Alberta Palæontological Society Bulletin

VOLUME 20 • NUMBER 4 www.albertapaleo.org DECEMBER 2005

ALBERTA PALÆONTOLOGICAL SOCIETY

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 Richard Road SW, Calgary, Alberta.

Friday, December 9, 2005—Cory Gross, Alberta Palaeontological Society.
The Grandfather of the Buffalo: Fossils in the Culture and Beliefs of the Nitsitapii. Xmas social to follow.

Friday, January 20, 2006—Dr. Christopher J. Collom, University of Calgary:
Stratigraphy and palaeoenvironments of the Middle Cambrian Chancellor Group (e.g. Burgess Shale) and adjacent platform carbonates, Canadian Rockies of Alberta and British Columbia.

Friday, February 17, 2006—Philip Benham, Shell Canada Limited:
Lost World: The past, present and future of biodiversity in Madagascar

ON THE COVER: *Wanneria dunnae*, Lower Cambrian, Eager Formation, Fort Steele, British Columbia. Enlarged 1.9x, actual width of cephalon 79 mm. Collected on the APS October 2005 field trip (see photo, Page 2). The specimen has been added to the APS collection. Photo by Howard Allen.

Happy Holidays to all our Members and Friends

By Dan Quinsey, President

On behalf of the Board of Directors, I would like to wish everyone a safe and Merry Christmas and a Happy New Year.

Our Christmas Social will be Friday, December 7, 2005 and we will be doing something very different for a change. Aside from the fantastic presentation lined up and the usual Christmas feast, we will be having our Silent Table Auction and a Swap Meet. Members are encouraged to bring along palaeontological related items for trade such as books, toys, videos, crafts, field trip gear, minerals, or whatever you have around the house that you think your fellow members may be interested in.

After the presentation, everyone will be encouraged to mingle and trade in your previously loved treasures for new previously loved treasures. As always, we ask our members to use discretion when bringing actual fossils by respecting provincial laws regarding the sale and trade of Alberta's fossils.

For those who will be coming to their first Christmas Social, please participate with the rest of us by bringing along finger food (not hot items) for everyone to share. If you have any questions, please contact Dan Quinsey at (403) 247-3022.

Bylaws and Family Memberships

As many of you know, we adopted a new set of bylaws in May and they are now in effect. One of the changes worth mentioning here is how we will be reporting membership numbers in regards to Family Memberships.

In the past, we reported the number of memberships (Single, Family, Institution, and Award) rather then the number of voting members in our records. We will be changing the way we report APS Membership numbers by giving you a count of the number of voting members and non-voting members.

As well, we will be enhancing our database of members in order to focus in on our youth sector.

To do this, we need your help. Please indicate in your family membership renewals how many adults over the age of 18 and dependants under the age of 18 are in your family. We also need to know the names of these members.

If you have already renewed and would like to update your information, please contact **Howard Allen** using the information on Page 1 of this issue.

Donations and Gifts to the Society

On behalf of the Society, I would like to thank all those who have generously given to our Society over the past year.

APS members and non-members give to the Society in many ways. There are physical donations such as CRLC fossils for the giveaway box, silent table auction items, APS collection items, and inventory items such as display cases, microscopes, and first aid kits. Others donate valuable time and resources.

Many of these donations are made all the time and it is difficult to recognize each and every instance. The APS would like every contributor to know that we are sincerely appreciative of your contributions. We do try to highlight very significant donations through recognition at our meetings and in the *Bulletin* and I am sure we may have missed a few of these in the past. For this, I apologize.

If you do make a contribution to the Society and want to be recognized, please indicate your wish to the Board and we will make sure it happens in a timely manner. ❑

Trilobite hunters at Fort Steele, October 2005. The specimen on this issue's cover was found on the slab of shale in foreground. Left to right: Bill McPheeters, Wayne Braunberger, Geoff Barrett, Dan Quinsey. Photo by Keith Mychaluk.

Upcoming Talks

Friday, January 20, 2006, 7:30-9:00 P.M.
Mount Royal College, Room B108

Stratigraphy and palaeoenvironments of the Middle Cambrian Chancellor Group (e.g. Burgess Shale) and adjacent platform carbonates, Canadian Rockies of Alberta and British Columbia

Speaker: **Dr. Christopher J. Collom, University of Calgary**

About half a billion years before Charles Walcott discovered the invertebrate fossils of the Burgess Shale, the sediments hosting these most remarkable organisms were being deposited along the sharply-defined western margin of the palaeocontinent Laurentia. Cambrian in age, these rocks accumulated during a time when no life existed on dry land, and Earth's relatively shallow continental shelves were largely devoid of marine animals. In isolated and ephemeral "oases" on the sea floor, though, early life thrived.

In the case of British Columbia, these rare fossil occurrences are nearly always associated with >100 m high submarine escarpments that defined the Laurentian margin. Why? Recent research by the author and colleagues have revealed that the traditional reconstructions of the environments in which the myriads of bizarre metazoans lived are in need of revision.

New data indicate that the base of the Cathedral Escarpment and younger Eldon Escarpment (both Middle Cambrian) were in fact oxygenated to a greater degree than previously assumed. The unique preservation of soft-bodied metazoa and soft tissues of a bewildering array of arthropods appears to be linked to a narrow, discontinuous strip along the foot of these towering escarpments.

There are abundant lithological and mineralogical clues associated with the Burgess Shale that lead to the inescapable conclusion that hydrothermal processes were at work during the lifetimes of the acclaimed fossils of this formation. We propose that localized seeps at the intersection of the Cathedral and Eldon escarpments and the sea floor were surface expression(s) of deep faults that served as conduits for the ascent of mineral-rich fluids (or brines). These seeps served as the fuel for intensive growth of bacterial colonies, which in turn supported a complex and diverse food web including chemosymbiotic and "normal" marine organisms—including filter-feeders, grazers (herbivores) and predators.

This presentation will address the palaeoenvironmental setting in which this early drama in life's long history unfolded.

Biography

Christopher received his Ph.D. in geology, sedimentology, and high-resolution sequence stratigraphy from the University of Calgary in 2001. He has lived in Calgary since 1993, having moved from his

Fossil Ridge and Mt. Stephen, Yoho National Park, British Columbia, from Mt. Wapta. Photo by C.J. Collom

home state of Colorado—where he served as invertebrate palaeontologist for the state government. He is a dual Canadian-American citizen, but calls the Rocky Mountains (wherever they occur) his true home.

Friday, February 17, 2006, 7:30-9:00 p.m.
Mount Royal College, Room B108

Lost World: The past, present and future of biodiversity in Madagascar.

Speaker: **Philip Benham, Shell Canada Limited.** Co-author: **Dr. Jonah Ratsimbazafy, Durrell Wildlife Conservation Trust.**

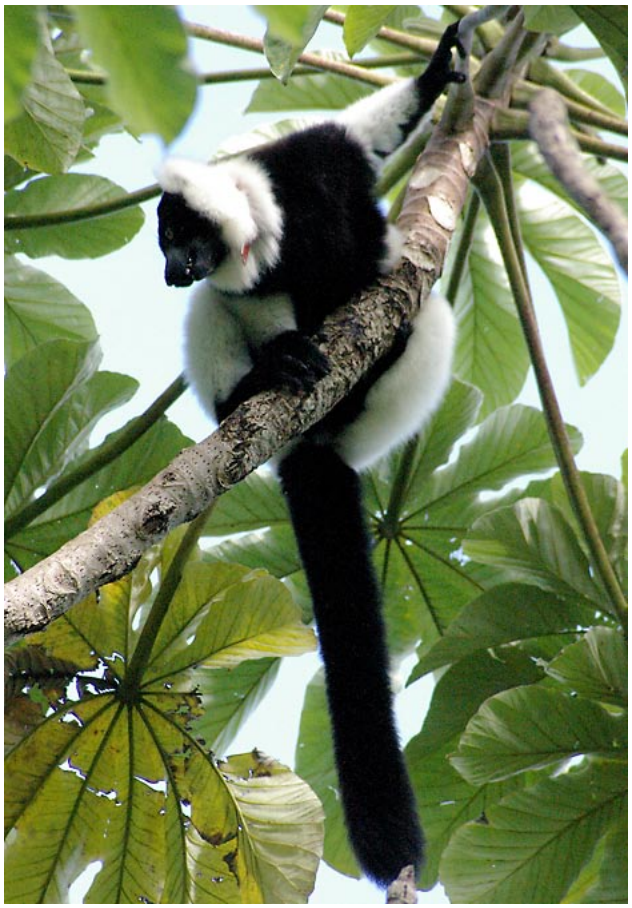
Madagascar is essentially a "Lost World" where evolution has proceeded, largely in isolation, for about 135 million years. The 300 km wide Mozambique Channel separating the country from continental Africa provides a fairly effective barrier to colonization. As a result, Madagascar has one the highest rates of endemism of any region in the world. About 90% of Madagascar's plants and over 95% of its many bizarre mammals, reptiles and amphibians are unique to the island.

Due to the vagaries of fossil preservation and historical documentation much of the ancient and more recent past is lost to us. Much of the Tertiary rock record is absent, thus information on a critical period in the development of the country's mammalian fauna is missing. Little work has been done to understand the intriguing geological history of Madagascar but it is geology that is the tie to Madagascar's heritage.

One source of Alfred Wegener's theories of plate tectonics was the restricted distribution of fossils of primitive seed plant *Glossoptera* in landmasses (including Madagascar) that could be reassembled in what would be called Gondwanaland. Later Malagasy continental connections with Pangaea and a last separation with India perhaps 80 Ma ago complicate the picture and even now Madagascar retains strong floral and faunal ties with India. These connections can be unraveled by examining the fossil record (ancestral lemurs and the lineage of giant birds known as ratites), the modern distributions of plants and animals (such as freshwater crayfish, earthworms and leeches) and genetics.

While Madagascar's relative isolation bears a strong overprint of its earlier tectonic configurations, the formidable stretch of water in the Mozambique Channel did not completely prevent occasional colonization. For example the molecular clock, defined by changes in DNA extracted from subfossil and fifty species of extant lemurs points to a single colonization event by this primate in the early Tertiary (approximately 60 Ma ago). Similar origins are postulated for rodents, spiny tenrecs, plated lizards and the more recent carnivores (including the mongoose, cat-like fossa and the fox-like Malagasy civet) which arrived perhaps 20–30 Ma ago. On the other hand the chameleon, of which over fifty species thrive on the island, seems to demonstrate multiple oceanic dispersals from Madagascar to various destinations bordering the Indian Ocean. Presumably its slow metabolism allowed it to survive ocean crossings. While the oldest chameleon fossils date to Miocene (18 Ma ago) in Kenya, the genetic evidence points to a Malagasy source.

Avenue du Baobabs north of Morondava, Madagascar. This stand of *Adansonia grandidieri* is a popular tourist destination. 7 of 8 species of baobab are endemic to Madagascar, suggesting it may have originated there. Photo by Philip Benham.



Black and white ruffed lemur (*Varecia variegata variegata)* perching in a *Cecropia* tree in Manombo Special Reserve, southern Madagascar. *Cecropia* (known locally as Tana Tana) is an aggressive invader from South America that curiously provides significant food to the lemur. Photo by Philip Benham.

Madagascar, in perhaps the 3rd Century BC, was one of the last colonized major landmasses (only Hawaii and New Zealand were colonized later). As a result Madagascar provides a good laboratory for observing the impact of man on surrounding wildlife. The results are sobering. Since the island's colonization, the *Aepyornis* (one of the largest birds ever to have lived), seventeen species of giant lemurs, three species of pygmy hippopotami, giant tortoises and many other fauna went extinct by about 400 AD. Growth of the human population has led to conversion of 90% of the original forest to farmland through a slash and burn process known locally as *tavy*. Much of this farmland is lost to erosion as the soils of Madagascar bleed red into the ocean. Today the pressures are greater than ever on the remaining natural areas. Even reserves and parks are not immune to local populations hunting, gathering plants for food, weaving materials, firewood and construction. Solutions not as simple as banning and enforcing the protection of the reserve areas. Most people on this tenth-poorest nation in the world live at a bare subsistence level, seasonally starve and may have minimal access to alternate fuels with which to cook their food.

The authors' talk will outline the current situation at Manombo Special Reserve where a small parcel of forested land supports a population of black and white ruffed lemurs (*Varecia variegata variegata*). Periodically, local villagers have required the resources the forest offers. In the past the lemurs and other mammals were hunted. Earthwatch expeditions, led by the second author, have provided an opportunity for the local community to see the value that the international community places on their particular reserve but more importantly a form of employment where subsistence was the only previous option. Further activities by other charitable organizations will lead to construction of a new school, medical and dental assistance, more productive farming practices and opportunities to produce crafts to be sold in local markets or further afield. Manombo is Madagascar in microcosm. The unique ecosystem cannot be protected without also doing something to help local communities and, more importantly, providing them the means to help themselves without destroying their natural heritage. While prospects for Madagascar's flora and fauna are challenging, Manombo and several other small communities around the country demonstrate there is still hope.

In 2003, new President Marc Ravalomanana announced his intention to triple the protected areas of Madagascar. Additional announced global financial support in the form of a $50 million trust fund will go a long way in a country where the average daily wage is one dollar.

Biography

Philip Benham is an exploration geologist for Shell Canada Limited's Newfoundland Offshore Team. The inspiration for this talk is an Earthwatch Expedition to Madagascar funded by Shell to allow their employees to be more aware of issues pertaining to biodiversity and sustainable development.

Co-author Dr. Jonah Ratsimbazafy is Scientific Coordinator for the Durrell Wildlife Conservation Trust. His first love is palaeontology but he now focuses on the more urgent task of protecting natural regions within his Malagasy homeland and providing means for local communities to help themselves without negatively impacting the remaining islands of diversity. ❑

Books Donated by Bert Van Helden and Jan Ford

By Mona Marsovsky, APS Librarian

APS members **Bert Van Helden** and **Jan Ford** donated books from their collections to the APS library on October 1, 2005. They also donated several items for the silent auction. The membership would like to thank Bert and Jan for their generous donation of the following books:

Vertebrates

Hagood, Allen. 1976. Dinosaur: The story behind the scenery, 3rd Printing. KC Publications, Las Vegas.

Anonymous. 1962. Reptiles of Saskatchewan's ancient seas. Saskatchewan Museum of Natural History, Popular Series No. 1., Saskatchewan Dept. of Natural Resources.

Moy-Thomas, J.A. 1939. Palaeozoic Fishes. Methuen's Monographs of Biological Subjects, Methuen & Co. Ltd., Great Britain.

Invertebrates

British Museum (Natural History). 1964. British Mesozoic Fossils, 2nd edition.

Woods, Henry. 1963. Invertebrate Palaeontology, 8th edition. Cambridge University Press.

Plants

Andrews, Henry N. Jr. 1961. Studies in paleobotany, 3rd printing. John Wiley & Sons, Inc., New York.

Erdtman, G. 1969. Handbook of palynology: Morphology, taxonomy, ecology, an introduction to the Study of pollen grains and spores. Hafner Publishing, New York.

Erdtman, G. 1965. Pollen and spore morphology/plant taxonomy: Gymnospermae, Bryophyta. Almqvist & Wiksells.

Bignot, Gerard. 1985. Elements of micropalaeontology: Microfossils—their geological and palaeobiological applications. Graham & Trotman, London.

Geology

McCorquodale, B.A. 1963. Concretions and some other sedimentary structures. Saskatchewan Museum of Natural History, Popular Series No. 3. Saskatchewan Department of Natural Resources. ❑

2006 Microfossil Sorting Project to Begin in January

By Mona Marsovsky

Itching to find fossils in midwinter? Search for fossils in the soil samples gathered by **Dr. Donald Brinkman** of the Royal Tyrrell Museum of Palaeontology (RTMP). Use a microscope provided by Mount Royal College (thank you **John Cox**!) to sift through the samples and find gar scales, fish teeth, dinosaur teeth and other vertebrate fossils. Don Brinkman will then take all of the fossils to the RTMP where he will study the fossil types and their abundance in his continuing ecological research on the Late Cretaceous.

Ron Fortier and other APS members sort through fossils at the 2005 version of the microfossil sorting project. Photo by Dan Quinsey.

Upcoming microfossil sorting sessions are scheduled for Saturday January 14, 2006, January 21, 2006 and January 28, 2006. You are welcome to come for one, two, or all three sessions. All sessions will take place from 1:00 P.M. to 3:00 P.M. in room B213 at Mount Royal College. Please register at least a week in advance with **Mona Marsovsky** (403-547-0182, **vaclav@telusplanet.net**) so that we can notify you if we have to cancel the session unexpectedly. Please bring a pen to label your samples and tweezers and/or a fine paint brush to manipulate the tiny fossils. ❑

SVP 2005 Meeting in Mesa, Arizona

By Mona Marsovsky

SVP tour group assembled before exploring Trash Canyon near El Golfo, Mexico (Irvingtonian, Pleistocene). Photo by Vaclav Marsovsky.

Members of the Society of Vertebrate Paleontology (SVP) enjoyed warm weather in Mesa, Arizona, October 19–22, 2005 for their annual meeting. A total of 1053 attendees made this conference the second highest in attendance ever. The program committee reviewed over 600 abstracts. 232 posters were split into two one-day sessions. Over 290 short (15 minute) talks in three separate streams—dinosaur, mammal and lower vertebrate—were presented over the four-day conference. The silent and live auction netted $17,300 to be used to support student travel. The annual awards banquet recognized individual accomplishment, including Calgary's Brian Cooley for his life-sized sculpture of an *Alamosaurus* family.

Six different two- to three-day field trips were offered to participants:

1. Geology and Palaeontology of Triassic Formations of the Colorado Plateau.
2. Zuni Basin Palaeontological Project (cancelled due to lack of participation).
3. Late Cretaceous Macrovertebrate Palaeontology and Stratigraphy of the Kaiparowits Plateau, Grand Staircase-Escalante National Monument, Utah.
4. Pliocene Vertebrate Faunas from Southeastern Arizona and Southwestern New Mexico.
5. Early Pleistocene Irvingtonian Vertebrate Fauna of El Golfo, Sonora, Mexico.
6. Yepómera Hemphillian and Blancan, Chihuahua, Mexico.

As part of the field trip "Geology and Palaeontology of the Triassic Formations of the Colorado Plateau," Vaclav and I, with APS member **Donald Henderson** and twenty-five other participants, toured historic Triassic localities near Meteor Crater (Winslow, Arizona) and in the Petrified Forest National Park. The five field trip leaders described recent finds in the area which have negated some long-standing assumptions on dinosaur lineage. The comprehensive field trip description and fauna and flora documentation was emailed in advance, which helped participants learn the background information necessary to more thoroughly enjoy the trip.

We joined APS member **Les Adler** and twenty-five

Phytosaur teeth, Upper Triassic Chinle Formation, Arizona. Photo by Vaclav Marsovsky.

other participants from five countries on the field trip to explore the Early Pleistocene Irvingtonian vertebrate fauna of El Golfo. After an orientation session in Yuma hosted by the three field trip leaders from the Arizona Western College, we explored the badlands of the Colorado River delta. On the second day, we got extensive practice at extracting our vans from the soft sand. These delays meant that we did not have time to go back to explore "Trash Canyon," but instead we prospected another unexplored canyon. Tour group participants found gomphothere, beaver and camel fossils, which were collected by the field trip leaders for their research.

SVP Field Trip to Yepómera, Chihuahua State, Mexico

By Les Adler

Professor Everett Lindsay of the University of Arizona at Tucson arranged to pick me up at the Phoenix airport to join six other SVP members on a field trip to Goméz Farías in northern Chihuahua State, Mexico, about 720 km. SE of Phoenix.

Heading south, we lunched at Tombstone, Arizona, close to the famous O.K. Corral. Then we passed through Bisbee, site of one of the world's largest copper mines. The United States-Mexico border crossing took two hours due to confusion with vehicle permits. I was provided with a no-cost, one week visa on producing my driver's license and passport. Trucks were backed up for 4–5 km., being checked for guns and drugs by the Mexican military. Driving was slowed by dramatic speed bumps in small towns and by a lack of signs where extensive road construction was under way.

On arriving in Mexico, the group met with Professor Castañeda of Juriquilla University, Querétaro State, who is the chief scientist dealing with Late Tertiary faunas of northern Mexico and who authorized our stay in the country. He was accompanied by his wife who is an experienced collector.

Each participant was provided with maps showing possible fossil locations and scientific papers describing many Mexican fossil sites and comprehensive descriptions of fossil mammals, particularly several types of fossil horses, with an emphasis on the teeth.

In order to update our maps, GPS readings were taken. At the starting point the readings indicated 29°05'54" N latitude and 107°51'06" W longitude. In order to reach fossil sites we attempted to travel by vehicle, but there were many obstructions—mostly barbed wire fences, difficult gates and rough roads. The party then went on foot to a number of diatomite outcrops, some of which were about fifteen feet thick. Water erosion has worn away the grass and soil so that some outcrops were visible in arroyos.

This day was hot with a blue sky and haze, and a light wind. We always carried bottles of fresh water. The fossils were scarce: I did not find any myself, but the leading palaeontologists found fossil horse teeth which were handed over to Dr. Castañeda for cataloguing and description.

An arroyo cut through Pliocene diatomite near Yepómera, Mexico. Photo by Les Adler.

Determining the ages of land sediments is quite different from dating marine deposits. Here magnetic reversals are used in conjunction with a different set of names. The fossils at Yepómera are Hemphillian and Blancan in age with a 4-million year spread, mostly in the Pliocene Epoch.

Our second night was spent at a hotel in Nuevo Casas Grandes with a special meal at a nearby restau-

rant. We returned via New Mexico on Highway 10 to avoid border problems encountered on the forward journey.

The trip leaders, Professor Lindsay, Dr. Lou Jacobs (known to **Sam Richter** of the APS, as he was in charge of a Texas Cretaceous sauropod dinosaur dig in which we participated several years ago) and Chris Shaw intend to return to Yepómera for a two week camp-out because of the promise provided by this field trip. ❑

APS 2006 Field Trips

By Wayne Braunberger

Planning is well underway for next year's trips. A wide variety of trips is offered so there should be something for everyone. For more information please contact **Wayne Braunberger** at **(403) 278-5154** or by email at **events@albertapaleo.org**. Look for the field trip registration form in the March *Bulletin* or on the APS website, **www.albertapaleo.org**. Information will also be available at the monthly meetings.

Please note that all fees are due at the time of registration. Non-members and unaccompanied minors will not be allowed to attend field trips. All participants will be required to read and sign a release form (waiver). Note that the registration deadlines have changed significantly from those in past years. This is to allow for more efficient planning of the trips and timely distribution of information.

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 2006-1
Saturday, June 3 thru Sunday, June 11, 2006
Hay River, NWT.

Field trip will begin on Monday, June 5 and end on Friday, June 9 with the weekends being travel days. At this time of year water levels are generally still low and the bugs are tolerable. Weather may be mixed so be prepared for all conditions. Hay River is approximately 1400 km from Calgary and requires 15–16 hours of driving time. The tentative itinerary will include four days of collecting at Devonian locations along the Hay River and Hay River Escarpment and one day at the Pine Point mine. Time will be available for sightseeing. Participants will be responsible for their own transportation, accommodation, and meals. The registration deadline will be May 1, 2006. This will allow for the organization of carpools and ensure that reasonable accommodation can be booked. Camping is not recommended.

• Trip 2006-2
Saturday, June 17 & Sunday, June 18, 2006
Tolman Bridge, Alberta

Tolman Bridge was the site of the first field trip held by the APS. Sites to be visited are along the Red Deer River between Tolman Bridge and Dry Island Park. To commemorate the 20th anniversary of Society field trips a barbecue is planned for the Saturday night. Camping is available at Tolman Bridge. The registration deadline will be June 1, 2006.

• Trip 2006-3
Saturday, July 15 & Sunday, July 16, 2006
Manyberries Area, Alberta

With some minor changes (depending on site access) the trip that was cancelled last year will be held. The registration deadline will be June 30, 2006.

• Trip 2006-4
Saturday, Aug. 19 & Sunday, Aug. 20, 2006
Date is tentative, location to be announced.

At this time a site for the August trip has not been determined. I am anticipating a trip that would focus on plants. Potential locations in both Alberta and British Columbia are being considered; as such the date is tentative and may change depending on where the trip is held. Further information will be available in the March and June Bulletins and on the website.

• Trip 2006-5
Fall 2006: Tentative

A trip may be held in September or October; however, location and dates have yet to be determined. Further information will be available in the March and June Bulletins and on the website.

Those of you who attended trips this year will have noticed new waiver and medical forms. If you have suggestions for improvement please let me know. For the 2006 field trips I will be sending the waiver and medical forms to you along with the trip information, via email 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 as less time will be spent on paperwork prior to the trip. 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 is ultimately destroyed. ❑

Paleo Rangers Activities Planned for 2006

By Dan Quinsey

Ron Fortier and Dan Quinsey have been scouting out various sites for the Paleo Rangers field trip in 2006. We are also considering a workshop sometime in the spring for our youth. We will also have a special presentation for our existing and potential Paleo Rangers during our Symposium in March.

If you have any ideas or would like to see something special, please get in touch with either Ron or Dan using the contact information on Page 1. ❑

Fossils in the News

*The University of Calgary (*website), Sept 2, 2005

U of C grad becomes namesake of dinosaur-era water poppy

CARDSTON, Alberta—A new genus and species of fossil plant has been named for U of C alumnus Shayne Tolman, currently a school teacher in Cardston. *Cardstonia tolmani* is an extinct aquatic plant with oval, parallel-veined leaves. It was recovered from an Upper Cretaceous outcrop of the St. Mary River Formation, discovered near Cardston by Tolman in 1988. The plant was named and described by **Michael Riley** (an APS member) and Dr. Ruth Stockey, of the University of Alberta. If the name Shane Tolman rings a bell, he is also the discoverer of the now-famous "Wally's Beach" mammal tracksite at the St. Mary Reservoir, reported in the *Bulletin*, June 1999 and discussed in the APS Symposium abstracts volumes of 2000, 2001 and 2003.

For the full story (with pictures) see **www.ucalgary.ca/news/sept05/fossil.html**. An abstract of the paper describing *Cardstonia tolmanii* can be found at the University of Chicago Press website by googling *Cardstonia*.

NewScientist.com, October 17, 2005

Sea lilies caught creeping away from trouble.

GRAND BAHAMA—We're all familiar with the ubiquitous stemmed crinoids—those plant-like, sessile critters whose disaggregated remains fill our Palaeozoic limestones by the zillions. Well, it turns out that maybe they weren't so sessile after all.

Tomasz Baumiller of the University of Michigan and Charles Messing of Nova Southeastern University, Florida, were reviewing some archived video footage taken by a submersible in the Bahamas, when they spotted a crinoid, *Endoxocrinus parrae*, crawling across the sea floor on its arms, dragging its broken stem behind it. Apparently, at least some sea lilies are able to break off their stems—much like a lizard's tail—and escape predators, such as sea urchins.

See **www.newscientist.com/channel/life/dn8168** For a short movie of the creeping crinoid.

CNN.com, October 12, 2005

Deal protects ancient coral reef

MONTPELIER, Vermont—A well-preserved portion of a 450 million-year-old (Ordovician) reef has been purchased for an undisclosed price by two preservation groups in Vermont. The Chazy Reef, believed to be the world's oldest coral reef, had an original extent of some 1600 km. "You can see how it evolved from simple little mounds into what I call a 'reef city,'" Says Linda Fitch of the Isle La Motte Preservation Trust. The portion of the reef on Isle La Motte, at the north end of Lake Champlain, is to be preserved as a scenic area and fossil preserve, with a visitors' centre and interpretive trails on the drawing board.

MSNBC.com, November 10, 2005

Ancient "Godzilla"-like sea creature discovered

ARGENTINA—Remains of a bizarre, ferocious-looking marine crocodile have been unearthed by palaeontologists from the National University of La Plata. Zulma Gasparini and Luis Spalletti described the fossil in the Nov. 11 edition of *Science*.

The animal, about 4 metres in length, had short, powerful jaws with sharp, 10-cm. long, serrated teeth and swam with fins. It was found in 135 million-year-old (Early Cretaceous) rocks in Patagonia. It was very different from other species of contemporary crocodiles which mostly had long, thin jaws and teeth specialized for catching fish. It's believed that the "Godzilla" crocodile, named *Dakosaurus andiniensis*, would have hunted other marine reptiles.

Science, October 7, 2005

Bottom-feeding plesiosaurs

QUEENSLAND, Australia—Fossils of two long-necked (elasmosaurid) plesiosaurs recovered from Lower Cretaceous rocks may be changing ideas about how these types of plesiosaurs made a living. The conventional view is that the long, slender necks and sharp, cone-shaped teeth were adaptations for chasing and catching swimming organisms: fish and ammonites. However, the two specimens reported here include preserved gut contents containing a large proportion of benthic organisms: clams, snails and arthropods, as well as a few belemnites and rare fish scales, indicating that the reptiles were mostly dragging the sea bottom, rather than chasing more active prey. The guts of both specimens also contained a large number of gastroliths ("gizzard stones") which would have been useful in breaking up the hard shells of their molluscan prey.

The researchers suggest that plesiosaurs may have started as bottom-feeders early in their evolution, expanding their range of prey to ammonites and fish during the Late Cretaceous. They also point out that it isn't always safe to interpret feeding behaviour solely on the basis of body shape.

National Post, November 3, 2005

Exploding star wiped out mammoths

HUDSON BAY—Neo-catastrophists Richard Firestone, a nuclear chemist at the US government's Lawrence Berkeley National Lab and Arizona geologist Allen West are touting an extraterrestrial cause for ice-age mammal extinctions and the sudden disappearance of the Clovis culture some 13,000 years ago.

Firestone and West claim to have evidence that Earth was hit by a one-two punch delivered by an exploding star some 30,000 light-years away. According to the theory, a supernova sent an initial burst of gamma radiation and dust particles that arrived here 34,000 years ago. The researchers offer microscopic pitting on Siberian and Alaskan mammoth tusks as evidence. Although the northern megafaunas survived this event, Australian and Asian extinctions fit the timing, as does the first appearance of A and B blood types in humans—presumably gamma-ray induced mutations.

The second supposed blow came 21,000 years later in the form of a slower-moving mass of interstellar debris that pummelled the planet, with then-frozen Hudson Bay as "ground zero." Evidence of the second event, according to Firestone and West, appears in the form of magnetic particles and radioactive layers in several North American, Clovis-aged archaeological sites. In the Firestone-West scenario, the impact melted the Hudson Bay ice cap, precipitating a premature end to the ice age and wiping out ice-age mammals and Clovis people through a combination of the initial impact and consequent climate change.

Needless to say, skeptics abound: stay tuned.

Tumbler Ridge News (website) October 19, 2005

Rare cone fossils discovered

TUMBLER RIDGE, British Columbia—The ongoing exploration by amateur palaeontologists in this region has turned up yet another interesting discovery. Locals Kevin Sharman and the Walkley family discovered fossil cones at two localities in the Lower Cretaceous Boulder Creek Formation. Subsequent collecting produced 24 additional specimens along with cycad and other leaf fossils.

Tumbler Ridge Museum Foundation palaeontologist (and APS member) **Richard McCrea** was alerted and the specimens have been added to the museum's collection. Palaeobotanist Dr. Ruth Stockey of the University of Alberta is expected to study the fossils. [*From a photo, our own palaeobotanist* ***Georgia Hoffman*** *opines that the cones are likely those of a cycad or cycadeoid plant –ed.*].

For the full story and a photo, see **www.tumblerridgenews.com/story.php?id=190317**. ❑

[*Thanks to Phil Benham and Georgia Hoffman –ed.*]

APS PALEO RANGER

A Newsletter Just For Kids

Created by Ron Fortier — Alberta Palaeontological Society **Volume 2005-3**

What's New?

With all the snow and the cold wind, I guess that going out and looking for fossils will have to wait for next year. What to do until next spring? Why not prepare the fossils you found this past summer? The best way to find out how to clean and catalog your fossils would be to go to the A.P.S. website, **www.albertapaleo.org** and download the "**Member's Guide**". This has all the best hints and tips and even a sample specimen sheet so you can catalog your fossils.

If you have any questions you can get me at **rmfortier@shaw.ca** or call Ron at 403-285-8041 or even write to me, at 3823 49 Street NE, Calgary, AB T1Y 1Y5.

Word-Unscramble #1

Can you unscramble the following words
to answer the questions about Tyrannosaurus rex?

		ANSWER	
1.	**EEHTT**	_____	Tyrannosaurus rex had over 60 of these and they were sharp.
2.	**GESG**	_____	T. rex hatched from these.
3.	**TEAM**	_____	T. rex ate this.
4.	**SWAJ**	_____	These were huge on T. rex, over 1 metre long.
5.	**SMAR**	_____	These were tiny on T. rex.
6.	**GFISNER**	_____	T. rex had two of these on each arm.
7.	**LATI**	_____	T. rex used this for balance when running and turning.
8.	**GNIK**	_____	Rex means this.
9.	**SADIURNOS**	_____	T. rex was one of the largest meat-eating one of these.
10.	**ROTHEPOD**	_____	T. rex was this type of dinosaur; this group includes two-legged meat-eaters.

APS Tenth Annual Symposium

Saturday and Sunday, March 18 & 19, 2006

The Symposium

The symposium is a two day event with lectures, poster and showcase displays on Saturday, March 18 and workshops on Sunday March 19. Saturday programs are free and open to the general public. We plan to encourage families to bring fossils to our identification booth on the Saturday. For the kids, we have videos and an activity table. No registration is required to attend the Saturday activities. Due to limited space, Sunday workshop participants will be required to register and pay a moderate fee for workshop manuals. The main events will be centered in the upper level hall at Mount Royal College (accessible through the West Entrance).

Call for Posters and Abstracts

The Alberta Palaeontological Society (APS) would like to invite you to present a poster at our tenth annual symposium. This symposium will have presentations from a mix of avocational and professional palaeontologists from all over Western Canada. The theme this year is Alberta's Natural Heritage and we will also be focusing on celebrating the 20th anniversary of the APS. We are interested in posters or displays associated with palaeontology or other natural sciences. Specific invitations have been given to staff and students of western 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 although we will try and have some on hand for those who forget. Those who have 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 AM Saturday, March 18. 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, 2006.

Symposium Abstract Volume

As in past years an attractive symposium abstract 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 can be 1–4 pages in length (with 1 being standard; less than 1 full page is OK). Requests for longer abstracts will be accepted. Abstract contributors are encouraged to include photos and/or diagrams although it should be noted that the abstract 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 for insertion in the volume. Deadline for submission of abstracts for publication is February 1, 2006. Specific instructions and examples can be downloaded from our website, **www.albertapaleo.org** or by contacting the Editor.

Symposium Workshops

Please visit the APS website for latest updates on the workshops. Workshop abstracts will be posted as soon as they are available. All workshops will be at Mount Royal College; classroom location to be announced.

Tentative workshop topics

Workshop #1, special children's workshop, free admission, Saturday March 18, 2006, duration 45 minutes.
Topic : *She sells sea shells—a short biography of Mary Anning*. presented by Dan Quinsey, APS President.

Workshop #2, cost $15, Sunday March 19, 2006, duration 2–3 hrs.
Topic : *From sea urchins to dinosaurs: how skeletons work*, presented by Don Henderson, University of Calgary.

Workshop #3, cost $15, Sunday March 19, 2006, duration 2–3 hrs.
Topic : To be announced.

To sign up for workshops, contact Vaclav Marsovsky at (403) 547-0182 or email **vaclav@telusplanet.net**. Sign up deadline is March 7, 2006. Cheques should be made payable to Alberta Palaeontological Society. Payment may be handed to Vaclav or mailed to the Society's mailing address at : P.O. Box 35111 Sarcee Postal Outlet, Calgary, AB T3E 7C7.

Contact Information

Posters presentation/volunteering: Dan Quinsey (403) 247-3022, **president@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 meeting 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.

One 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 above 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

Tenth Annual Symposium

Presented in conjunction with the C.S.P.G. Palaeontological Division and Mount Royal College Earth Sciences Department

Lectures and Poster displays—Saturday, March 18, 2006, 9:30 AM to 4:00 PM
Workshops—Sunday, March 19, 2006, 9:00 AM to 4:00 PM

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

Mount Royal College, 4825 Richard Road SW, Calgary, Alberta

SATURDAY, MARCH 18 SPEAKER SCHEDULE
ALL TALKS TO BE HELD IN LEACOCK THEATRE, SECOND LEVEL OF MOUNT ROYAL COLLEGE

9:15 AM *Introduction*
APS President Dan Quinsey

9:30 AM *Taphonomic Observations on the Bonebed at Little Fish Lake, Alberta, Canada*
Patty Ralrick, University of Calgary

10:00 AM *Alberta's Duck-billed Dinosaurs*
David Evans, University of Toronto

10:30 AM Coffee Break

10:45 AM (Topic to be determined)
Dr. Eva Koppelhus, University of Alberta

11:15 AM *Deep Alberta*
John Acorn, Royal Tyrrell Museum of Palaeontology

12:15 PM Lunch Break and Poster Displays

2:00 PM *Sixty Years of Pachyrhinosaur Discoveries in North America*
Darren Tanke, Royal Tyrrell Museum of Palaeontology

2:30 PM *CSI: Dinosaur Provincial Park.*
Dr. David Eberth, Royal Tyrrell Museum of Palaeontology

3:00 PM (Keynote Speaker: Topic to be determined)
Dr. Philip Currie, University of Alberta

Please turn to Page 13 ☛