digging through bones collected in 2002 in an *Albertosaurus* bonebed from Dry Island Buffalo Jump Provincial Park and stored at the Royal Tyrrell Museum has yielded unexpected results for Nick Longrich, a palaeontology research associate at the University of Calgary. Bones from the smallest known North American dinosaur were hiding amongst the larger bones.

Albertonykus borealis, a slender, 75-cm long, 70-million-year-old dinosaur, ran on two legs and probably used its short, powerful forelimbs to tear apart logs in search of termites. Creatures similar to *Albertonykus* have previously been found in Asia and South America. Longrich and University of Alberta palaeontologist **Phil Currie**, who led the excavation on the bonebed, reported on their find in the August issue of the journal *Cretaceous Research*.

See *Small "Dr. Seuss"-like dinosaur dug up in Alberta*, **http://www.cbc.ca/technology/story/2008/09/23/chicken-dinosaur-alberta.html** and *America's smallest dinosaur uncovered*, **http://www.sciencedaily.com/releases/2008/09/080923104414.htm**

ScienceDaily (online) November 14, 2008
CBC News (online) November 13, 2008

"One of a kind" dinosaur nest

CALGARY—Researchers at the University of Calgary and Royal Tyrrell Museum have determined that a 77-million-year-old dinosaur nest previously labelled as "hadrosaur" is in fact the nest of a small theropod, probably either a dromaeosaurid or a caenagnathid, both small meat-eaters closely related to birds. The nest and its eggs, which were found in northern Montana in the 1990s and belonged to a private Calgary collector, drew University of Calgary palaeontologist **Darla Zelenitsky**'s attention when she noticed that the long, pointed shape of the eggs was not like the expected round shape of hadrosaur eggs. Further investigation of five of the twelve eggs—which are each about 12.5 cm long—confirmed her suspicions. This nest is the first of its kind in North America, and probably in the world. Zelenitsky and **François Therrien**, curator of dinosaur palaeontology at the Royal Tyrrell Museum and co-author of the study, described their find in the November 13, 2008 issue of the journal *Palaeontology*.

The Tyrrell Museum will display the nest and its eggs in the Discovery Gallery starting at the end of November. For details, see *Dinosaur Whodunit: Solving A 77-million-year-old Mystery,* **http://www.sciencedaily.com/releases/2008/11/081113181200.htm** and *Alberta researchers reveal details of "one of a kind" dinosaur nest,* **http://www.cbc.ca/technology/story/2008/11/13/nest-dinosaurs.html**

ScienceDaily (online) October 22, 2008

Polar dinosaur migrations might have been shorter than thought

EDMONTON—Analysis of the energy requirements for dinosaur migration shows that the 6,000 km treks covering 30 degrees of latitude thought to be necessary for winter survival in higher latitudes were impossible for some dinosaurs.

University of Alberta researchers Phil Bell and **Eric Snively** recently reported in *Alcheringia: An Australasian Journal of Paleontology* that, although polar dinosaur migrations have most evidently occurred, most species may not have been able to sustain the effort needed to travel such great distances in their bi-annual migration, and they would have overwintered in the cold, dark polar latitudes, much like many animals do now.

See: *Study of polar dinosaur migration questions whether dinosaurs were truly the first great migrators*, **http://www.sciencedaily.com/releases/2008/10/081021185205.htm**

CBC News (online)
October 28, 2008

It's all in the nose

CALGARY—Olfactory bulbs, the part of the brain that processes the sense of smell, were unusually large in tyrannosaurs and dromaeosaurs, suggesting a keen sense of smell. University of Calgary palaeontologist **Darla Zelenitsky** and her colleagues came to that conclusion after looking at impressions of the olfactory bulbs left in the skulls of eighteen theropods, the primitive bird *Archaeopteryx* and the modern American alligator. The study, published in the British journal *Proceedings of the Royal Society B* in late October, also found that *Archaeopteryx* seemed to have had a relatively strong sense of smell when compared with modern birds.

See: *T. rex had a nose for hunting, Alberta researchers say*, **http://www.cbc.ca/technology/story/2008/10/28/trex-calgary-smell.html**

ScienceDaily (online) August 27, 2008
CBC News (online) August 28, 2008

Alberta pregnant turtle and nest of turtle eggs

MANYBERRIES, Alberta—The world's first-ever fossil of a pregnant turtle, and a nest with fossilized turtle eggs, are now on display at the Royal Tyrrell Museum. The 75-million-year-old turtle, found in 1999 in the badlands of the Manyberries area by Tyrrell staff, was partly broken when it was discovered, which allowed University of Calgary palaeontologist **Darla Zelenitsky** to see the remains of at least five crushed eggs inside the body. A CT scan of the fossil showed there are more eggs hidden under the turtle's shell. In 2005 Zelenitsky found in the same area the nest containing twenty-six fossilized eggs laid by another individual of the same large river turtle, *Adocus.* She presented both discoveries in the August 27, 2008 issue of the British journal *Biology Letters*.

See: *First prehistoric pregnant turtle and nest of eggs discovered in southern Alberta*, **http://www.sciencedaily.com/releases/2008/08/080827152614.htm** and *World's 1st pregnant turtle fossil found in Alberta*, **http://www.cbc.ca/technology/story/2008/08/28/fossil-pregnant-turtle.html**

www.albertapaleo.org

ScienceDaily October 16, 2008

Hadrosaur crests' function

TORONTO—CT scans and computer models are helping shed light on the function of the hadrosaur crests and the long, convoluted nasal passages found within. The crests have variously been proposed to be a structure for display, for temperature regulation, or for enhancing the sense of smell by increasing the surface area of olfactive sensory tissue. Alternatively, computer models have shown that hadrosaurs may have been able to produce low, bellowing sounds with the crests acting as resonating chambers during vocalization.

In an effort to gain insight into the real function of the crests, David Evans from the University of Toronto, Jack Horner from Montana State University and Ohio University's Lawrence Witmer and Ryan Ridgely have looked inside those crests: they CT-scanned skulls from four lambeosaur species in order to reconstruct their nasals cavities and the shape of their brains.

The scans have shown that the dinosaurs had the delicate inner ear necessary to hear low-frequency calls that the crests may have produced, but that the part of the brain used to process smells was rather small and primitive. The centres associated with higher cognitive functions were found to be rather large, and hadrosaurs may have had the brain power to use both visual and vocal displays for communication.

See: *Brain structure provides key to unravelling function of bizarre dinosaur crests*, **http://www.sciencedaily.com/releases/2008/10/081016095141.htm**

CBC News (online) September 4, 2008

Last woolly mammoths were North American descendants

HAMILTON, Ontario—DNA analysis of hair and bone specimens taken from 160 mammoths from much of their Ice Age range has shown that, contrary to general thought, the last woolly mammoths may have come from North America and not Siberia.

In the September issue of *Current Biology*, associate professor Hendrik Poinar and post-doctoral fellow Regis Debruyne, both at McMaster University in Hamilton, report that North American mammoths, which were presumed to have evolved in isolation from Eurasian species and therefore to have played a negligible role in mammoth evolution, may in fact have established themselves on this side of the Bering

Strait earlier than thought, then migrated back to Siberia, replacing the Eurasian populations.

See: *Last woolly mammoths had North American roots: study*, **http://www.cbc.ca/technology/story/2008/09/04/woolly-mammoths.html**

National Geographic News (online) October 21, 2008
ScienceDaily (online) November 8, 2008

Dino "dance floor"—or not

ARIZONA—University of Utah geologist Marjorie Chan and graduate student Winston Seiler said they have discovered a large concentration of dinosaur tracks with a range of sizes representing all age groups and at least four different species, in what would have been the soft, wet sands of a watering hole 190 million years ago. They published their study in the October issue of the journal *Palaios*.

But a team of palaeontologists from various US agencies has since visited the site in northern Arizona and they say the trampling surface represents not dinosaur tracks, but rather a dense collection of unusual potholes that pockmark the sandstone. The original study had considered, but argued against, the possibility of the features being potholes. Though they are not retracting their study, the authors of the first study will work with the second team of palaeontologists to further investigate the site.

See: *Dinosaur "dance floor" found in Arizona*, **http://news.nationalgeographic.com/news/2008/10/081021-dinosaur-dance.html** and *Paleontologists doubt "dinosaur dance floor"*, **http://www.sciencedaily.com/releases/2008/11/081107163306.htm**

CBC News (online) October 30, 2008

Early feathers for display, not flight

CHINA—Fossils of *Epidexipterix hui*, a pigeon-sized theropod dinosaur discovered in Inner Mongolia, show two pairs of elongated tail feathers that were possibly used to attract mates. The feathered dinosaur does not seem to have flight feathers on its limbs. *Epidexipterix* is closely related to oviraptorosaurs and is likely 176 to 146 million years old, making it older than *Archaeopteryx*, at 155 to 150 million years, most commonly thought to be the earliest ancestor of birds.

See: *Early dinosaur's feathers were for show, not flight*, **http://www.cbc.ca/technology/story/2008/10/22/feather-dinosaur.html**

ScienceDaily (online) November 14, 2008

Marine microorganisms found in amber

CHARENTE, France—Unicellular algae (mostly diatoms) as well as radiolaria, a foraminifer, and spiny skeletons of sponges and of an echinoderm, have been spotted in amber collected in Charente, France. The few pieces of amber found to contain the unexpected marine microorganisms date from the mid-Cretaceous (100 to 98 millions years ago); researchers from the Geosciences Rennes Laboratory and their colleagues published their surprising find in the November 11, 2008 issue of *PNAS*.

See: *Marine plankton found in amber*, **http://www.sciencedaily.com/releases/2008/11/081112161206.htm**

More Fossils in the News!

Check the internet for these stories:

Earliest animal footprints ever found show animals walking 30 million years earlier than previously thought, **http://www.sciencedaily.com/releases/2008/10/081005121337.htm**

Extinct sabertooth cats were social, found strength in numbers, study shows, **http://www.sciencedaily.com/releases/2008/10/081031102304.htm**

"Walking fish" gives evolutionary insights, **http://www.theglobeandmail.com/servlet/story/RTGAM.20081016.wfishwalk1016/BNStory/Science/home**

"Living fossil" tree contains genetic imprints of rain forests under climate change, **http://www.sciencedaily.com/releases/2008/10/081030192853.htm**

Significant fossil discovery in Utah shows land plants of 200 million years ago, **http://www.sciencedaily.com/releases/2008/10/081029115137.htm**

Giant prehistoric "kangaroos" killed off by humans, **http://news.nationalgeographic.com/news/2008/08/080813-tasmania-beasts.html**

Team finds Earth's "oldest rocks", **http://news.bbc.co.uk/2/hi/science/nature/7636708.stm** ❑

Microfossil Sorting Project

Winter 2009

By Mona Marsovsky

Search for fossils this winter! In the warmth of Mount Royal College, you can aid in the research of **Dr. Donald Brinkman** and Dr. Jim Gardner of the Royal Tyrrell Museum of Palaeontology (RTMP) by using the microscopes provided by Mount Royal College to sort through matrix samples and pick out the fossils. The fossils will then be taken to the RTMP for further study.

Our 2009 microfossil sorting sessions are scheduled for the following **Saturday** afternoons:

January 10, 2009
January 24, 2009
February 7, 2009
February 21, 2009
March 7, 2009

Come for as many sessions as you like. All sessions will take place in room B213 at Mount Royal College starting at 1:00 P.M. and lasting 2 or 3 hours (depending on interest). If you register in advance with me (**Mona Marsovsky: phone (403) 547-0182**, **monahome@telus.net**), I will be able to notify you in case we have to cancel the session unexpectedly. Please bring tweezers and/or a fine-tipped artist's paint brush to manipulate the tiny fossils. A pen is also handy to label your finds. ❑

2009 Field Trips

By Wayne Braunberger

The field trip program for 2009 is currently being developed. Trips and dates are tentative at this time so if anyone has suggestions for a trip please let me know. Further updates will be posted on the website and published in the March and June issues of the *Bulletin*.

Field Trip 2009–1

June 13–14 or June 27–28. Badlands: This trip into the Alberta badlands will concentrate on vertebrate palaeontology and sedimentary geology. Possible areas are along the Red Deer River (Drumheller area) or southeast Alberta (Onefour or South Saskatchewan River).

Field Trip 2009–2

July 18–19. Destination to be announced. At this time a location has not been confirmed for the July trip. With travel becoming increasingly expensive I would like to visit a locality (or localities) nearby. This may possibly be a one day trip.

Field Trip 2009-3

August 15–16. Flathead Valley ("The Sequel"), Southeast British Columbia. Last year's trip to the area proved to be very interesting. There are numerous locations to explore, but the main focus will be on the Kishenehn Formation. By holding the trip in August it is anticipated that water levels in the creeks will be lower, allowing easier access to the sites. ❑

Upcoming Events

Frenchman Formation Terrestrial Ecosystems Conference

May 17-20, 2009, *T. rex* Discovery Centre, Eastend, Saskatchewan. Deadline for abstracts and early registration ($100–$150) is March 1. Field trip is $40 extra. Registration is limited to 100 participants. For more information, see **http://dinocountry.com/**

Eighth British Columbia Paleontological Alliance Symposium

May 16–18, 2009 (note date conflict with Frenchman Symposium) at UBC campus in Vancouver. Theme is "Fossil mammals of the Pacific Northwest." For more information see **www.bcfossils.ca/news2009.html** ❑

Paleo 2009

APS Thirteenth Annual Symposium
Saturday and Sunday, March 14 & 15, 2009

The Symposium

Paleo 2009 is a two day event with lectures, posters and showcase displays on Saturday, March 14 and workshops on Sunday, March 15. Saturday programs are free and open to the general public. We will encourage families to bring fossils to our identification booth on Saturday. For kids, we have videos and an activity table. No registration is required to attend Saturday activities. Sunday workshop participants will be required to register and pay a moderate fee for workshop manuals. The main events will be centred in the lower level hall at Mount Royal College. Lectures will be held in the Jenkins Theatre.

Call for posters and abstracts

The Alberta Palaeontological Society (APS) invites you to present a poster at Paleo 2009. This symposium will have presentations from a mix of avocational and professional palaeontologists from all over western Canada. We are interested in posters or displays associated with palaeontology. Specific invitations have been sent to staff and students of universities, natural history clubs, the Geological Survey of Canada, museums and members of the petroleum industry and the artists' community. The aim is to showcase palaeontology to the general public and foster closer relations between the APS and the above groups. The event is free to all participants. There is no fee to submit a poster and abstract.

Instructions for posters and displays

A table and stand with a 4x8-foot poster board will be supplied to each presenter. Each presenter should bring stick pins or tape for attaching posters, but we will try to have some on hand for those who forget. Those with special requirements such as electricity to operate a display or a larger display area should identify these requirements upon submission of a request for space. Presenters are requested to provide an abstract as per instructions below. We request that poster presenters be set up by 9:00 A.M. Saturday, March 14. During the day a poster session period will be specified; please be available at least during this time for discussion about your exhibit. The deadline for submission of requests for poster space is February 1, 2009.

Paleo 2009 abstracts volume

As in past years an attractive symposium abstracts volume will be published. It will be sold at a price to cover publication costs. We request that speakers and poster presenters submit abstracts for the publication to the editor (see below). Abstracts may be any length (one page being standard; less than a full page is OK). Requests for longer abstracts will be accepted. Abstract contributors are encouraged to include photos and/or diagrams, but it should be noted that the abstracts volume will be printed in black and white. Documents will not be edited for content but may be reformatted to fit into the volume. Snail mail address (and email address if you wish) of the author should be included. Deadline for submission of abstracts is February 15, 2009. Specific instructions and examples can be downloaded from our website, **www.albertapaleo.org** or by contacting the Editor.

Workshops

Two workshops are offered in 2009. Both will be held at Mount Royal College, Room B108.

Sunday, March 15, 2009, 9:00 A.M. to 12:00 P.M. Cost: $15.00 per person. Topic: *Comparative osteology of the fossil marine taxa of southern Manitoba* presented by **Joseph Hatcher**, Canadian Fossil Discovery Centre, Morden, Manitoba. This workshop will provide a hands-on approach to understanding the functional osteology of the various marine vertebrates that once swam in the Western Interior Seaway that covered southern Manitoba during the Late Cretaceous (Campanian). Participants will enjoy examining fossil specimens from Manitoba using a variety of techniques from hand-held analysis to digital microscopy. Comparative vertebrate models will be used to simulate body design and movement as we re-create the marine paleoecology of southern Manitoba 80 million years ago.

Sunday, March 15, 2009, 1:00 P.M. to 4:00 P.M. Cost is $15.00 per person. Topic: *Classification and identification of bryozoa*, presented by **Wayne Haglund**, Mount Royal College.

To register for workshops, contact Mona Marsovsky at (403) 547-0182 or email **monahome@telus.net**. Registration deadline is February 28, 2009. Cheques should be made payable to Alberta Palaeontological Society. Payment may be handed to Mona or mailed to the Society's mailing address at P.O. Box 35111 Sarcee Postal Outlet, Calgary, AB T3E 7C7.

Contact Information

Paleo 2009 committee chairperson: Vaclav Marsovsky (403) 547-0182, **vaclav@telusplanet.net**
Posters & displays: Wayne Braunberger (403) 278-5154, **events@albertapaleo.org**
Lecture program/general information: Philip Benham (403) 691-3343, **programs@albertapaleo.org**
Abstract submissions: Howard Allen (403) 862-3330, **editor@albertapaleo.org**
Visit the APS website for confirmation of lecture and workshop times and speakers: **www.albertapaleo.org**

Helpful Hints for Poster Presenters

Definition

A poster is a visual medium to express results of one's research work on a topic they have chosen to study or to provide an overview of a researched topic.

Who should do a poster?

Anyone who has an interest in sharing the work that they have done and who likes feedback from the audience (symposium attendees) on their work 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?

Oral or written presentations are mechanisms to convey past and recent developments in a field of study that is of interest to the investigator. An effective written presentation is a poster presentation.

What is a poster?

A poster 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 figures relevant to your work. It follows the same pattern as any scientific article that appears in a journal.

A typical 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 other in the presenter's 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 his 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 welcome (they will be converted to black-and-white).

Good luck, and have fun!

Alberta Palæontological Society

Paleo 2009

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

Mount Royal College, 4825 Mount Royal Gate SW, Calgary, Alberta

Lectures and poster displays—Saturday, March 14, 2009, 9:00 AM to 5:00 PM
Workshops—Sunday, March 15, 2009, 9:00 AM to 4:00 PM

Saturday events are free to the public
Sunday workshops require registration and a minor fee

Saturday, March 14 speaker schedule

All talks to be held in jenkins Theatre, lower level of Mount Royal College

9:00 AM *Introduction.* **APS President Dan Quinsey**

9:15 AM *The first occurrence of the Baptornithidae in the Pierre Shale Formation (Pembina Member) of Manitoba.* **Kelichi Aotsuka, Canadian Fossil Discovery Centre, Morden**

9:45 AM *Studying latitudinal variation in the response of ungulates to late Miocene climate change.* **Danielle Fraser, University of Calgary**

10:15 AM Coffee Break.

10:30 AM (*Title and speaker to be announced. See APS website for updates.)*

11:00 AM *The use of helicopters in palaeontological field work in Alberta, Canada.* **Darren Tanke, Royal Tyrrell Museum of Palaeontology, Drumheller**

11:30 AM *Pleistocene walrus predation: trace fossil evidence in Willapa Bay, Washington.* **Murray Gingras, University of Alberta**

12:00 PM Lunch Break and Poster Displays.

2:00 PM *The impact of the "Frogamander" on ideas of modern amphibian evolution.* **Jason Anderson, University of Calgary**

2:45 PM *The non-marine fish of the Late Cretaceous and early Paleocene of western North America: evidence from microvertebrate sites.* **Don Brinkman, Royal Tyrrell Museum**

3:30 PM Coffee Break.

3:45 PM **Keynote talk—***Palaeotaxa of the Pierre Shale Formation, southern Manitoba.* **Joseph Hatcher, Canadian Fossil Discovery Centre, Morden**

For more info, see Page 20 ☛