Palæontological
Alberta
Society
Bulletin

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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**

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UPCOMING APS MEETINGS

Meetings take place at 7:30 p.m., in Room **B108** (or **B101**, across the hall)
Mount Royal College: 4825 Richard Road SW, Calgary, Alberta

Friday, September 17, 2004—Alberta Palaeontological Society Open House and Fossil Clinic.
Friday, October 15, 2004—Emily Frampton, University of Calgary: ***"Geology, faunal composition and taphonomy of a Late Cretaceous shell bed in the Milk River valley, southern Alberta."*** (See page 6)
Friday, November 19, 2004—Erik Katvala, University of Calgary: ***"Why are the Canadian Rockies important for conodont work in the outboard terranes of western Canada?"*** (See page 7)
Friday, December 10, 2004 (Second Friday)—Christmas Social. Dan Quinsey, Alberta Palaeontological Society: ***"She sells sea shells: A short biography of Mary Anning."***

ON THE COVER: Belemnite "battlefield", Jurassic Fernie Formation, Limestone Mountain, Alberta, by Keith Mychaluk.

New Palaeo Society for the Peace Region

by Howard Allen

A new palaeontology society, the "Palaeontological Society of the Peace" (PSP) has been established in northern Alberta, headquartered at Grande Prairie Regional College. The Society's inaugural meeting was held May 19, 2004.

Grande Prairie Regional College geology professor **Desh Mittra** is the PSP's first President. Goals of the PSP include promoting the science of palaeontology in the Peace River region of northwestern Alberta and adjacent British Columbia. The new Society will assist in all aspects of fossil discovery, site preservation, collection, curation and display, and help to educate area residents in fossil identification and the importance of protecting the resource. They will also provide local "eyes and ears" for the Royal Tyrrell Museum, in that institution's ongoing investigations in the region [*see* Bulletin*, June 2004, p. 3*].

Executive members of the PSP have been in touch with the Board of the Alberta Palaeontological Society, regarding cooperation between our two groups. An informal meeting was held in Grande Prairie, in July, during the APS Tumbler Ridge field trip (see p. 4). Desh Mittra, **Katalin Ormay** and **Bert Hunt**, also an instructor at Grande Prairie Regional College, met with APS Board members **Mona and Vaclav Marsovsky** and other field trip participants.

The APS congratulates the members of the Palaeontological Society of the Peace, and hopes that our future communication and cooperation will prove fruitful and enjoyable to all. ❑

Volcanoes of the Deep Sea

A CSPG Special Event will be presented by National Geographic Photographer-in-Residence Emory Kristof. This event is $10 for adults and $6 for children. It occurs November 9th at the Centre Street Auditorium (3900, 2 Street, NE) in Calgary. Tickets can be purchased from Ticketmaster starting October 1. For more information visit **http://www.cspg.org/110_01.html** ❑

Gallagher Library Welcomes APS Members

by Howard Allen

Your membership director/editor met in late August with the University of Calgary's Faculty of Science Director of Development, **Ron Burke**, regarding the role of the University in the community. Our focus was on the Gallagher Library of Geology and Geophysics, and in particular, the library's current and future relationships with the public, U of C alumni (of which I am one) and the Alberta Palaeontological Society.

During my visit, I also met with Manager and Liaison Librarian **Claudette Cloutier**, who graciously toured me through some of the facilities that were new to me and answered questions about public access to the library's collections and services.

The Gallagher Library—named for the late geologist/oilman and library benefactor John P. ("Smilin' Jack") Gallagher—is located on the main floor of the University's Earth Sciences Building and has one of the largest collections of earth science literature in Canada. It is a fantastic resource, and Calgary area APS members are lucky to have such a gold-mine of information close at hand (and just a few blocks walk from the Geological Survey of Canada's library near the U of C campus).

Besides its huge collection of books, scientific journals, government publications (worldwide—not just Canadian), maps and graduate theses, the Gallagher Library also provides access to powerful electronic reference databases (*e.g.* GeoRef, The Zoological Record) and expert library staff to assist in finding obscure references at the Gallagher and other associated university and institutional libraries across Canada. Palaeontology references are a big part of the Gallagher's collection; I've been amazed at the literature I've found there, stretching well back into the nineteenth century—nearly to the dawn of scientific palaeontology itself.

All of these materials and services are available *for free* to the general public—including APS members—on an on-site basis. The public cannot borrow or remove material from the library, but this is not much of an issue in my opinion: tables and carrels

(private desks) are available throughout the library and you can spend all day there if you choose to. Summer is a great time to do research at the Gallagher, as most students are gone, and the library is often nearly empty.

Of course, this wealth of resources costs money (we all know how much books cost these days). Funding for the library comes from university and government grants and much-appreciated corporate donations (Calgary oil companies are also big users of the Gallagher Library).

And while access to the library is completely free for members of the public, we can also help the Gallagher to maintain its standing as a first-rate and user-friendly facility through private contributions that go to the purchase of books, journal subscriptions and similar resources. I'm proud to have been able to support the Gallagher over the years, as a university alumnus and private user, and I encourage others to do the same. Contact Ron Burke if you'd be interested in making a donation (and not just financial donations: where will your personal library go when you pass on?):

Ron Burke
Director of Development
Office of the Dean, Faculty of Science
The University of Calgary
2500 University Drive, NW
Calgary, AB T2N 1N4
Phone: (403) 210-5455
Email: **rburk@ucalgary.ca**

In the meantime, check out the Gallagher Library next time you need to identify some fossils or research a field trip locality. You can find more information about the Gallagher at the library's website: **www.ucalgary.ca/library/gallagher/**

The Gallagher website also links to the powerful online library catalogue—another excellent free research tool, that you can use from the comfort of your own home! ❑

Archaeological Society of Alberta, Calgary Centre

Fall/Winter talk schedule

All talks are held at 7:30 P.M. in the University of Calgary Earth Science Building, Room ES162.

Wednesday, October 20, 2004
Speaker: **John Robertson**
Bioarchaeological analysis of human skeletal populations from the 4th Cataract, Sudan.

Wednesday, November 10, 2004
Speaker: **Thomas Dowson**
Hunters, gatherers and shamans: Painting and pecking in north-central Namibia.

Wednesday, January 19, 2005
Speaker: **Marty Magne**
Early Period archaeology in Gwaii Haanas National Park Reserve and Haida Heritage Site.

Wednesday, Febrary 16, 2005
Speaker: **Darren Tanke**
Underwater archaeology and the* SS Mount Temple *Project.

Wednesday, March 16, 2005
Speaker: **Geoffrey McCafferty**
How about "In search of…the Nahua of Nicaragua"?

Wednesday, April 20, 2005
Speaker: **Lesley Nicholls**
Cruising the Aegean.

Library Notes

by Mona Marsovsky, APS Librarian

Short articles in the APS library

In addition to books, CDs, videos, journals, APS publications (Bulletins, workshop guides and field trip guides), the APS library also includes short articles on various palaeontological topics. The following lists in alphabetical order the subject categories available, each in a separate file.

Amber
Arthropoda
Birds
Brachiopoda
Burgess Shale
Cephalopoda Ammonoidea
Champsosaur
Coelenterates (Corals)

Dinosaur—General
Dinosaur Ornithischia
Dinosaur Saurichcia
Dinosaur Provincial Park,
Ediacaran
Fish
Foraminifera (Protozoa)
Formations and Systems
Fossil Illustrations
Fossil Preparation
General
Graptolites
Insects
Invertebrate Fossils—General
Lagerstatte
Mammalia
Miscellaneous
Microfossils
Mollusca
Paleo Art
Paleo Book Order Forms
Palaeoecology
Palaeopathology
Plants
Porifera (Sponges)
Regulations
Reptiles
Safety
Trace Fossils
Vertebrates—General

Maps

The following maps are available in the magazine holder labelled "Maps":

Geological Highway Map of Alberta, published by the Canadian Society of Petroleum Geologists. Both the original (1975) and second edition (1981) are available.

Structure, Isopach, and Facies Maps of Upper Cretaceous Marine Succession in West-Central Alberta and Adjacent British Columbia. Figures to accompany GSC Paper 62-31, by C.F. Burk. Jr. ❑

Welcome New Members!

- Lisa Buckley, Tumbler Ridge, BC
- Lisa Freeman, Calgary, AB
- Doug Shaw, Olds, AB
- Autumn Whiteway, Calgary, AB

APS T-Shirt Design Contest

The APS will be in the market to purchase new T-shirts in early 2005. We are looking for a new design that will focus in on the APS 20th Anniversary (1986–2006).

Deadline will be the 2004 November General Meeting. More information will follow.

Submissions can be hand drawn or electronically produced. Remember, although we have some fantastic artists in the Society, your submission should be one that is easily printable on a T-shirt. We encourage everyone to participate. A prize for the winning entry will be determined at a later date.

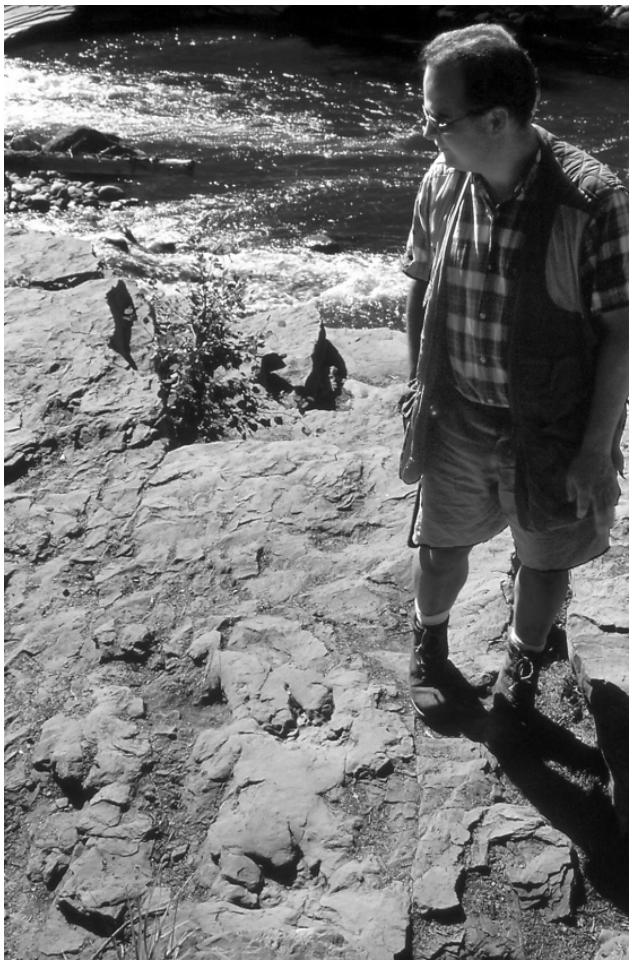
Submissions can be made to Dan Quinsey in person, electronically through the links in our website: **www.albertapaleo.org**, or by mail, using the APS address on Page 1 of the *Bulletin*. ❑

Tumbler Ridge Field Trip

by Mona Marsovsky

Six APS members explored a part of the northern dinosaur route July 24–26, 2004. On July 24, **Richard McCrea** led the group to see the ankylosaur trackway and the place where British Columbia's second dinosaur bone had been found beside Flatbed Creek near Tumbler Ridge, B.C.

Across the creek, a 60 m^2 sandstone block contained a multitude of dinosaur footprints from ankylosaurs, ornithopods and three sizes of theropods. Although the creek was fairly high after an unusually wet July, a couple of APS members managed to ford the creek with Richard McCrea to see where **Daniel Helm** and **Mark Turner** had found the first *in situ* tracksite in British Columbia. This ankylosaur trackway is in the Doe Creek Member of the Kaskapau Formation which is late Cenomanian (Cretaceous) in age. This formation is mostly marine, but has some terrestial interludes.



Richard McCrea with two theropod dinosaur footprints (foreground) at the Flatbed Creek site. At least six kinds of dinosaurs left their prints in this block. Photo by Vaclav Marsovsky.

Richard then led us to the Overhanging Rock Pool further upstream where oyster and clam shells illustrate the mainly marine nature of this formation.

After lunch, Richard gave us a behind-the-scenes tour of the Peace Region Palaeontology Centre in Tumbler Ridge. This centre is well equipped to do fossil preparation, with compressors, air filtration units, air scribes and casting equipment.

In preparation in the lab were several "firsts" for B.C.—the first tyrannosaur tooth, the first *Saurornitholestes* tooth and the first hadrosaur jaw fragment found in B.C. These all came from surface collecting in the Wapiti Formation (Campanian, Late Cretaceous).

A latex peel of the ornithopod trackway from Quality Creek obtained by **Lisa Buckley**, Rich McCrea, and his team of volunteers adorned one of the walls. The next day we would learn just how difficult this cast was to create, as it came from an overhang about four metres above Quality Creek.

The collections room was filled with fossils, including natural footprint casts, fossil bone and latex casts. Rich led the group to the Tumbler Ridge Community Centre where some fossils are on public view including Wapiti Lake fish fossils from the Triassic Sulphur Mountain Formation.

Unfortunately, the 10:00 P.M. Wolverine River Tracksite lantern tour was cancelled due to rain and lightning. A dinosaur skin impression at this site is particularly well suited to viewing by lantern light. However, four APS members did visit the site the next day on their own.

The next day, our group met at 9:00 A.M. to go to the Quality Creek Excavation, which is B.C.'s first dinosaur excavation. The trail to the excavation was steep (they don't call it the "Hill of Pain" for nothing) and included two sets of ladders to get down to the creek-level excavation.

Numerous dinosaur bones are trapped in a massive block of extremely hard sandstone that requires air scribes to remove the fossils. This block appears to have fallen from the cliff above the creek and is believed to be from the Kaskapau Formation, which is Turonian in age (mid Cretaceous). Due to the rarity of dinosaurs found in B.C. and in Turonian formations, every bone in this block is extremely important to science.

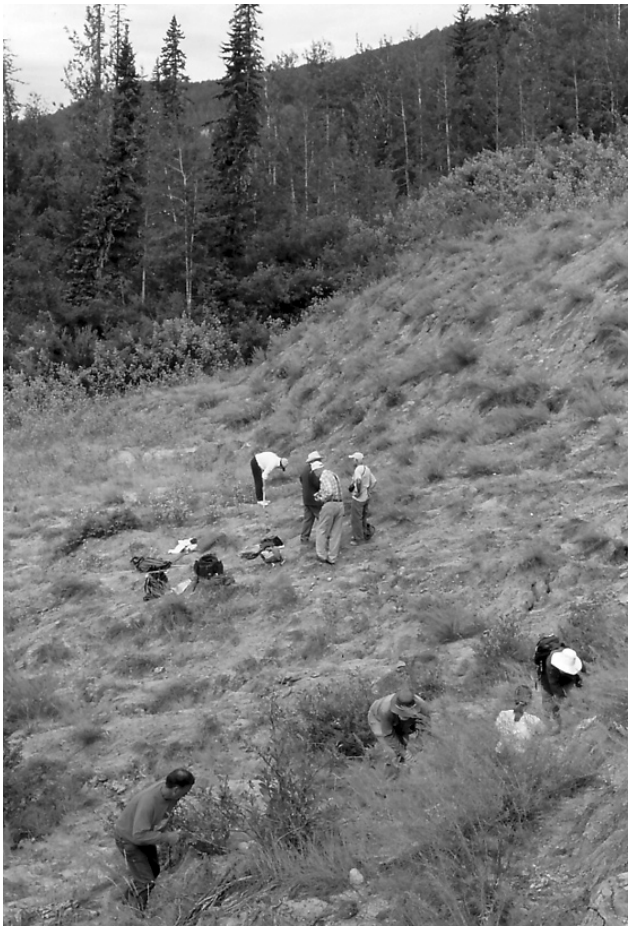
Lisa Buckley (right) shows APS members "Quality Block A" dinosaur bones at the Quality Creek excavation site. Photo by Vaclav Marsovsky.

Lisa Buckley then led the group up and down the creek to view numerous *in situ* and loose dinosaur footprints and trackways.

Richard McCrea presented us with an autographed copy of the book, *Daniel's Dinosaurs*, which describes the discovery of the first *in situ* tracksite in B.C., for the APS Library (see review elsewhere in this issue).

On Monday, July 26, all six APS members met **Bert Hunt**, **Desh Mittra** and **Katalin Ormay** at the Grande Prairie Regional College. Our hosts were executive members of the newly formed Palaeontological Society of the Peace (PSP). They generously provided a van for our morning tour.

First, we were taken to the Red Willow Campground to view the site where an articulated hadrosaur was removed from the bank of Red Willow Creek last summer under the supervision of the Royal Tyrrell Museum. This Campanian (Late Cretaceous) fossil was found in the Wapiti Formation and is described in Darren Tanke's article *Mosquitoes and Mud*, published in the June 2004 APS *Bulletin*.



Fossil prospecting at Wapiti River, near Grande Prairie, with members of the Palaeontological Society of the Peace. Photo by Vaclav Marsovsky.

We continued to the next site, located near the Wapiti River, which was also in the Wapiti Formation. Here a ceratopsian bone bed was found at a level about 30 m above that of the Pipestone Creek bonebed. Three partial skulls had been found in this quarry. Our group prospected at the base of the quarry (about 15 m below the actual quarry) to find many bone fragments and teeth that had rolled down from the quarry. We found several fossils, such as theropod teeth and bone fragments, which were deemed worthy to add to the collection of the Palaeontological Society of the Peace for exhibit and study. We finished the tour at 12:30 P.M. after thanking our hosts for their wonderful hospitality. ❑

Upcoming Programs

Friday, October 15, 2004, 7:30 P.M., Room B108

Geology, faunal composition and taphonomy of a Late Cretaceous shell bed in the Milk River valley, southern Alberta.

Speaker: **Emily Frampton, University of Calgary**

Abstract:

The Pinhorn Ranch site is a rich faunal assemblage of Late Cretaceous age containing both invertebrate and vertebrate microfossil material. The site is located within the Foremost Formation, a transitional unit between the underlying marine Pakowki Formation and the overlying non-marine Oldman Formation.

The Foremost Formation was deposited in a marginal marine shoreline environment that records a series of regressive cycles of barrier-island beach sands overlain by lagoonal and marsh deposits, laid down during the regression of the Pakowki Sea 79 million years ago. This site was also within close proximity to continental, freshwater and brackish water environments, the influences of which are reflected in the faunal composition of the assemblage.

The site has yielded bivalves, oysters and gastropods and the teeth and bones of sharks, bony fish, amphibians, crocodiles, turtles and dinosaurs. Brackish and marine fauna are the most common, as the site was deposited in a brackish to marine environment. Freshwater and continental fauna are rarer as they were transported into the site. To date, nearly fifty species have been identified from this assemblage. The site itself appears to be a mixed accumulation of fauna that shows no distinct pattern of deposition. But extensive mapping and excavation,

and the collection of taphonomic attributes such as the degree of abrasion, the orientation of elements, the amount of fragmentation and several other features will allow depositional patterns to be recognized and will also provide information on environmental energy, the degree of transport of specimens and other factors of accumulation. These data can then be used to determine the mode of formation of this rich faunal site.

Biography:

Emily Frampton received a B.Sc. in Earth Sciences from the University of Calgary and is currently working on a M.Sc. in palaeontology at the University of Calgary under the supervision of Dr. L.V. Hills. Previous experience in palaeontology includes several field seasons as a laboratory technician at the Field Station of the Royal Tyrrell Museum in Dinosaur Provincial Park.

Friday, November 19, 2004, 7:30 P.M., Room B108

Why are the Canadian Rockies important for conodont work in the outboard terranes of western Canada?

Speaker: **Erik C. Katvala, University of Calgary**

Abstract:

The microfossils known as conodonts belong to an extinct group of animals closely related to vertebrates. Conodonts evolved relatively quickly, allowing for precise biostratigraphic age determination equaling or surpassing most fossil groups during their span from the Late Cambrian through the Triassic. Application of conodont biostratigraphy in the Canadian Rocky Mountains over the last few decades has significantly refined our understanding of the geologic history in the region.

The terranes of Western Canada represent one of the biggest puzzles in geology. The original North American continent in the Rocky Mountains represents a close, relatively well-understood control point with which to compare the geologic histories of the terranes. Comparing these two regions by using conodont species with recognized paleogeographic significance as well as recognized unconformities, tectonic events and changes in sea level, continues to increase our understanding of the unique geologic histories present in the terranes.

Biography:

Erik Katvala received a B.Sc. in zoology and geology from the University of Calgary, a M.S. in palaeontology and stratigraphy from the University of Montana, and is currently working on a Ph.D. with Dr. Charles Henderson at the University of Calgary. His previous experience in palaeontology includes ages from Cambrian through Cretaceous in areas from Montana through northeast British Columbia and along the west coast on Vancouver Island and in southeast Alaska. ❑

Fossils in the News

BBC News Online, April 6, 2004

Sea reptile fossil found on beach

BRIDGEWATER BAY, UK—Fisherman Nick Collard, out for a stroll on the beach, was confronted by the breathtaking sight of a fully-articulated, 1.5 m-long plesiosaur skeleton lying in full view on a bedding surface at low tide (see photos at **http://news.bbc.co.uk/1/hi/england/somerset/3603507.stm**).

Realizing the importance of his discovery, Mr. Collard quickly contacted the nearby Taunton Museum to report the find. Museum staff credit Mr. Collard for his "keen observation and quick thinking" in saving the fossil. The specimen was removed in blocks and taken to the Natural History Museum in London for preparation and study. It was eventually to be displayed at the Taunton Museum.

Science, May 7, 2004

Old World hummingbird fossils

GERMANY—The well-preserved bones of a 30-million-year-old hummingbird have turned up in rocks from southern Germany, according to this article by G. Mayr. *Eurotrochilus inexpectus* appears to have been very similar to modern-day hummingbirds. What makes this discovery so newsworthy is the fact that modern-day hummingbirds are restricted to the New World (North and South America), and the German find is a first for the Old World. It also may shed light on the reason why some Old World flowers seem to be adapted to hummingbird pollination, even though there are presently no hummingbirds to pollinate them.

Grande Prairie Daily Herald-Tribune, September 15, 2004

A bone to pick with dino raiders

GRANDE PRAIRIE—A 49-year-old Edmonton resident has been charged under the Alberta Historical Resources Act for poaching fossils from the famous pachyrhinosaur bonebed at Pipestone Creek (see *Bulletin*, June 2004, p. 16).

Caught in the act by a Tyrrell Museum staffer, the man and his son—who was not charged—were allegedly excavating bones from the protected site. When confronted and informed that their activity was illegal, the two apparently chose to ignore the advice until police intervened.

Grande Prairie dino expert Bert Hunt, (see "New Palaeo Society for the Peace Region", this *Bulletin*, p. 2) who accompanied the Tyrrell Museum staff, was able to photograph the culprits as they dug with picks and shovels.

The accused is set to appear in Grande Prairie court on November 26. The unlawful excavation charge carries a maximum fine of $50,000 and a year in jail.

Royal Tyrrell Museum, News Release, July 8, 2004

Ancient pollen may prove asteroid not entirely to blame for mass extinction

DRUMHELLER—In an ongoing study of pollen samples from a number of K/T boundary sites around North America, Tyrrell scientist Dr. Dennis Braman is finding that fossil plants were undergoing a depletion in numbers prior to the K/T boundary event. These observations parallel findings in the vertebrate fossil record made previously by other Tyrrell scientists: that a general, continental trend toward diminished flora and fauna was already underway tens of thousands of years prior to the K/T boundary event.

The obvious implication is that the much-hailed asteroid impact may not have been solely responsible for the mass extinctions of dinosaurs and contemporary organisms. Climate change is the main candidate to explain these changes, but studies are as yet incomplete. Braman expects that new samples from Wyoming and North Dakota will yield important data in coming months.

Science, August 20, 2004

Curiouser and curiouser: new Ediacaran fossils come to light

MISTAKEN POINT, NF—Remarkably preserved fossils of Ediacaran organisms (predating the "Cambrian Explosion") have been discovered in the rocks of Mistaken Point, Newfoundland. Geologist Dr. Guy Narbonne, of Queen's University, announced the discovery of this important fauna of soft-bodied animals. The 575-million-year-old fossils were preserved in volcanic ash deposits laid down on a shallow sea floor. Though exquisitely preserved, the fossil impressions are visible only in the low-angle light at sunrise, which is probably why they escaped notice until now. Features as fine as 30 micrometres are visible on some of the fossils, which are preserved in three dimensions. One of the specimens is featured on the cover of the August 20 *Science* magazine.

Local residents are hoping to build an interpretive centre to protect the fossils, and to have the locality declared a UNESCO World Heritage Site. (see also **www.cbc.ca/story/science/national/2003/01/17/nfld_fossils030117.html**)

Thanks to Georgia Hoffman for submitting news clippings and web links. – ed. ❑

Review

by Mona Marsovsky

Daniel's Dinosaurs, A True Story of Discovery by Charles Helm, Maple Tree Press Inc. (**www.mapletreepress.com**), ISBN 1-897066-06-6, $19.95, 32 pages, hardcover.

Daniel's Dinosaurs is written by Charles Helm, the father of Daniel Helm. In the summer of 2000, 12-year-old Daniel Helm and his friend, Mark Turner, found the first *in situ* dinosaur tracksite in British Columbia. This book describes the discovery and scientific documentation of this important site. I particularly liked the section which described how to identify theropod, ornithopod and ankylosaur footprints. This easy-to-read book is suitable for both children and adults and includes lots of photos. Proceeds from the sale of this book go to support the palaeontology projects of the Tumbler Ridge Museum Foundation. ❑

Fossil Treasures of Germany

Article and photos by Mona and Vaclav Marsovsky

We visited Germany for two weeks in August, 2004, as an extension of Mona's one-week business trip. We must thank **Oliver Wings**, a German palaeontologist we met during SVP 2003, for suggesting some of these palaeontological locations.

Germany is renowned for the Solnhofen quarries, where *Archaeopteryx lithographica* was found in Jurassic (150 million year old) limestone. Four museums in the Solnhofen area display some of the treasures that have been found while workmen quarried the limestone, which was used for printing-presses and as building stone.

Solnhofen is a small town—too small to appear on some German maps—surrounded by extensive quarry operations that continue for miles. To find it, look for the small city of Eichstätt, halfway between Nürnburg and Munich. Eichstätt is northwest of Ingolstadt on Highway 13. Solnhofen is on a secondary road west of Eichstätt. South of Solnhofen, look for the road signs to the Museum auf dem Maxberg.

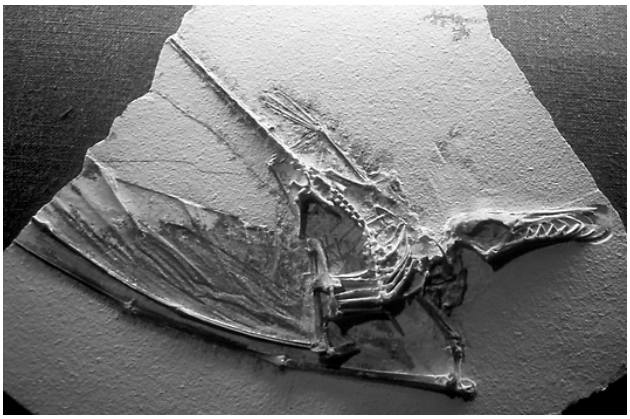
The signs will lead you along a private road to an industrial complex (admission 2.3 Euros for adults) where a comprehensive collection of Solnhofen fauna includes one of the original *Archaeopteryx lithographica*, the so-called Maxberg specimen. Copies of the other *Archaeopteryx* specimens are also exhibited. Excellent lighting and good signage (including a few signs in English) illustrate the excellent specimens on display that include fish, crocodiles, flying reptiles, insects, plants, invertebrates and even trackways. My favorite display was the "dissolving" jellyfish.

Solnhofen is thought to have been the location of coral reefs on the northern margin of the Tethys ocean during the Jurassic. The excellent preservation is thought to be due to the lack of predators in the stagnant, hypersaline bottom water trapped between old sponge microbial mounds in isolated basins separated from the open ocean. Monsoonal storms introduced suspended lime mud which rapidly covered any sunken carcasses. The hot and dry climate concentrated salt in the basins. The rapid mixing of the hypersaline and normal salt waters is thought to have caused some of the mass mortality events.

The Bürgermeister-Müller Museum (admission 2 Euros) next to the train tracks in the town of Solnhofen has two storeys filled with fossils from the quarries.

Quarry operations at Solnhofen, southern Germany, source of the famous *Archaeopteryx* fossils.

The Jura-Museum is located in the Willibaldsburg castle, overlooking the city of Eichstätt. Admission is 4 Euros, which includes the anthropology/archeology museum, Museum für ur-und Früh-Geschichte. The Jura-Museum also has an extensive collection of Solnhofen fossils, plus it proudly displays its own original *Archaeopteryx lithographica*, the so-called Eichstätt specimen, which was found in 1951 and



Flying reptile *Rhamphorhynchus muensteri* on a slab of Solnhofen limestone, Bürgermeister-Müller Museum, Solnhofen.

described in 1973.

We did not have a chance to visit the Bergen Museum which is closed in the mornings most days of the week. This museum is located about six kilometres northwest of Eichstätt, near the Fossiliensteinbruch quarry, where the public is invited to dig for fossils in a Solnhofen quarry for the fee of 2 Euros per person. Rental of tools is also provided at a reasonable cost (*e.g.* 1.5 Euro for a hammer).

The town of Messel displays some of the fossils found in the Messel quarries in its small museum in the centre of town (admission by donation). Messel is about 20 km southeast of Frankfurt and is northeast of Darmstadt. Take the secondary road between Darmstadt towards Rodermark. The Messel Museum displays the three-toed horse found at this Eocene (55 million years old) quarry, plus amazing fish, alligators, insects and trackways. The fine-grained Messel shale preserves the same degree of detail as the Solnhofen limestone.

We did not have time to visit the quarries where the fossils were found, which are located about 4 km south of town. Maps purchased at the Senckenberg Museum in Frankfurt show the Messel quarries and hiking trails.

The Senckenberg Forschungsinstitut und Naturmuseum, located in Frankfurt, is famed for its mummified hadrosaur (*Edmontosaurus*) found in eastern Wyoming in 1910 by Charlie Sternberg. The display allows the onlooker to view the amazing preservation of this duck-billed dinosaur from all angles, including viewing from above. This museum displays copies of all of the specimens found of the early bird *Archaeopteryx lithographica* from the Solnhofen quarries. It also has an extensive collection of the Messel Eocene fauna, as well as several mounts of skeletons of dinosaurs and mammals, including some amazing whale fossils. Admission is 5 Euros for adults.

On a previous business trip to Germany, I visited the Dinosaurierpark Münchehagen, northwest of Hannover. This park (7.5 Euros per adult) exhibits colourful, life-sized concrete statutes of prehistoric fauna arranged by age, in a park setting. The highlight of the park is the extensive Early Cretaceous

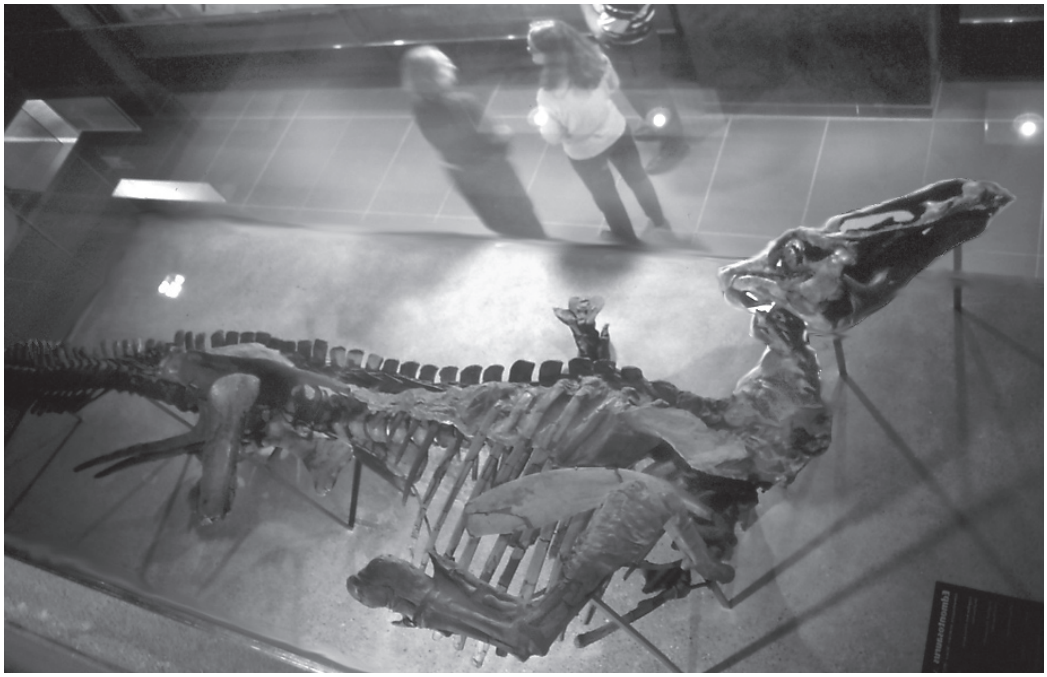
Fantastic display of ichthyosaurs in the Museum für Naturkunde, Berlin.

Maxberg Museum near Solnhofen, includes this fine collection of fossil fish.

(130 million year old) dinosaur trackways featuring sauropod and theropod trackways, plus turtle and alligator fossils. Most of the trackways are protected by a huge glass and steel building. See the website **www.dinopark.de/engl/dinopark.html** for driving instructions or ask at the information booth at the Hannover central train station for the rail and bus connections.

In the short time that we were in Germany, we just scratched the surface of some of the palaeontological resources available.

A full listing of palaeontological museums in Germany is listed in the book *Zeugen der Erdgeschichte-Ein Resisefuhrere zu den Schonsten Fossilien in deutschen naturkunde Museen*. This useful book has a map of Germany illustrating the locations of major palaeontological museums and their corresponding page numbers. For each museum, the book lists the address, hours of operation, admission prices and includes colour photos of some of the displays plus a few paragraphs of descriptive German text. Some descriptions include maps. Although this book is written in German, it is a wonderful reference for English speakers. Unfortunately we didn't find this book until our last day in Germany! ❑



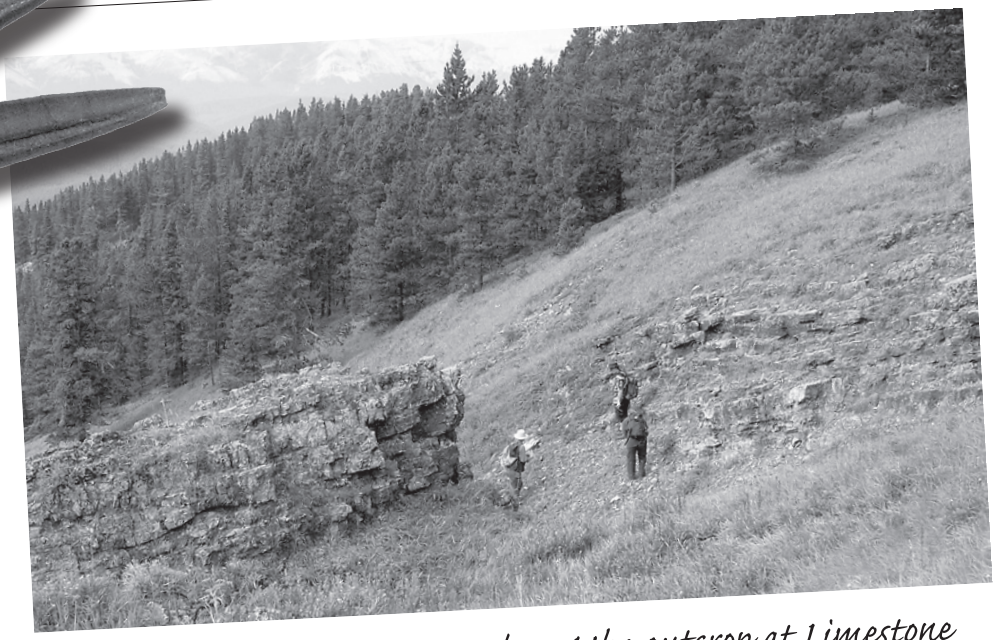
Charlie Sternberg's famous mummified *Edmontosaurus*, from Wyoming, can be viewed from all angles in the Senckenberg Forschungsinstitut und Naturmuseum in Frankfurt.

Our 2004 field trips!

We managed to score a sunny day for our South Saskatchewan River badlands expedition near Hilda, in June—Keith Mychaluk

Rattlesnakes are people, too! —Keith

Sermon on the Mount—Limestone, that is, at the Jurassic Nordegg Mbr. Outcrop, August—Keith



Examining the Jurassic Nordegg Mbr. outcrop at Limestone Mountain, BEFORE the rain! August–Keith Mychaluk

"Explain again how the dinosaurs walked upside down under that overhang. . . ?" Quality Creek, B.C., July–Vaclav Marsovsky