

Alberta

Palaeontological Society Bulletin

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ALBERTA PALAEOLOGICAL SOCIETY

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† APAC is the Alberta Palaeontological Advisory Committee

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

* A dues increase was approved at the May 2002 annual meeting. This affects all new memberships and renewals.

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** (or **B101**, across the hall)
Mount Royal College, 4825 Richard Road SW, Calgary, Alberta

Friday, January 10, 2003—Dr. Julia Sankey, Vassar College, Poughkeepsie, New York:
Latest Cretaceous Theropod Dinosaur Diversity in North America. See Page 3 for details.

Friday, February 21, 2003—Dr. Russell Hall, University of Calgary:
The life and science of Charles Darwin.

Saturday & Sunday, March 15 & 16, 2003—The APS Seventh Annual Symposium!
See Page 29 for details.

ON THE COVER: Our fabulous new T-shirt design, by APS member Cory Gross! See Page 28 for information on purchasing your T-shirts and sweatshirts. All proceeds go to fund Society activities.

Harvey, Steffie Negrich Awarded Life Membership

At the May 2002 general meeting of the Alberta Palaeontological Society Harvey and Steffie Negrich were awarded Life Membership in the Society.

Harvey and Steffie are founding members of the APS and have been active in amateur palaeontology for many years. Many of the meetings of the “Fossil Group,” the forerunner of the Society, were held at the Negrich home. When the Society was formed in 1986 the Negriches were enthusiastic supporters and took an active role. Harvey took on the positions of Curator, Field Trip Coordinator and APAC representative, while Steffie took on the positions of Secretary-Treasurer (1986-87) and Membership (1986, 1988-89). In addition Steffie was also involved with the production of the early Bulletins.

Harvey started the APS fossil collection in 1984 as a project for the “Fossil Group.” The purpose was to create a set of reference material to help in the identification of specimens and to provide a home for material that would otherwise end up in the landfill. Since then the collection has steadily grown. When the Society was formed Harvey became Curator, a position he held from 1986 until 1998. In addition Harvey was also Field Trip Coordinator from 1986 until 1990 and the first amateur representative on the Alberta Palaeontological Advisory Committee (1982-1987).

Without the support of the Negriches it is doubtful that the Alberta Palaeontological Society would have been formed. By providing a meeting place and filling key positions they helped to foster the growth of the Society. Both Harvey and Steffie continue to support the Society and Steffie has taken on the position of Social director for this year. For their contributions to the Alberta Palaeontological Society the Negriches were awarded Life Membership.

– Wayne Braunberger □

Wayne Braunberger Awarded Life Membership

If any member of the APS were asked to name the one person who has made the biggest contribution to our Society, they would reply without hesitation: “Wayne Braunberger—of course!”

Wayne was one of the founding members of the Society in 1986, and its first President. Since then, his contributions have been so many that it would almost be easier to list the things he hasn’t done.

Besides serving two full terms as President (1986–1988, 1995–1998), he has served as Editor (1989, 1990), Field Trip Coordinator (1991, current), APAC representative (1992–1993) and Director-at-Large. He has sat on untold numbers of Executive committees, and played major roles in the annual Symposia, including the upcoming 2003 event.

On field trips, Wayne is pretty much a permanent fixture, having attended most, if not all trips held to date. He has led or provided major guidance on many of the trips, scouted locations in advance, and compiled many field trip handouts.

Wayne has led seminars on fossil identification, curation, map reading and field methods. He has given general meeting talks on badlands geology, ammonites, map-reading, statistical methods and ichnology, and recruited other speakers. He has contributed dozens of articles and notices to the *Bulletin*. The Society’s fossil collection has benefitted from his donation of specimens and curatorial guidance.

As if this weren’t enough, anybody who has attended the annual CRLC shows will recognize Wayne’s ubiquitous presence as an exhibitor, organizer, judge, and—naturally—representative of the APS at the Society’s fossil ID and information booth.

This dossier only glosses over Wayne’s incalculable and continuing contributions to the Society, for which he has earned our gratitude, and for which he was awarded the honour of Life Membership at the May 2002 general meeting.

– Howard Allen □

Program Summary

November 15, 2002

*The Life and Death of a Graptolite:
Paleoecology and Taphonomy of the Cape
Phillips Graptolite Fauna, Arctic Canada.*

Speaker: **Dr. Jen Russel-Houston**

**Geologist, Frontier, Sable Development,
Shell Canada Limited.**

Abstract:

Graptolite-bearing concretions of the Cape Phillips Formation, Arctic Canada, were lithified during shallow burial, preserving the three-dimensional shape of the graptolite rhabdosomes and the character of the sediment before physical compaction. The graptolites and the sediments captured by this unique preservation give insight into questions unsolved in the studies of flattened graptolites preserved in shale. Every graptolite sample is a record of the original planktonic community and the taphonomic events that altered that original graptolite population.

This talk showed how the exquisitely preserved graptolites have aided our understanding of the preservational history (taphonomy) of graptolites and how these observations are used to interpret the composition of the original graptolite communities.

Dr. Russel-Houston also discussed some of the modern views of this ancient animal, including colonial communism, graptolite mass mortality, fantastic Silurian predators, swimming graptolites, and colonial sex.

Biography:

Dr. Russel-Houston received her B.Sc. from Queen's University in 1995, a B.Ed. from the University of Ottawa in 1996, and a Ph.D. in Earth Sciences from Dalhousie University in 2001. Her thesis subject involved the study of the taphonomy, paleosynecology, biostratigraphy, and taxonomy of Silurian graptolites.

Dr. Russel-Houston began with Shell Canada in 2001 and is currently a geologist on a team that is developing the Sable Gas Field off the coast of Nova Scotia. Unfortunately, the rocks of the Sable reservoir are too young for graptolites, and for now her graptolite research is delegated to weekends and evenings. □

Upcoming Programs

**NOTE! The January 2003 Meeting
will be held on January 10.
One week early!**

Friday, January 10, 2003, Room B108

***Latest Cretaceous Theropod Dinosaur Diversity
in North America.***

Speaker: **Dr. Julia Sankey**
Vassar College, Poughkeepsie, NY

Abstract:

Despite intensive work on the Cretaceous/Tertiary (K/T) extinctions during the past twenty years, surprisingly little is known about the diversity of dinosaurs during the latest Cretaceous, prior to the K/T. Critical information on Maastrichtian theropod diversity has been overlooked.

This information is the thousands of isolated theropod teeth in museum collections that resulted from intensive screen washing efforts for Late Cretaceous mammals. Unfortunately, theropod tooth taxonomy is poorly developed for the Maastrichtian compared to the Campanian. This is partly due to how few non-tyrannosaurid theropod jaws with teeth have been found in North America, which would provide information on tooth variability.

This study attempts to assess whether non-tyrannosaurid theropod dinosaurs decreased during the final ten million years of the Late Cretaceous based on extensive collections of theropod teeth at the Tyrrell Museum of Palaeontology, UC Berkeley Museum of Paleontology, and the Pioneer Trails Regional Museum.

Teeth were recovered by surface collection and screening microfossil sites from the Judith River Group of Alberta (Campanian; n=1700) and the Lance and Hell Creek Formations of Montana, Wyoming, and North Dakota (Maastrichtian; n=530). The study included descriptions, photographs, measurements, and bivariate plots to quantify tooth morphotypes.

Taxa (excluding tyrannosaurids) include: *Richardoestes* *isosceles* (32%), *R. isosceles* Morphotype 1

(20%), *Richardoestesia* sp. (3%), *Saurornitholestes* sp. and dromaeosaurid indet. (23%), *Troödon* sp. (13%), troödontid indet. (0.7%), and Aves (8%).

One result was solving "*Paronychodon*," a common but enigmatic Maastrichtian theropod. Based on similarity to *R. isosceles* in both morphology and relative abundance, Maastrichtian "*Paronychodon*" is now considered a morphotype of *R. isosceles*. This theropod, with straight to slightly recurved teeth, may have been a fish-eater, convergent with spinosaurids from Africa, Europe, and South America.

North American Campanian and Maastrichtian theropod assemblages differ in 1) taxonomic composition, 2) relative abundance, and 3) diversity. 1) *Dromaeosaurus albertensis* and *Saurornitholestes langstoni*, common in the Campanian, are absent from the Maastrichtian and two new unnamed dromaeosaurids are present. 2) *R. isosceles*, uncommon in the Campanian, is most abundant in the Maastrichtian (52%). 3) Diversity is lower in the Maastrichtian due to fewer dromaeosaurid species. Further work will test this apparent decline by increasing the Maastrichtian sample sizes and testing the taxonomic hypotheses.

Biography:

Julia Sankey's interests are in vertebrate paleontology and women in science issues. Her current research interests are on mass extinctions, especially the causes and subsequent recoveries. She is working on the Cretaceous/Tertiary, especially on evolution and extinction within theropod dinosaurs and mammals. Her research also involves magnetostratigraphy for better age control. She is a research fellow with the Royal Tyrrell Museum of Palaeontology. Her field areas also include Texas and North Dakota.

Friday, February 21, 2003

The Life and Science of Charles Darwin

Speaker: **Dr. Russell Hall**
University of Calgary

Saturday, March 15, 2003

Mount Royal College, Lower Level &
Jenkins Theatre

APS Seventh Annual Symposium (see page 29, this issue)

NOTE! The regular March Meeting is cancelled, and replaced by the Symposium. □

Archaeological Society of Alberta speaker series

The following talks are scheduled by the ASA at 7:30 P.M. in the Science Building room B144 at the University of Calgary. The general public are welcome.

January 15

Unveiling Bilqis—an archaeological mystery revealed.

Speaker: Bill Glanzman, University of Calgary.

Report on the survey of the desert sand-covered pre-Islamic site Mahram Bilqis, Marib quarter, Republic of Yemen.

February 19

The Great E-SCAPE: Recent palaeoenvironmental research in the Canadian prairies.

Speaker: Alwynne Beaudoin

Paleontological and stratigraphic evidence for post-glacial environments in the Cypress Hills.

March 19

Archaeological investigations at Dudestii Vechi: an Early Neolithic site on the Hungarian Plains of Romania.

Speaker: Joe Moravetz

Evidence for Europe's earliest farmers.

April 16

The 2001 Mackenzie Delta Heritage Resource Survey

Speaker: Katherine Bosch

Results of a survey undertaken in advance of a proposed gas pipeline south from Mackenzie Delta.

For more information on the ASA visit:

http://www.ucalgary.ca/UofC/faculties/SS/ARKY/ASA_Files/ASA_main.htm

or contact: Carol McCreary
ASA Calgary Centre Treasurer
PO Box 611
Black Diamond, AB
T0L 0H0 □

Workshop on Mesoreptiles set for January 18

Dr. Don Brinkman of the Royal Tyrrell Museum of Palaeontology will be conducting a workshop for APS members on **Saturday, January 18, 2003**, from 10:00 a.m. to 3:30 p.m. The topic will be "Mesoreptiles." Fee for the workshop will be approximately \$15.00 to cover the cost of a handout, and the venue will be the Royal Tyrrell Museum, in Drumheller. **Deadline for signing up is January 10, 2003. People who sign up will be required to pay their fee prior to the deadline.**

To sign up, or get more information, contact Vaclav Marsovsky (403) 547-0182
Email: vaclav@telusplanet.net □

ALBERTA PALAEOLOGICAL SOCIETY CALGARY, ALBERTA

Operating Statement for 2001 (Audited)
January 1, 2001 to December 31, 2001

Revenues		Expenses	
Memberships	2372.50	Bulletin Printing	641.09
T-shirts	245.00	Bulletin Postage	496.98
Pins	15.00	Speaker Expenses	816.44
Field Trip Guides	175.00	PO Box Rental	154.08
Field Trip Fees	272.50	Field Trip Exp.	115.62
Abstract Volumes	466.00	Misc. Events	94.70
CD-ROM sales	75.00	Printing, Supplies	670.66
Misc. Sales	35.00	Other Postage	30.11
Raffle Proceeds	32.75	Website Expenses	315.65
Event Fees	445.00	Refreshments	84.94
Refreshments	48.16	Bank Charges	55.80
Donations	2234.15	Miscellaneous	144.23
US\$ Exchange	32.65		
Total Revenues	6448.71	Total Expenses	3620.30

Excess of Revenues over Expenses = \$2828.41

Treasurers: Cindy Evans, Howard Allen
Auditors: Mona Marsovsky, Vaclav Marsovsky

Fifth British Columbia Paleontological Symposium, Nanaimo, BC

The BC Paleontological Alliance's Fifth Symposium is being held **May 2 – 5, 2003**, at Malaspina University-College, Nanaimo. The Symposium will include oral and poster presentations, workshops and field trips, and a palaeontology juried art show. Keynote speaker is Dr. Elizabeth Nicholls of the Royal Tyrrell Museum, who will speak on: *Ichthyosaur Update—Current Research on the Ichthyosaur Fauna from the Triassic of Northeastern British Columbia*.

Registration fees for the Symposium are \$65.00 + GST **before April 1, 2003** or \$75.00 + GST after April 1. Registration fee includes a Welcome Reception, banquet, nutrition breaks and a Symposium abstract booklet. Three post-Symposium field trips will be conducted to local fossil sites. Field trip fees range from \$25 to \$40 + GST, and include transportation and lunch. Book early to ensure a seat.

Abstracts for oral or poster presentations are being accepted in electronic format. Deadline is March 15.

For more information, visit the website:

<http://web.mala.bc.ca/faep/paleo.htm> or contact:

Workshop/field trips: Graham Beard
(250) 752-9810
gtbeard@shaw.ca

Art show: Tina Beard
(250) 752-9810
gtbeard@shaw.ca

Symposium: Maggie McColl
(250) 753-3245, local 2334
mccoll@mala.bc.ca □

Dan Quinsey appointed APAC representative

Dan Quinsey has been appointed as the Society's representative to the Alberta Palaeontological Advisory Committee (APAC), replacing Vaclav Marsovsky, whose term expired this year. The APS Board of Directors wishes to thank **Georgia Hoffman**, who originally volunteered to fill the position. Unfortunately, Georgia's advanced academic standing in palaeontology disqualified her from representing the amateur

community, according to APAC guidelines.

APAC is a committee representing the interests of museums, universities, government, industry and amateurs, whose purpose is to advise the Provincial Government on matters concerning palaeontological resources. □

Tyrrell Museum Research Day Symposium set for January 25

Everyone is invited to the first Royal Tyrrell Museum Research Day Symposium, Saturday, January 25, 2003. The day will feature talks and poster presentations by Royal Tyrrell Museum palaeontologists and associated researchers on their current research activities. Some newly prepared fossils relating to the talks will be displayed in the "Great Minds, Fresh Finds" Gallery.

Advance registration fee for the Research Day Symposium is \$12.00 and includes admission to the Royal Tyrrell Museum, access to all the talks and posters, lunch and refreshments. **Pre-registration deadline is January 17, 2003.** Tickets will be available at the door at a cost of \$15.00. Watch the Royal Tyrrell Museum website at

www.tyrrellmuseum.com

for a list of talks and event updates.

To register, contact the Royal Tyrrell Museum Bookings Office, toll free at 310-0000 then dial (403) 823-7707. If you have questions about the event, please contact

Dan Spivak: **dan.spivak@gov.ab.ca** or

Paul Salvatore: **paul.salvatore@gov.ab.ca**

Or phone the number listed above.

Operated by Alberta Community Development, the Royal Tyrrell Museum is located six kilometres northwest of Drumheller on Highway 838. Winter hours: 10 A.M. to 5 P.M. Tuesday through Sunday. □

Library Notes

by Mona Marsovsky, APS Librarian

Exchange Bulletins (Part 2)

Following is a brief description of the other exchange bulletins that APS receives. See the September 2002 *Bulletin* for the rest of the list.

The American Paleontologist is "a newsmagazine of earth science published by the Paleontological Research Institution Ithaca, New York." A short insert in this quarterly publication is devoted to the activities of the Ithaca Museum of the Earth. Peter Dodson provides a regular column called "Dodson on Dinosaurs." The Paleo News section summarizes new articles from *Nature*, *Science*, *Geology* and other publications. There are book reviews, plus the "Briefly Noted" section which lists new publications. Feature articles are included in each issue. The May 2002 issue includes an article called "The Age of Dinosaurs in the Newark Basin," which describes the Permian through Jurassic geology and fossils of the New York area.

The British Columbia Paleontological Alliance Newsletter is a quarterly publication that lists the activities of its member societies throughout BC. It has interesting scholarly articles on BC palaeontology, describing both vertebrate and invertebrate work from professionals and amateurs.

Rock Talk is a quarterly publication from the Division of Minerals and Geology of the Colorado Geological Survey (CGS). Not surprisingly, this bulletin is packed with articles about geology. For example, the April 2002 issue focused on earthquakes in Colorado. A listing of new Colorado Geological Survey publications is also included in this newsletter.

What on Earth!, the "Canadian Newsletter for the Earth Sciences" is the new name of the University of Waterloo biannual earth sciences newsletter. This revamped version focuses on providing information to teachers about the geological sciences, in layman's terms. The summer 2002 issue featured articles on gold, glacial landforms, the extinct Irish elk and igneous rocks.

Science News is published by the Science Foundation of Alberta. It includes science activities for the kids, plus news on local science events. □

Search for the American Museum of Natural History Scows *Mary Jane* and *Mary Ann* Project Update

by Darren H. Tanke
Royal Tyrrell Museum of Palaeontology
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Introduction

At the 2002 Alberta Palaeontological Society (APS) 6th Annual Symposium meetings in Calgary, AB, the author presented details of a project in which he was attempting to relocate the whereabouts of several American Museum of Natural History (AMNH) watercraft used on the Red Deer River, Alberta, from 1910–1915 (Tanke, 2002). One of these craft was the famous wooden scow *Mary Jane*, used as a mobile, floating basecamp from 1910–1912.

This scow is regularly figured in popular palaeontology publications that include a history component (e.g. Russell, 1966; Colbert, 1968; Preston, 1986; Michard, 1992; Wallace, 1994; Bown, 1998; Walters, 2000). A life-sized replica of this scow was featured in the 1998 IMAX movie: *T-rex: Back to the Cretaceous* and figured in Ashby (1999), a childrens book based on the same movie.

In response to general queries from APS members and the public, as well as acquisition of significant new information, an update on the project is given here. A number of APS members and APS 2002 conference delegates also expressed an interest in the methodology utilized in these types of research projects, so they are outlined here as well. The author's editorial comments are held within square brackets. All coordinates presented herein were taken by hand-held Garmin® GPS 12 CX unit.

In April 2002, Drs. Philip J. Currie and Eva Kopelhus visited the Forsyth Library, part of the Fort Hays State University in Hays, Kansas. One activity they engaged in there was the digital photography of hundreds of archival black and white photographs taken and/or acquired by George Fryer Sternberg

(1883–1969). George, the eldest son of Charles Hazelius Sternberg (1850–1943), was very active in Alberta for the better part of a decade and evidently somewhat of a shutterbug. Many of these were pictures taken by him during his palaeontological fieldwork in Alberta for the AMNH, Geological Survey of Canada, University of Alberta (Edmonton), Chicago Field Museum, or as an independent collector. These particular pictures covered the years 1912–1916 and c. 1920–1922. The pictures and their captions will provide many new historical details relating to the early period of dinosaur collecting and collectors in Alberta. Properly interpreted and utilized, they will also greatly assist in the ongoing relocation of lost quarries and/or identification of mystery quarries across central and southern Alberta (Anonymous, 1998; Tanke, 1999, 2001, in prep.; Tanke *et al.*, 2002).

AMNH scow *Mary Jane* (used in the 1910–1912 field seasons)

One photograph in the Kansas collection showed the AMNH scow *Mary Jane* pulled ashore and beached for the final time. This photograph is simply identified in the photograph album as “Our Last Camp on Red Deer River. 1912 GFS”. The picture (figure 1a), shows two men, three tents, a wagon, and, most importantly, in the background the *Mary Jane* can be seen to be pulled up ashore on wooden runners. Young cottonwood trees and other woody vegetation in camp are leafless, indicating the lateness of the field season. This is in accordance with field notes, which stated the scow was pulled ashore on October 17, 1912 (Kaisen, 1912; Tanke, 2002, p. 57, 61). The beaching was done near a place identified in various AMNH internal

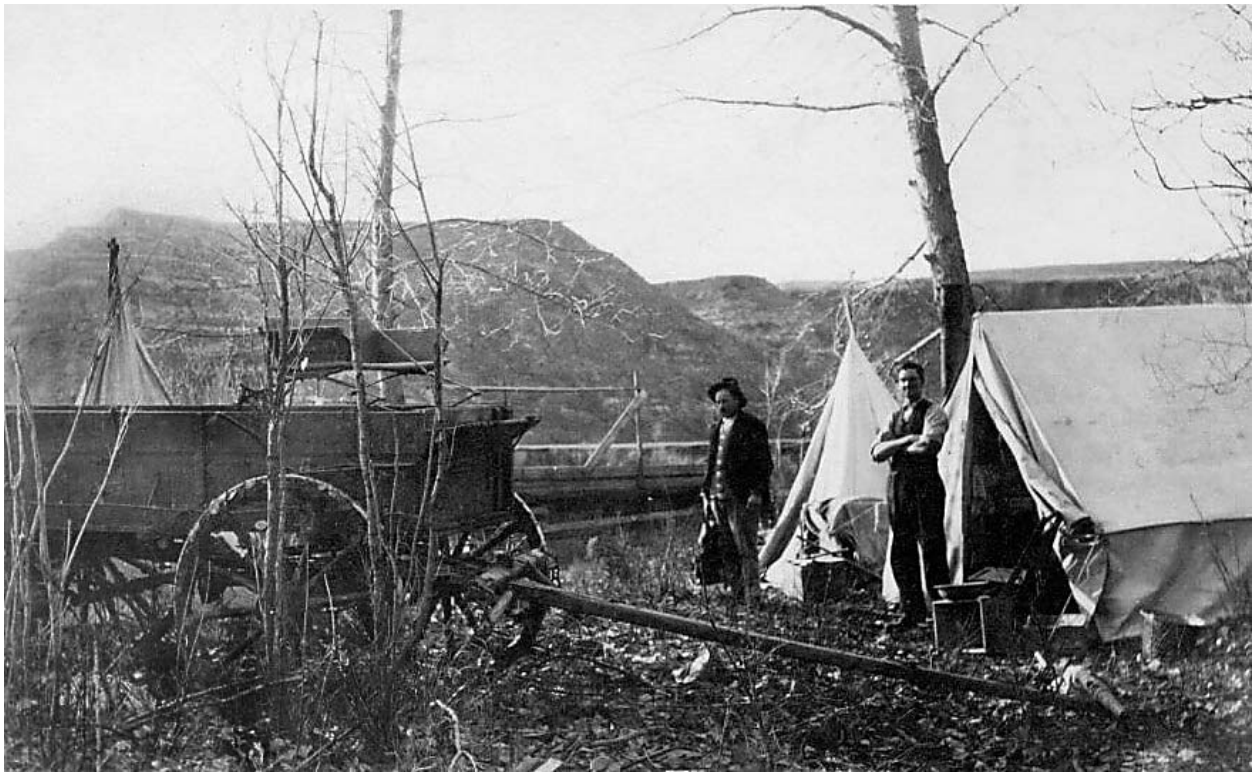


Figure 1a. A photograph taken by George Sternberg showing the final AMNH camp on the Red Deer River west of Morrin, in the fall of 1912. A glimpse of the scow *Mary Jane* (sans tent) is visible between the wagon and tents. (See notes on Figure 1a, p. 14). Photo courtesy of Forsyth Library, Fort Hays State University, Kansas.



Figure 1b. The overall scene today (looking west) showing the badland outcrops on the west side of the river and possibly the same tree that appears in the 1912 photograph (see figure 1c). UTM coordinates here are: 12U 0368235; 5724094 (WGS 84). Photograph by the author, May 18, 2002.

documents as “Stauffer’s”; this being the Stauffer farmhouse, the now mostly vanished remains of which are positioned near the present-day Morrin Bridge (Tanke, 2002, fig. 2a). George Sternberg’s 1912 picture clearly showed the skyline and badlands terrain across the river, thus allowing for a renewed effort to find the scow.

On May 11, 2002, the author and his children, armed with a copy of figure 1a, again explored the east bank of the Red Deer River upstream from the Morrin Bridge. They conducted an additional exploration on May 18 and the author did a final survey on May 25. Several previous unsuccessful relocation

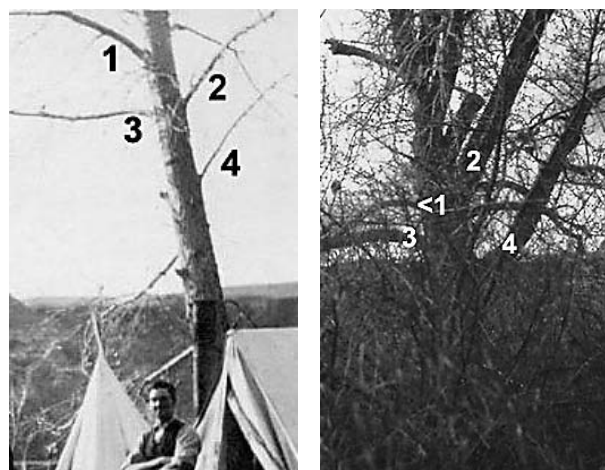


Figure 1c. Comparison between relatively young cottonwood tree in the 1912 camp (left) and a mature cottonwood tree (partially obscured by dense undergrowth) found in the same spot in May 2002 (right). The lean of the main trunk and configuration of the tree limbs (especially 1 and 3) are similar, suggesting this is the same tree.

efforts along the east bank had concentrated several hundred metres upstream and downstream of today’s Morrin Bridge where Highway 27 crosses the river.

Using the distinctive skyline and badlands outcrops in the background as a reference point, the same location as the 1912 photograph was soon relocated (figure 1b). This confirmed that the previous search area upstream of the bridge was on the right track, but that the scow was moved somewhat further inland than first supposed, approximately 30 metres east of the present east bank of the Red Deer River.

Relocating old sites this way is sometimes complicated by grainy picture development, optical distortions, effects of perspective and different format (focal length) of cameras used by the early collectors. Sometimes pictures were accidentally printed backwards, adding even more of a challenge.

The outcrops across the river were first matched to the 1912 photograph and a rough search area located. Finalization of the search area was based on viewing the local scenery through a 35 mm SLR camera mounted with a 28 mm wide-angle lens. Experience has shown that the resulting view (with slight cropping of edges) most closely approximates the same format and focal length as the 5 x 7 inch glass plate negative cameras used in the field long ago. GPS data indicates that in 1912, the *Mary Jane* was pulled ashore and stored about 270 metres south of the Stauffer homestead, or about 380 metres north of the Morrin Bridge.

Not unexpectedly, the scene has changed since 1912. The cottonwood tree closest to the main (cook) tent that was relatively young in 1912 (figure 1a) is now, 90 years later, a gnarled mature tree (figures 1b, 1c), though not as large as some of its more distant neighbors. It seems quite possible that this is the very same tree, as the lean of the main trunk and the configuration of the lower main limbs are similar (figure 1c). The two main branches visible on the left side of the tree appear lower today, possibly related to accumulations of flood-borne mud and silt dumped at the base of the tree during its life. The presence of a main branch on the right side of the tree today (and not present in the 1912 photograph) is explained by the fact that cottonwood trees can produce new branches from the main trunk throughout their lives (pers. observ.).

Ground that appears to have been dominated by a grass and scattered shrub covering in 1912 is today covered by a dense, tangled thicket of willow and dogwood shrubs, thorny wild rose and other vegetation. The *Mary Jane* was not seen, neither in the spot she was pulled ashore in 1912 nor a short distance downstream from this point. There was no indication of the expedition’s rowboat either. In the 1912 photograph, the scow sits on land level with the camp. Today the bank and spot where the scow used to sit is about 1 metre lower. This suggests the land along the Red Deer River on the east bank was scoured away by strong floodwaters, which presumably also swept the scow away. Floodwater aligned tree and shrub debris several metres away shows the river in flood can indeed reach this far inland, lending support to this idea.

It is unlikely that the river has changed its course and washed the scow away as was suggested at the 2002 APS meetings. Several regional maps used by George F. Sternberg on his palaeontological expedition of 1915 support this conclusion. These show that the



Figure 2. The bottle found at the site of the AMNH 1912 camp. It measures 29.6 cm tall. Photograph by the author.

river course was essentially the same then as it is today.

A search for any concentrations of field camp garbage, as has been observed elsewhere (Tanke, 2000a, b, manuscript a) was negative. How the early palaeontological expeditions to Alberta solved their garbage disposal problems is largely unknown, although youngest son Levi Sternberg (1894–1976) seems to have consistently left quarry garbage on site and possibly in camp (Tanke, manuscript a). Some rusted tin cans and a liquor bottle were found in the bushes within a few to 10 metres east of the 1912 AMNH camp. The types and method of construction (Rock, 1984) of the tin items found in the vicinity were obviously of more recent vintage and possibly carried there by floodwaters.

The bottle (figure 2) is of interest. It was found lying on its side, completely filled with sediment and almost totally buried in the rooted soil to a depth of approximately 10–15 cm on the eastern edge of the 1912 AMNH camp. The shoulder of the bottle was seen eroding out and protruding from the wall of a low grass covered slope.

It is a glass liquor (wine?) bottle, with a medium green translucent coloration. The glass shows no patina. It is complete, undamaged and measures 29.6 cm tall with a maximum circumference of 26 cm. It has a tapered and collared lip with a ring below. It was originally sealed with a cork, now missing. The neck is long and with rounded shoulders. The bottle was machine-made in 4-piece mould, with prominent raised casting lines present on the base, both sides (running up to the spout) and the base of the spout. The glass thickness on the base is irregular and a few small air bubbles are trapped within the glass. These are both traits of old glass artifacts and reflect cruder manufacturing techniques. The only definite marking on the bottom is a small, crude, raised equilateral

triangle measuring 8–9 mm per side. A number of bottle makers included a triangle in their company “punt mark” or logo on the bottle’s bottom (Toulouse, 1971), but these always contained a letter inside, which is not seen in this example. Similar triangle markings without a letter inside were observed on old glassware in a Drumheller antique shop. A vague raised feature also on the bottom may represent a reversed uppercase letter “C” but this may be just an irregularity of the casting process.

The bottle has many attributes hinting at its antiquity when compared to period glass from Alberta and elsewhere (Hunt, 1959; Stevens, 1967; Adams *et al.*, 1977; Chopping, 1978; Kowal, 1992; Sutton-Smith and Sutton-Smith, 1999). It is comparable to old bottles found in pre-WWII quarries in Dinosaur Provincial Park (DPP). Its excellent, unbroken condition and absence of a surface patina might suggest to some that it is simply a modern bottle, but complete perfect bottles and jars without a patina, and unquestionably dating back 50 to approximately 85 years have been found in the badlands of DPP. The smallest and most fragile of these was preserved in perfect condition despite being found in the bottom of a deep major



Figure 3. Old 9.5 oz (105 ml) medicine bottle found in the badlands near Iddesleigh, AB; summer 2002. Photograph by the author. (See notes on Figure 3, p. 15.)



Figure 4. The AMNH scow *Mary Ann* being towed by the expedition's powerboat; Tuesday, September 10, 1912. (See notes on Figure 4, p. 15.) Photo courtesy of Forsyth Library, Fort Hays State University, Kansas.

drainage basin filled with numerous glacial erratics (figure 3). Whether the bottle is in fact part of the 1912 AMNH camp garbage cannot be confirmed, but its evident antiquity and close proximity to the 1912 camp are suggestive. It is also possible that it derived from the original Stauffer homestead.

Several suggestions at the 2002 APS meetings that one of the Stauffer brothers salvaged wood from the *Mary Jane* and used this on their new homestead was followed up but without success. None of the various existing outbuildings on the abandoned farmstead appear to have been made from salvaged lumber, especially showing the thickness of the planks from which the scow was made. The new Stauffer farmstead was built shortly after WWI ended in 1918 and a member of the public saw the AMNH scow in 1924 (Sanders, 1924). The fact that the scow was seen then suggests most of it (or all) was still there in 1924. With the passage of time the scow's lumber would rot and become less attractive as a source of salvage materials.

Efforts to confirm one of the two wrecked rowboats (Tanke, 2002; fig. 3) discovered in the Morrin Bridge area as belonging to the 1910–1912 AMNH expedition are still ongoing. Additional archival pictures showing the AMNH rowboat are required to make further on-site comparisons.

The search efforts for the AMNH scow *Mary Jane* have now been put on hold, pending any future developments. It seems likely she is lost.

AMNH scow *Mary Ann* (used in the 1912 – c.1913 field seasons)

Another photograph in the Kansas collection

showed the second AMNH scow, the *Mary Ann*, allowing us our first glimpse of her up close (figure 4). As far as can be determined at this time, this is the only picture of her up close and alone. She is smaller than the *Mary Jane* and of more simple construction. Barnum Brown (in a letter to AMNH director Henry F. Osborn dated September 22, 1912) gives her length as 18 feet (about 5.5 metres), compared to the *Mary Jane's* 30 feet (about 9.1 metres) with a width of 8 feet (about 2.4 metres). The supports for the sweeps (tillers used to maneuver the boat while it is in motion) consist of two simple round pegs of heavy construction attached directly to the deck.

Prominent heavy wood rails along both sides help hold cargo in place.

Efforts to locate the *Mary Ann* have been renewed. She arrived in today's DPP sometime in mid-September, 1912 (but not after September 22nd) and not without incident.

A September 22, 1912 letter from Brown back to New York describes how, while being towed near Drumheller, she became stranded on a sand bar. After being pried off, the crew retired for the evening. Unknown to them, their prying efforts had strained some of the bottom planking, allowing serious leaks to develop. The next morning, before they could get dressed, she sank in about three feet (1 metre) of water. After repairs and drying out, the trip continued.

In the same letter, a sarcastic Brown renames the scow "Titanic" after the ill-fated passenger liner that sank with heavy loss of life some five months earlier. Between Drumheller and the town of Steveville (a largely vanished ghost town in today's DPP), the balky motorboat's engine again broke down and they had to float downstream the rest of the way.

After being in service for the 1913 field season, the *Mary Ann* was pulled ashore by Peter Kaisen on October 4 (Kaisen, 1913). He writes:

"We then broke camp and stored our stuff at Rumele's [*sic*]. Motorboat and rowboat hauled up [my emphasis] there too. Took *Mary Ann* out of the water and built a shed for the motorboat in the dark."

Barnum Brown confirms this in an end-of-the-season report (Brown, 1913):

“The camp equipage and motor boat were stored at the home of Mr. Louis Roemmele opposite Sand [Little Sandhill] Creek.”

This would put the scow on the north bank of the Red Deer River. The Dominion Land Titles website (www.archives.ca/02/02011102_e.html#top) indicate that Louis Roemmele (pronounced RUM-lee) and his wife Annie [Anne; Anonymous, 1968] owned land just north of the Red Deer River up on prairie level at SE and SW quarters, Sec. 19, Twp. 21, Rge. 11, W4M; NW quarter, Sec. 13, Twp. 21, Rge. 12, W4M and SW quarter, Sec. 24, Twp. 21, Rge. 12, W4M (figure 5).

Some of this property is slightly upstream from the mouth of Little Sandhill Creek. Kaisen’s comment about hauling the motorboat and rowboat “up” is in agreement with the Roemmele homestead being up on prairie level. These watercraft would have been stored there over the winter and spring for their protection from the elements and for security.

On the other hand, the virtually completed scow

Mary Ann was acquired free of charge so little money was tied up in her and she was probably too big and heavy to haul up and down from prairie level. It seems likely that the scow was pulled a short distance ashore, above the high water mark, as was the practice with the scow *Mary Jane* at the end of the 1910–1912 field seasons (AMNH field photographs).

Unfortunately, none of the Roemmeles’ parcels of land include river footage, so narrowing the search area as was done in the *Mary Jane* search (Tanke, 2002, this paper) will be more difficult. However, the western parcels of land formerly owned by the Roemmeles today show a major road which leads down to the east shore of Red Deer River in SW quarter, Sec. 14, Twp. 21, Rge.12, W4M, opposite from the mouth of One Tree Creek (small star in figure 5). This road (little more than a wagon trail then) was possibly used by the Roemmeles, allowing river access for water, game, firewood and recreation. This is land currently owned and homesteaded by the John and Lee Fryberger

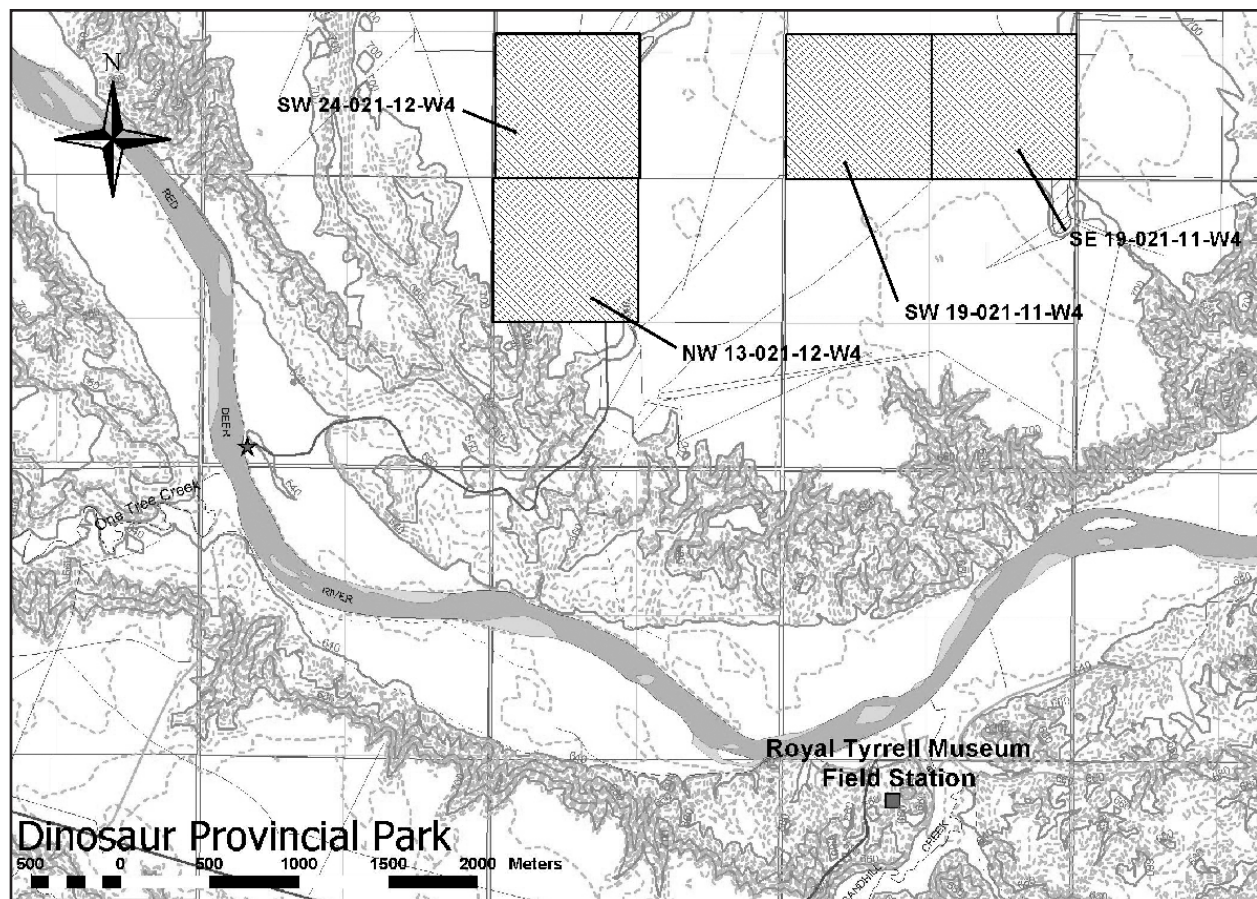


Figure 5. Map of the west-central region of Dinosaur Provincial Park, Alberta showing several locations as mentioned in the text. Land owned by the Roemmele family during the early 20th Century is indicated by cross-hatching. The small star across from the mouth of One Tree Creek marks the present location of the Fryberger homesteads; the AMNH crew may have left the scow *Mary Jane* at or close to this point.

families. If the powerboat and rowboat were beached here and then hauled on this road up the hill to the Roemmeles' home, then it seems likely that the *Mary Ann* was also pulled ashore at or near the same place.

John Fryberger, who has lived close to this spot since 1947 (Fryberger, 1967) was shown pictures of the *Mary Jane* and *Mary Ann* and asked if he had seen anything similar. He replied in the negative and suggested a spring flood may have carried her away. A quick reconnaissance by canoe along this stretch of river on June 30, 2002 and a ground reconnaissance by the author on October 19, 2002 were also negative, although the vegetation there was so dense and thorny as to make a thorough search impossible. The search for the *Mary Ann* has therefore also been scaled back pending new developments.

There is no mention of the *Mary Ann* being used in 1914, and Brown (1914) mentions "...storing the camp equipment and boat [presumably the powerboat] at Roemmel's [*sic*] ranch...".

Details of AMNH field activities in DPP during the summer of 1915 are very sketchy. That dutiful field note writer Peter Kaisen was not in DPP that summer and Brown, as usual, did not keep useful field notes. However, a letter from Brown to his superiors in New York City indicate that the team left DPP by horse and wagon, heading southeast to the United States. There is no mention of the *Mary Ann* or any of the other AMNH watercraft in this letter or in his end-of-the-season report for that year.

Her use in 1913 appears to have been limited to transporting plaster field jackets and some personal effects of Roemmele across the river on a few occasions. It seems doubtful she was used much (if at all) in 1914 and not at all in 1915. In these years, the AMNH crews moved away from the river and concentrated their activities in the core area of DPP and the South Sandhill Coulee region to the southwest.

The crew camped on land at the mouth of Little Sandhill Creek (1914) or on prairie (1915) about 8 kilometres (5 miles) east-northeast of the town of Patricia and transported crated fossils by wagon to the nearest railhead. In 1913, short exploration trips far downriver to an undetermined place simply identified as "Stapleton's Ranch" were conducted with the powerboat. Apparently this region is where the Dinosaur Park Formation thins out and becomes grass covered, far downstream from the Steveville Bridge, probably near where the present-day secondary highway 884 bridge crosses the Red Deer River north of Jenner.

With the powerboat available for short reconnaissance trips, railheads for crated field jackets nearby and the AMNH crew claiming the core area of the DPP badlands that was largely away from the river, the need for the scow was over. The *Mary Ann* was originally found floating past the AMNH camp in 1912, crewless and lost (Tanke, 2002). One wonders if the AMNH team, once they were done with her, similarly cast her adrift with the intentions that someone else far downstream would find and use her.

Two other AMNH watercraft (a rowboat and a powerboat) also arrived in DPP in 1911 and 1912 respectively. Their fates still remain undetermined. Fowler (1967, p. 325) records that the 1911 DPP crew's "equipment and boat engine" [*sic*—the motorboat arrived in 1912, not 1911] were left for the year with then Steveville store owner Egbert (Bert) O. Coultis. The rowboat was used in subsequent field seasons so its final movements and fate are unknown. Possibly the Roemmele family acquired it. Curiously, there is no mention of what became of the regularly used powerboat in Brown's 1915 end-of-the-season report. Letters from Brown to his superiors in New York do not discuss selling or disposing of this expensive (\$300.00 new in 1912) item.

An effort to relocate the Roemmele homestead and search for the rowboat and powerboat there was attempted. Like the Stauffer homestead near Morrin Bridge, the Roemmele homestead no longer exists. A survey of airphotos taken April 23, 1977 and showing lands previously owned by them were carefully studied for any signs of ruined buildings or basement foundations, but without success. The Sternberg (1950) DPP dinosaur quarry map, which also shows farm buildings, similarly does not show any buildings on the former Roemmele spread. The ruins of this homestead (consisting of little more than a filled-in and grassed over basement foundation and field stone outlines of major building structures) were relocated and examined on October 19, 2002 for any indications of Brown's boats, but again without success. According to longtime local resident John Fryberger who showed us the spot, the house and other wood objects were probably broken up for fuel long ago.

Attempts to relocate the scows and other watercraft used by the various GSC expeditions upriver from Drumheller and in DPP have not been attempted to date.

New Historical Scow(?) Discovered

An old boat, possibly a scow, was discovered on

the banks of the Red Deer River on May 18, 2002. This was found by members of the 24th Parkallen Scout group who were canoeing about a day's trip below their home city of Red Deer, AB. More details on this watercraft will be presented elsewhere if deemed necessary. Unfortunately it was not photographed. If it is indeed a scow, it is not one of the scows we are looking for, but its construction details will be most useful for a planned rebuilding of a scale replica of the *Mary Jane* and an upcoming 100th anniversary reenactment of the AMNH expedition (Tanke, manuscript b).

Conclusions

Despite the apparent loss of the *Mary Jane* and *Mary Ann*, some valuable historical information and insights have resulted from this small ongoing project. The following results have been achieved thus far:

- Previously, no one had ever actively sought out these watercraft. After a rigorous search effort with the limited information at hand, we now know that the scows are probably lost; neither was found at their known (*Mary Jane*) or suspected (*Mary Ann*) last positions.
- Previously scattered historical information on the 1910–1915 AMNH expeditions in Alberta are now better understood.
- Information on some of the local citizenry (Morrin Ferry and DPP area) of that time period, and who had contact with the AMNH crew has been gathered (Tanke, 2002; this paper).
- The location of the original Morrin Ferry, heretofore not accurately defined in palaeontological literature, was established. This location was often used as a geographical reference point by the AMNH and other subsequent palaeontological expeditions to describe the whereabouts of their dinosaur quarries in the region. The old Morrin Ferry approach road, on the east side of the Red Deer River at UTM 12U 0368841; 5723836 (WGS 84) is today a popular fishing spot.

This locality knowledge, combined with archival photographs for field comparisons, will help in the relocation of otherwise “lost” dinosaur quarries, excavated but not properly documented 70–90 years ago (Anonymous, 1998; Tanke, 1999, 2001; Tanke *et al.*, 2002).

Hopefully these sites will one day be mapped with advanced GPS technology (*sensu* Pryor *et al.*, 2002) and this information made available to current and

future earth scientists.

- The exact whereabouts of the original Alexander Stauffer and Louis Roemmele homesteads, also lost to history, have been established (Tanke, 2002, fig. 2a).
- The exact spot where the AMNH scow *Mary Jane* and a rowboat were pulled ashore for the last time in 1912 have now been confirmed and possible camp garbage found close by, identified (Tanke, this paper; fig. 2).
- A “then and now” historical photograph pair of the above spot has been made possible (figure 1a–b, c).
- First field activities by the AMNH into today's DPP have been detailed.
- Details of the not always friendly working relationship and movements between the AMNH crew and competing Sternberg family in the Drumheller Valley and DPP regions are better understood.
- The possible discovery of an old scow and the bringing together of the many widely scattered pictures of the *Mary Jane* and *Mary Ann* will help facilitate construction of a new 1:1 scale replica scow for a planned reenactment float down the Red Deer River (from the city of Red Deer to the Jenner Bridge downstream from DPP). This activity is planned for the 100th anniversary of the launching of the *Mary Jane* on August 3, 2010 (Tanke, manuscript b).
- Invaluable new contacts have been made with local residents. They have been made aware of the project and educated on the history of the early dinosaur collecting activities on their properties.
- Readers like you have been made aware of a poorly documented aspect of Alberta's palaeontological heritage.

Notes on the Figures

Figure 1b. The exact date of the photo is unknown, but it must have been taken between noon October 17 (when the scow was beached) and October 20 (when camp was packed up).

The men in the picture are unidentified. The one on the left appears to be AMNH technician Peter Kaisen. Kaisen's field notes state that George Sternberg and he were left behind to finish quarries and close camp while Barnum Brown and AMNH technician George Olsen headed downstream to today's Dinosaur Provincial Park.

As George Sternberg took this photograph, the identity of the other man on the right is therefore

probably Bob Reid, a local resident who lived 11.5 km. NW of Rumsey, AB (SE1/4, Sec. 12, Twp. 34, Rge. 22, W4M). He was hired on that summer as a cook (Hodge, 1982, p. 580). Reid went on to become a valued cook/field assistant in DPP under Brown in the 1913-1914 field seasons.

Figure 3. The artifact is made from clear glass and shows no surface patina. Ruler is scaled in centimetres. The cork stopper is modern. The bottle appears to have been specifically designed to lie on its side. The bottom of the small diameter base bears the raised number “71”. The side of the bottle bears the inscription:

Prepared by
Dr. Peter Fahrney & Sons C.
CHICAGO, ILL. U.S.A.

It is unknown whether this bottle was shipped to a pharmacy in Alberta, or was brought to the badlands by a Chicago-based paleontological crew member. If the latter, it would be from the 1922 Chicago Field Museum expedition and be the first clue that they were active in this remote part of Dinosaur Provincial Park.

Figure 4. The AMNH scow *Mary Ann* being towed by the expedition’s powerboat; Tuesday, September 10, 1912. On that date, Barnum Brown and George Olsen left camp and headed in these boats for DPP, far downriver, to begin field operations there (Kaisen, 1912).

The same summer, the competing Sternberg family began field work in Drumheller. No doubt Brown (who had seen the fossil-rich DPP the previous fall) felt the need to establish operations in DPP before the Sternbergs did.

In this picture, AMNH technician Olsen waves goodbye. The crew left behind tried to play a trick on the departing pair. In his field notes Kaisen writes: “We had some fun with a bad ham we tried to put in with Brown’s stuff. We got it in, but George Olsen found it and threw it ashore.” Brown (in a letter to AMNH director Henry F. Osborn dated September 22, 1912) states that he operated the powerboat and Olsen the scow. Another photograph of these boats together appears in Colbert (1968: plate 71). Photograph by George F. Sternberg.

Acknowledgements

As is usually the case with historical research projects, people from far and wide and of widely differing backgrounds have provided critical information and support. The author thanks Patty Nicholas, Forsyth Library (Fort Hays State University, Fort Hays, Kansas) for providing figures 1a and 4. Lance and

Natasha Tanke (Drumheller, Alberta) provided field assistance. Patty Ralrick (Bellevue, Nebraska) reviewed the manuscript. Kevin Kruger assisted with digitizing the photos. The late Vernon Riggs (Morrin, Alberta) provided much encouragement and valuable research information when this project first began. Sadly, he passed away just one day after the author presented his findings at the 2002 APS meetings.

Richard Bramm (Edmonton, Alberta) reported the discovery of the old scow(?) located in May 2002. John Fryberger (Wardlow, Alberta) provided historical information, showed the author the ruins of the Louis Roemmele homestead and allowed access onto his land. Jason Humber (formerly BP Canada Energy Company, Calgary, Alberta) prepared figure 5. A final thank-you to all of those who have offered useful suggestions and words of encouragement as this project proceeded.

Finally, we should also acknowledge George F. Sternberg, who had the presence of mind and foresight to take the many pictures he did during his field activities in Alberta, thereby leaving us this priceless historical legacy.

Bibliography

- Adams, G., Forsman, M.R.A. and Minni, S.J. 1977. Archaeological investigations: Writing-On-Stone N.W.M.P. post. Alberta Culture, Historical Resources Division, Historical Sites Service, Occasional Paper No. 4: xiii + 356 p.
- Anonymous. 1968. The Foster Clan. p. 322–325. *In*: Bridging the years—Carmangay and district. Southern Printing Co. Ltd., Lethbridge, Alberta.
- _____. 1998. Lost dinosaur quarry rediscovered. *Trilobite Tales*, v. 15, no. 1, p. 8. Western Interior Paleontological Society, Denver, CO.
- Ashby, R. 1999. Imax Presents: T-REX Back to the Cretaceous. Scholastic, New York. 51 p.
- Bown, S. 1998. The great Canadian dinosaur rush. *The Beaver*, April–May, p. 17–22.
- Brown, B. 1913. Annual report for the year 1913 expedition to the Cretaceous of Alberta, Canada. Unpublished report on file at Royal Tyrrell Museum of Palaeontology library, 9 p.
- _____. 1914. Annual report for the year 1914 expedition to the Cretaceous of Alberta, Canada. Unpublished report on file at Royal Tyrrell Museum of Palaeontology library, 9 p.
- Chopping, G.C. 1978. Bottles of the Canadian prairies. D.W. Friesen & Sons Ltd. Altona, MB. 403 p.

- Colbert, E.H. 1968. Men and dinosaurs. E.P. Dutton & Co. Inc., New York. xvii + 283 p.
- Fowler, R.L. 1967. The fossil hunters. p. 325–326. *In*: This is our land. Volume 1—A centennial history. Edited by James E. Blumell. Cessford, AB.
- Fryberger, J. 1967. John Fryberger. p. 304–305. *In*: This is our land. Volume 1—A centennial history. Edited by James E. Blumell. Cessford, AB.
- Hodge, B.M. 1982. Guy and Zena Reid. p. 580. *In*: Pioneer days, book two—Rumsey-Rowley. Edited by B.M. Hodge. Rumsey-Rowley Historical Society, Rumsey, AB. xii + 775 p.
- Hunt, C.B. 1959. Dating of mining camps with tin cans and bottles. *Geotimes*, v. 3, no. 8, p. 8–10, 34.
- Kaisen, P.C. 1912. Field notes. Photocopy on file at Royal Tyrrell Museum of Palaeontology (Drumheller, AB) library.
- Kowal, W. 1992. Archaeological investigations at historic waterhole. Provincial Museum of Alberta, Archaeological Survey, Occasional Paper No. 34: xxii + 306 p.
- Michard, J.-G. 1992. The reign of the dinosaurs. Harry N. Abrams, Inc., New York. 143 p.
- Preston, D.J. 1986. Dinosaurs in the Attic—An excursion into the American Museum of Natural History. St. Martin's Press, New York. xii + 244 p.
- Pryor, R., Tanke, D.H., Currie, P.J., Spencer, B. and Humber, J. 2002. Mapping of Late Cretaceous vertebrate localities in Dinosaur Provincial Park, Alberta using the Global Positioning System—an update. p. 39–41. *In*: Alberta Palaeontological Society, Sixth Annual Symposium, Abstracts Volume. H. Allen (ed.). Mount Royal College, Calgary, AB. January 26–27, 2002.
- Rock, J.T. 1984. Cans in the countryside. *Historical Archaeology*, v. 18, no. 2, p. 97–110.
- Russell, L.S. 1966. Dinosaur hunting in Western Canada. Royal Ontario Museum, Life Science Contributions, No. 70. 37 p.
- Sanders, L. 1924. Hunting for pre-historic game through the bad lands of the Red Deer River. *Rod and Gun in Canada*, August, p. 161–162, 197–199.
- Sternberg, C.M. 1950. Steeveville west of the 4th Meridian, with notes on fossil localities. Geological Survey of Canada, Map 969A. Scale 1:31,680 (1 inch to 0.25 mile).
- Stevens, G. 1967. Canadian glass c. 1825–1925. The Ryerson Press, Toronto. xiv + 262 p.
- Sutton-Smith, P. and Sutton-Smith, B. 1999. Unitt's bottles & values & more. Fitzhenry & Whiteside, Markham, ON. 311 p.
- Tanke, D.H. 1999. Relocating the lost dinosaur quarries of Dinosaur Provincial Park, Alberta, Canada. (Abstract). *Journal of Vertebrate Paleontology*, v. 19, no. 3, p. 80A.
- Tanke, D.H. 2000a. Sardine tins and old dinosaur quarries in Alberta, Canada. Online October 1, 2001 at: www.cmnh.org/fun/dinosaur-archive/2000Jan/msg0001.html
- _____. 2000b. Mystery human artifacts in old dino quarries. Online October 1, 2001 at: www.cmnh.org/fun/dinosaur-archive/2000Aug/msg00122.html
- _____. 2001. Historical archaeology: Solving the mystery quarries of Drumheller and Dinosaur Provincial Park, Alberta, Canada. p. 70–76. *In*: Alberta Palaeontological Society, Fifth Annual Symposium, Abstracts Volume. H. Allen (ed.). Mount Royal College, Calgary, AB. January 20, 2001.
- _____. 2002. The Hunt for *Mary Jane*: Search for the lost fleet of the 1910–1915 AMNH palaeontological expeditions to Alberta, Canada. p. 56–62. *In*: Alberta Palaeontological Society, Sixth Annual Symposium, Abstracts Volume. H. Allen (ed.). Mount Royal College, Calgary, AB. January 26–27, 2002.
- _____. manuscript a. Discovery of pre-WWII paleontological field crew staging areas and fieldcamps in Dinosaur Provincial Park, Alberta, Canada.
- _____. manuscript b. The 100th anniversary of the American Museum of Natural History paleontological expeditions to Alberta, Canada (1910–2010): Planned scow reconstruction and commemorative reenactment.
- _____, Hernes, N.L. and Guldberg, T.E. 2002. The 1916 sinking of the SS *Mount Temple*: Historical perspectives on a unique aspect of Alberta's palaeontological heritage. *Canadian Palaeobiology*, no. 7, p. 5–26.
- Toulouse, J.H. 1971. Bottle makers and their marks. Thomas Nelson, Inc., New York. 624 p.
- Wallace, J. 1994. The American Museum of Natural History book of dinosaurs and other ancient creatures. Simon & Schuster, New York. 144 p.
- Walters, M. 2000. Old photos may hold clues to Tyrrell's mystery quarries. *Alberta Connections*, v. 5, no. 3, p. 7. (Also found online May 10, 2002 at: www.albertaheritage.net/news_views/mystery_quarries.html).

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2002 Field Trip Report

Zortman, Montana, USA
August 16 – 18, 2002

by Geoff Barrett, photos by Keith Mychaluk

The historic town of Zortman is situated in north central Montana, amidst the scenic Little Rocky Mountains. The town, named after Pete Zortman, an early entrepreneur, came into being when gold was discovered in 1884. The town was well known to several notorious outlaws of the time, including Butch Cassidy and the Sundance Kid, both members of the infamous Kid Curry Gang (alias “The Wild Bunch”), whose ranch is close by, now under private ownership.

Mining operations have changed hands several times, and in recent years have ceased production altogether. Currently, a major reclamation effort is underway in an attempt to clean up the results of decades of lax pollution controls.

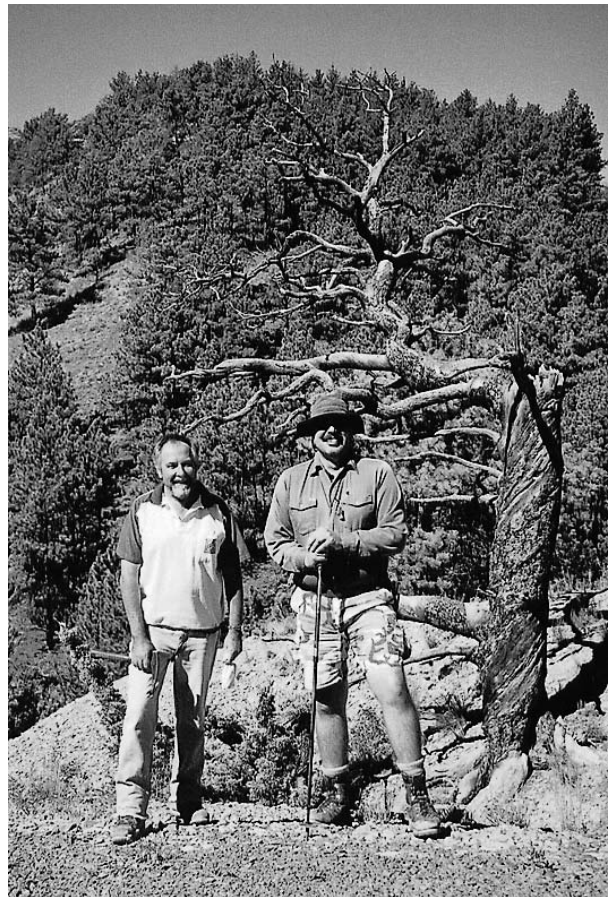
Geologically, the Little Rocky Mountains were formed as a result of a large laccolithic intrusion, which domed the overlying sedimentary rocks. Subsequent erosion has uncovered the igneous core (the source of the gold), and provided excellent stratigraphical sections through the surrounding sedimentary structures. The impressive cliffs enclosing the town are of Mission Canyon limestone (Mississippian), which is typified by numerous caves and solution cavities. Surrounding the Mission Canyon limestone are rocks of Jurassic and Cretaceous age.

Day one of the Zortman field trip saw 14 APS members assembled outside the Zortman jail, under a sunny sky. The party made their way on foot to the first of several outcrops of marine Jurassic origin. These exposures consist of highly fossiliferous marly limestones and shales of the Rierdon and Swift Formations, and contain a typical Jurassic marine fauna, including ammonites, belemnites, pelecypods and, rarely, marine reptile remains. Fossils were abundant and many representative specimens were collected. Of particular interest at this site is the occurrence of small pyritized ammonites, many of which were collected. As yet, these are unidentified, but it is hoped

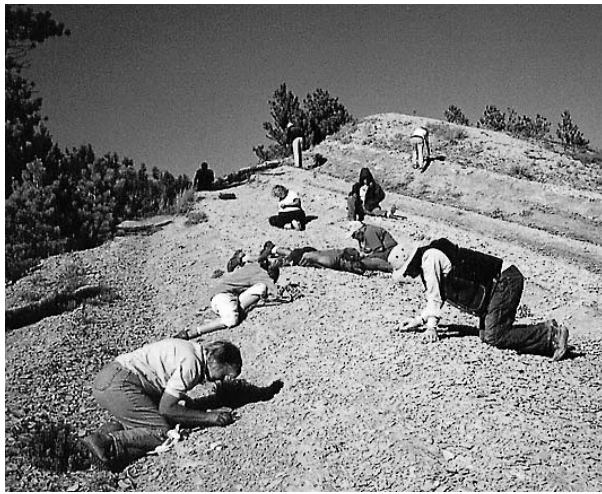
that with some forthcoming professional involvement, this situation will be rectified—stay tuned. A sudden brief but vigorous rainstorm sent everyone scurrying for shelter, but collecting soon resumed.

The party then proceeded to the next exposure and were immediately hit with yet another storm, this one more violent in nature, accompanied by hail, strong winds, pyrotechnics and a dramatic drop in temperature. At this point several members decided to return to the trailers, the more (fool)hardy opting to continue. Sheltering under a tree, holding a steel rock hammer, with lightning flashing all around does tend to instil a sense of vulnerability; the words “lightning rod” spring to mind.

Specimens of well preserved, articulated *Gryphaea* were collected, but because of the intensity of the storm it was decided to call a halt to the day’s activities before anyone succumbed to the effects of hypothermia. The weather conditions experienced on this day must rate as the most extreme ever encountered on an APS field trip.



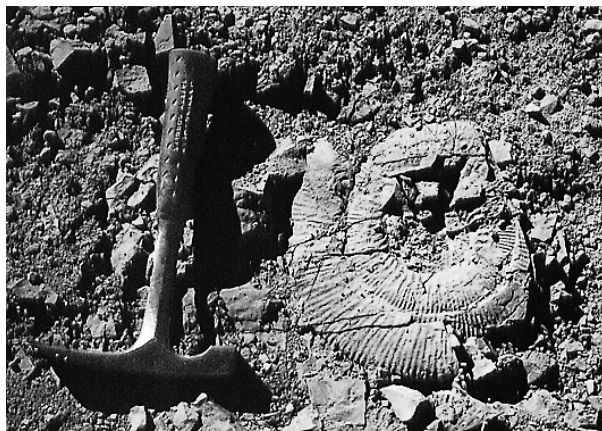
Field trip leaders Wayne Braunberger (right) and the author, at Morrison Dome.



Hunting the elusive star-shaped *Pentacrinus* ossicles at Star Hill.

Day two dawned with the promise of hot weather, which is far more typical for this area. The party left Zortman in a small convoy of 4-wheel-drive vehicles and headed southwest to Morrison Dome, only accessible under dry conditions. Here, as a result of complex faulting, the Jurassic Rierdon and Swift Formations are once again well exposed, along with the Mosby Sandstone Member of the Warm Creek Shale, which is Cretaceous in age.

The party made their way to the top of Morrison Dome, which affords a spectacular view of the surrounding area. Here, the Rierdon and Swift Formations are well exposed and again, are richly fossiliferous. The members descended via a dry creek which had cut through the succession and were rewarded with some excellent specimens, including several ammonites. The belemnite *Pachyteuthis* is abundant, along with the pelecypod *Gryphaea*, which is frequently exposed as an extensive coquina.



An unidentified Jurassic ammonite at Star Hill.

The Mosby Sandstone (Cretaceous) occurs as a low ridge outcropping to the northeast of Morrison Dome. The sandstone contains numerous limestone lenses that are crowded with the gastropod *Pseudomelania hendricksoni*, along with bivalves including *Inoceramus* and *Ostrea*. An as yet unidentified ammonite was also collected.

The day's activities were rounded off by a side trip to one of the localities that we were unable to visit on the previous day owing to the weather conditions. This site is known locally as "Star Hill" due to the presence of the star-shaped columnals of the crinoid *Pentacrinus*. Finding these "stars" is a hands-and-knees operation, and here the keen eyesight of the younger members gave them a definite advantage, and with the condescending smugness of youth, which every parent knows so well, they filled plastic vials with this elusive fossil. And, yes, they did share their bounty! The site also contains a variety of well-preserved bivalves and large (but fragmented) ammonites (unidentified).

Day three saw a somewhat depleted group take the short, but impressive, drive through Mission Canyon, the type-locality of the Mission Canyon limestone, situated at the town of Hays, northwest of Zortman. Here, the cavernous nature of the limestone is displayed in a spectacular manner. At the entrance to the narrow, vertical walled canyon is a magnificent example of a natural bridge, whilst a little further into the canyon is another beautiful example, accompanied by a "hole-in-the-wall" feature. This point marked the official end to another successful APS field trip.

Wanted!

Field trip photographs/slides of APS Trip #95-2, Bassano Alberta, which took place on July 15, 1995. If you attended this trip and have any photographs or slides, I would like to borrow them for a short time. All will be returned. I am assembling a report on this trip and would like to illustrate it with photographs.

For further information, contact Wayne Braunberger at (403) 278-5154 or by email at events@albertapaleo.org.

-Thanks!

Update on the Fossils of Barachois

by Steven Coombs

Well, it has been quite a busy summer for me, and the reason that I'm writing this article is to share with you what has been happening since I wrote my first article back in September of 2001. This summer has been very generous to me at my fossil quarry. I was able to gather more information, plus some new specimens. Over all it wasn't a summer that has beaten others in amount of specimens, but it still was very good.

At the beginning of the summer I was able to take some pictures (the photo below was taken before this summer).

The total amount of specimens that I collected would be approximately 63, which was not that bad, but the weather did not permit most of the time. I found 62 corals and 1 trilobite (I found some other

fossils elsewhere, which won't be discussed here).

The trilobites are definitely the rarest, but the most interesting part of this summer was finding a new tabulate coral. This new one is very different from all the others; the coral has a surface with a unique pattern not seen before at the quarry. The corallite columns appear to be crossed and end in a circle, just like an orange cut open. This is the very first time that I have actually seen this, and hope in the future that I find more.

I've also been able to visit Miguasha Park, about 350 km southwest from Barachois [*see Bulletin, September 1994, p. 6 -ed.*]. When I got there the place looked more like a construction site—new stuff is coming—and I took a lot of pictures. I will discuss my visit with you all in the next issue.

The websites that I listed in my last article have been changed to my main website and the links below. So this is all for now, hope everyone had a splendid summer!

Steven Coombs is a student in Barachois, Quebec.

His website:

Steven's Dinosaurs

<http://stevensdinosaurs1.tripod.com>

See also "Mesozoic Time":

<http://clubs.yahoo.com/clubs/mesozoictime> □



View of APS member Steven Coombs' happy hunting ground at Barachois, Quebec.

Proposed Field Trip Changes

by Wayne Braunberger, Events Coordinator

Vehicles

The number of vehicles on APS trips has become problematic in some cases. In particular, trips involving roadside stops and trips to difficult/private access localities have limited space for large numbers of vehicles. In order to reduce the risk of accidents or damage to land the use of private vehicles on certain trips will be limited.

Carpooling is one option that has worked with limited success on many trips. The second option is the increased use of rental vans. This adds an increased cost to participants (the reduced wear and tear, sharing of fuel costs, etc. may actually be cheaper to participants than operating a private vehicle); however vans may be the most effective method of transportation on some trips.

Registration

In order to more effectively organize and run trips two significant changes are proposed to current field trip procedures.

The number of participants on a trip may be limited. This will depend on access to the sites and the type of trip being run. There are many excellent locations to visit, but some sites are small and can accommodate only a few people. In addition, the logistics of organizing and transporting large groups of people are immense.

Deadlines for registration and drop dates will be rigorously adhered to. This will enable better planning of trips and allow for the timely printing of guidebooks. In order to better plan trips a strict deadline for registration will be imposed. At the time of signup you must submit the appropriate fees. You will not be considered on the trip unless your fees are paid in full. After the deadline no more registrations will be

accepted. After the drop date your fee will not be refunded (you will receive the guide book).

Cost

Field trips are to be run on a cost recovery basis. At the present time a \$5.00 fee is levied to cover the cost of guidebook production. This fee may increase depending on printing, vehicle, or tour fees.

Guidelines/Ethics

We will be developing a code of ethics for conduct on field trips.

To comment, please contact Wayne Braunberger, at the address below. Written comments are preferred. A final version of the changes to field trip policy will be printed in the March 2003 *Bulletin*. [*Deadline is February 15, 2003 -ed.*]

Wayne Braunberger
544 Queensland Place S.E.
Calgary, Alberta
T2J 4T3
Email: events@albertapaleo.org

APS 2003 Field Trips

Three field trips are planned for this summer. For more information please contact Wayne Braunberger at (403) 278-5154 or by email: events@albertapaleo.org. All dates are **firm**. Full details for all trips will be published in the March *Bulletin*. Information will also be available on the Society's website:

www.albertapaleo.org and 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.

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 2003-1: Red Deer River Badlands Drumheller, Alberta Saturday & Sunday, June 21 – 22, 2003

This trip is still in the planning stages. At this time the trip is anticipated to be a combination of roadside stops and short hikes to various sites in the valley between East Coulee and the Morrin Bridge. Full details of the itinerary will be published in the March *Bulletin*.

Accommodations

As with all APS trips accommodations are the responsibility of trip participants. Numerous motels/hotels and campgrounds are available in the Drumheller area.

Driving Conditions

Allow at least 1.5 hours driving time from the Calgary city limits to Drumheller. Travel will be on pavement with short stretches on gravel and trails.

Potential Hazards

Red Deer River, steep slopes, sinkholes, falling rocks, ticks.

Cost

\$5.00 per field guide. There is no attendance limit. **The registration deadline is June 14, 2003.**

Trip 2003-2: Nordegg Area, Alberta Saturday & Sunday, July 19 – 20, 2003

Day 1: Saturday, July 19, 10:00 A.M.

Meet at the David Thompson Resort, which is located on the south side of Highway #11. We will then carpool to the Cline River. Excellent exposures of the Devonian Flume, Perdrix, Mount Hawk, and Southesk Formations occur along the banks of the Cline River and the flanks of Mount Stelfox.

Day 2: Sunday, July 20, 10:00 A.M.

Meet at the Saunders Creek campground, which is located on the south side of Highway #11. We will then hike to a post-Cretaceous plant locality. Please note that the hike to the locality involves a short but steep climb.

Accommodations

Motel accommodation is available at the David Thompson Resort and Nordegg. A full service campground is also available at the David Thompson Resort and there are numerous forestry campgrounds in the area.

Driving Conditions

Allow at least 4 hours to drive to the David Thompson Resort. Travel will be on paved roads with very short stretches of gravel.

Potential Hazards

Cline River, steep slopes, falling rocks, bears.

Cost

\$5.00 per field guide. There is no attendance limit. **The registration deadline is July 12, 2003.**

Trip 2003-3: Canyon Creek-Moose Mountain, Alberta Saturday, August 16, 2003

One of the classic field trips in the Calgary area, last visited by the Society in the early '90s, the access road has been closed to private vehicles for the last several years. Excellent exposures of the upper Exshaw, Banff, Mount Head, and Fernie Formations will be visited on this trip. **Due to the limited access, transportation will be by rental van. No private vehicles will be permitted.**

A short but steep climb up a scree slope will be undertaken to examine the Banff Formation. The rest of the sites require a moderate amount of hiking.

Driving Conditions

Travel will be by rental van.

Potential Hazards

Steep slopes, falling rocks, bears, sour gas.

Cost

\$5.00 per field guide. \$10.00 per person for transportation. There is no attendance limit for the trip, however the number of participants may be limited by van size. **Please sign up early. The registration deadline is August 1, 2003.** □

Highlights of the 2002 SVP Conference in Oklahoma

by Mona Marsovsky, with a report by Les Adler.
Photos by Vaclav Marsovsky

The Society of Vertebrate Paleontology conference held October 9–12, 2002 in Norman, Oklahoma attracted over 800 participants from all over the world, including USA, Mexico, UK, Germany, France, Brazil, Argentina, Korea, Japan and many other countries. Canada was well represented by professors and students from the University of Alberta, University of Calgary, University of Saskatchewan, Royal Tyrrell Museum, Royal Ontario Museum, the Canadian Museum of Nature and by several APS members.

The Wednesday symposia included five sessions:

1. *Recent Advances in the Origin and Early Radiation of the Vertebrates.*
2. *200 Years of Vertebrate Paleobiology*—Richard McCrea of the University of Alberta helped organize this tracksite symposium.
3. *Preparators' Symposium.*
4. *Origin, Timing and Relationships of Major Extant Placental Clades.*
5. *The Continental Permian.*



The author examines a phytosaur skull (Triassic) in the Sam Noble Museum, Norman, Oklahoma, host city of the 2002 SVP Conference.

Most sessions of Wednesday's symposia included a short poster session.

The conference began formally on Thursday. To fit in all of the presentations over the three days of the conference, there were usually two simultaneous sessions, with each speaker constrained to a maximum of fifteen minutes. There were so many posters that they were divided into two different sessions (one on Thursday and one on Friday).

The annual auction (the 20th held to date) raised US \$17,300. for outreach and education. Dr. Richard Fox of the University of Alberta was awarded an SVP honorary life membership. Over his 40-year career, Dr. Fox has supervised twenty PhD students and three postdoc fellows. He has also been the editor of the *Journal of Vertebrate Paleontology* for many years.



Day two of the post-conference field trip: a vertebrate fossil site in the Permian badlands northeast of Frederick, Texas.

Before the conference began, participants chose from the following three-day field trips:

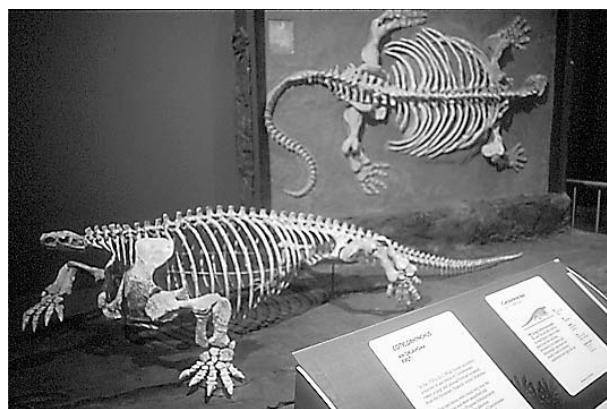
1. *A Guide to Tracking Dinosaurs in "No Man's Land": Mesozoic Tracksites from the Tri-State Area of Colorado, Oklahoma and New Mexico.*
2. *Cretaceous Vertebrates of SE Oklahoma, SW Arkansas and NE Texas.*
3. *Clarendonian and Hemphillian Vertebrate Faunas from the Ogallala Formation (Late Miocene - Early Pliocene) of the Texas Panhandle and Adjacent Oklahoma.*

The Cenozoic trip went to the type locality of the Hemphillian fauna and the type localities for the Clarendonian fauna in the Texas Panhandle (near Amarillo). Our group of 34 visited overgrown quarries that have not been worked for decades. The quarries had produced dozens of skeletons of large terrestrial mammals. In the MacAdams quarry, they found over

100 skulls of *Hipparion* (one of the 11 species of horses living at that time).

The post-conference 3 day tour took 21 participants to southwestern Oklahoma and north-central Texas to explore the quarries of Permian vertebrates and plants. Our group visited the classic localities of the Permian land fauna that have produced *Dimetrodon*, *Eryops*, *Diplocaulus* and the type specimen of *Seymouria*. Shark teeth, coprolites, amphibian and reptile vertebrae, shark spines and skull parts were abundant. One of the more productive sites was the spoil pile next to Charles Sternberg's quarry, which was last worked in the early part of the last century.

A copy of the field trip guides for these trips is in the APS Library. –*Mona Marsovsky*



Cotylorhynchus romeri—a terrestrial, herbivorous synsapsid reptile with peg-like teeth and massive gut. Permian, Cleveland County, Oklahoma. On display at the Sam Noble Museum, Norman Oklahoma.

SVP Field Trip No. 2, October 6–8, 2002: Cretaceous Vertebrates of Southeast Oklahoma, Southwest Arkansas and Northeast Texas, led by Jeff Pittman of Beaumont, Texas and Dr. Gordon Bell, Salt Flat, Texas.

Dr. Wann Langston provided a lengthy and excellent introduction to the history of Oklahoma while the trip passed over Palaeozoic outcrops in central Oklahoma on the way to the McCleod Prison in Atoka County.

Here everyone signed in and surrendered his or her driver's licence, to be returned after a visit to two sites within the prison grounds. The sites have produced spectacular Early Cretaceous hypsilophodont, sauropod and theropod dinosaur material, found by one of the wardens.

We prospected the two sites, but very little—if anything—was found. A large collection of the original

material and some copies were brought along to be handled and photographed.

Later that day the tail end of a hurricane produced a dramatic thunderstorm and heavy rain in the Ouachita Mountains and at Mena, Arkansas; this, combined with the fact that our bus was not mechanically perfect, made for an interesting trip.

On the second day a stop was made at Caddo Gap to examine a Palaeozoic rock outcrop and then on to the Crater of Diamonds State Park at Murfreesboro, where a pleasant stay provided no diamonds but plenty of mud and rock samples, photo opportunities and a museum and gift shop.

The next two stops were at gypsum mines. One abandoned mine produced satin-spar gypsum samples, marine Cretaceous gastropods, pelecypods and worms. The other site, at the Briar Plant Quarry, the world's largest open-cut gypsum mine, was not accessible. It contains extensive sauropod trackways, investigated by Dr. Pittman. A block of footprints from the mine was on display in a park at Nashville, Arkansas, where our group was treated royally and our biographies printed in the local newspaper.

After a quick stop at Old Washington, a historical location involved in the American Civil War, we stayed overnight at Texarkana. Near here a large sample was taken from a creek to be screen-washed at the University of Oklahoma. I found a shark's tooth here.

On the third day—in sustained, heavy rain—the trip proceeded to the North Sulphur River near Ladonia, Texas, a well-known and productive fossil site. Very little mosasaur material was found this day, but I did find shark's teeth, large Cretaceous pelecypods and several pieces of *Baculites*.

Thick mud, extensive pools of water and heavy rain made collecting arduous and messy. (Yes, I *have* endured worse conditions—in the United Kingdom, northwest of London). The trip eventually returned to Norman, Oklahoma, where the conference was about to begin. –*Les Adler* □

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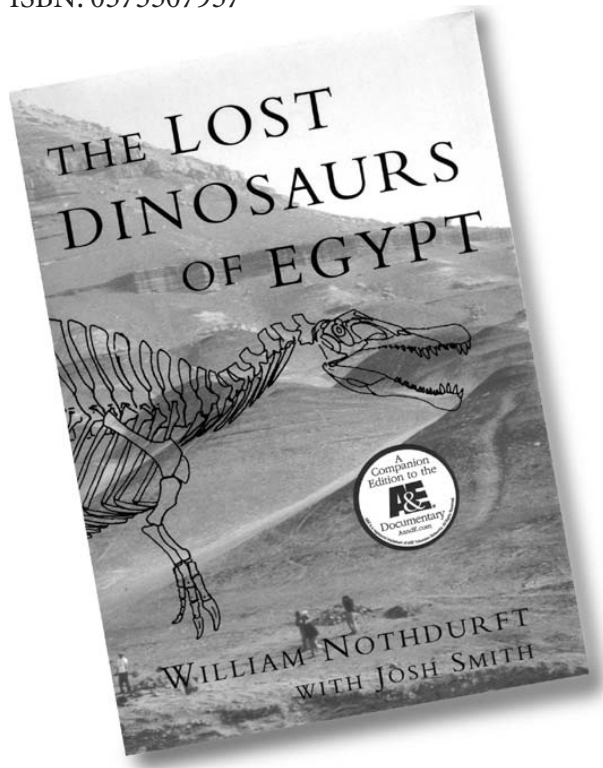
Reviews

The Lost Dinosaurs of Egypt

by William Northdurft with Josh Smith and others, published by Random House.

Hard cover, 239 pages, \$37.95.

ISBN: 0375507957



Review by Vaclav Marsovsky

As the title of the book implies, this is a story of the dinosaurs that were lost during the bombing of Munich, Germany in 1944 and of the expedition that took place nearly 90 years later in search of these same exotic creatures in just as exotic terrains. The book is made up of three parts that are intertwined together.

The first part describes the historical events during World War 2, leading up to the bombing of Munich. This led to the demise of the paleontological collections of Dr. Ernst Stromer housed in Munich.

Part Two documents the expeditions of Dr Ernst Freiherr Stromer von Reichenback into the Bahariya Oasis in the Western Desert of Egypt during the years 1910 and 1911. He came in search of mammals but found dinosaurs instead. This section of the book brings us excerpts from Stromer's journals and the

author enhances this section by describing the logistics and the conditions around mounting such an expedition in the early part of the last century—an expedition that preceded the motorized vehicle.

During Stromer's expeditions, remains of *Aegyptosaurus* (sauropod) and *Spinosaurus* (large theropod) along with a whole community of marine and non-marine animals were found. The explorations took place near a conical hill called Gebel el Dist in the Bahariya Oasis. Stromer's helper was a man named Richard Markgraf who was also hired in subsequent seasons to carry on without Stromer.

The third part is a dinosaur hunting story. The story is about a group of PhD students from the University of Pennsylvania pursuing a dream.

The now famous Bahariya Dinosaur Project began with a brief reconnaissance during the winter of 1999, where bones were found lying on the surface of the ground in the Bahariya Oasis. Having raised much excitement, the next step was to raise funds for the expedition and make international agreements with the Egyptian scientific community and government bodies.

Full-blown exploration and excavation seasons lasting several weeks were conducted during the winters of 2000 and 2001. Approximately half of the book is dedicated to the Bahariya site work. This part of the book covers prospecting, excavation and collection. The excavators frequently try to guess what it is they are unearthing as they excavate.

The expedition had to deal with the usual problems that plague these kinds of expeditions; sandstorms, dysentery and extremely fragile bones that literally explode as soon as you touch them.

One of the expedition sedimentologists, Dr. Ken Lacovara, does a nice job of describing the geology and the paleo-environment. This part of Africa was a coastal plain during the Cenomanian, 99 million years ago (first age of the Late Cretaceous).

There were two mysteries raised by the authors and solved by the end of the book. The first is how and why three gigantic predators, *Spinosaurus*, *Carcharodontosaurus* and *Bahariasaurus*, co-existed in the same environment.

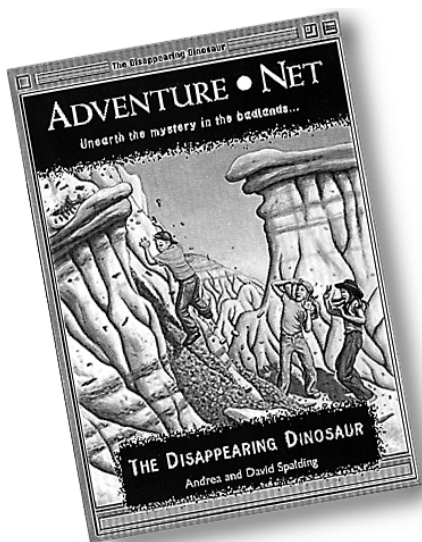
The second riddle was in the sedimentology. There was a troublesome unconformity in the sediments that bothered the sedimentologists. The sea floor appeared to be migrating landward, but the intertidal sediments seemed to be advancing *into* the marine zone—a sedimentological paradox.

The climax of the discoveries was the unearthing

of an immense humerus (upper arm bone) of the second largest sauropod in the world, which made the headlines. This has since been identified as a new genus and named *Paralititan stromeri* after the paralic (tidal) sediments and Stromer, in dedication to the great but little known German Paleontologist.

The Disappearing Dinosaur

by Andrea and David Spalding,
published by Whitecap Books.
Paperback, \$8.95.
ISBN: 155285311X



Review by Peter and Philip Benham

The *Disappearing Dinosaur* is the third in a series of educational children's novels. The series is called Adventure.Net ("adventure-dot-net") and contains sidebars throughout the book explaining some of the science behind the story and providing web sites so that interested readers can find out more. The authors of the series are Andrea and David Spalding. If the latter name appears familiar it is because David has written several books with a palaeontological theme including *Into the Dinosaur's Graveyard* (Doubleday, 1999) and *Dinosaur Hunters* (Prima, 1993).

The main characters in the book are Willow and Rick. They participate in a dinosaur dig in Dry Valley, Alberta. The skeleton of a *Tyrannosaurus rex* is being prepared for removal to the Royal Tyrrell Museum. It seems that the curse of the dinosaur grave hangs over the excavation. A cameraman hurts his leg, equipment disappears: something mysterious is up. It turns out that someone is planning to steal the whole skel-

eton and sell it to a rich private collector. It is up to the kids to stop them!

The knowledge that Andrea and David Spalding have gained from researching previous books shows clearly in this story. The badlands, the search for fossils and process of excavation, are all well described in terms that young readers can understand and enjoy. Historical events are well incorporated into the story—such as evidence of Levi Sternberg's excavations in the 1930s in the form of sardine tins and scraps of old newspaper at one of the sites. APS Symposium 2001 attendees will recall Darren Tanke's amazing talk on the search to relocate the Sternbergs' excavation sites in the Red Deer River Valley.

Peter recommends the book for ages 11 and over. He thought the story was both mysterious and adventurous. The use of side panels was interesting and he learned some new facts but says it didn't make him want to search the internet for information. I checked out the links and they seem up-to-date.

Peter is in Grade 6 at St. Rupert Elementary School, Calgary. Philip is APS Technical Program Director.

The Mammals that Conquered the Seas

by Kate Wong

Scientific American, May 2002, p. 70–79.

Review by Les Adler

To understand this article a background of mammal classification, mammal bone nomenclature, distribution of continents and seas during geological periods and epochs and an ability to follow cladistic analyses would be helpful.

The order of mammals that comprises living whales, dolphins, porpoises and their extinct ancestors the archaeocetes is Cetacea. Living members fall into two suborders: (a) the odontocetes or toothed whales, including sperm whales, pilot whales, belugas with all dolphins and porpoises and (b) the mysticetes or baleen whales, including blue and fin whales.

Another order is the Artiodactyla which contains even-toed hoofed mammals such as camels, cows, hippos and not, as it appears, whales.

In 1851 Herman Melville in *Moby Dick* referred to whales as fishes. Charles Darwin grouped whales with mammals. Over the last twenty years palaeontologists have uncovered a wealth of whale fossils span-

ning the Eocene Epoch, 55 million to 34 million years ago, when archaic whales made their transition from land to sea. Fossil material from the Oligocene Epoch with DNA analyses from living animals have enabled scientists to present a detailed picture of when, where and how whales evolved, one of the most profound evolutionary metamorphoses on record.

Alan Boyden of Rutgers University and a colleague have shown that whales are most closely related to the even-toed hoofed mammals or artiodactyls. Leigh Van Valen, then at the American Museum of Natural History, New York, discovered striking resemblances between the three-cusped teeth of fossil whales and mesonychid mammals and then on to artiodactyls.

This report contains a chart which shows evolutionary possibilities in order through *Pakicetus*, *Ambulocetus*, *Kutchicetus*, *Rodhocetus*, *Dorudon* and *Basilosaurus* over a 20 million year period with a set of associated cladistic diagrams.

The ankle bones of fossil whales bear the distinctive characteristics of artiodactyl ankles. Molecular studies indicate that whales are more closely related to hippopotamuses than other artiodactyls.

A study of the Tethys seas led Philip Gingerich's team from the University of Michigan to explore sediments in the Himalayan foothills of northern Pakistan, then on to Egypt to find important fossils. After 1992, Thewissen, of Northern Ohio, found a nearly complete skeleton of *Ambulocetus natans*, the "walking and swimming whale."

A series of brilliant skeletal diagrams and explanations with analyses shows evolutionary changes. Also fossil teeth can be analysed to show which animals ingested sea water and which animals ingested fresh water from the occurrence of oxygen isotopes, leading to maps of distribution patterns of whales across our planet past and present. Astragalus (ankle bone) studies are particularly useful.

Not all investigators are convinced; additional fossils are required that can illuminate the beginnings of artiodactyls and hippos in particular. With the extraordinary advances made over the last twenty years, and with continued probing, answers to many of the questions that have been raised will surface from the sands of time.

Further references are provided including a video from the National Geographic Channel. □

Fossils in the News

Quirks and Quarks

CBC Radio One, October 19, 2002

Prehistoric phallus

BRAZIL—Host Bob MacDonald interviewed Dr. David Siveter of the University of Leicester, UK, who has uncovered the world's oldest penis in Cretaceous rocks in Brazil.

Dr. David Siveter has uncovered what is thought to be the oldest (preserved) sexual organ. It was found on a 100 million-year-old ostracod. It is the exceptional preservation of the soft body parts in this specimen that has allowed this identification.

Ostracods have lived in the shadow of their bigger relatives, trilobites, and their fossil record goes back 500 Ma. Relatives of ostracods have been found in Cambrian rocks. Ostracods are the most abundant arthropods in the fossil record. They have a hinged shell resembling mussels. Most are on the order of 1mm in length. They live in many environments today including marine and non-marine waters.

Acid was used in the preparation of this specimen. Dr. Siveter could not believe his eyes when he first saw the copulatory appendages. The fossil phallus was found protruding from the shell. Other soft body parts such as mandibles were preserved as well.

Dr. Siveter indicated that these animals have a very large sperm compare to their body size so they need a large delivery system. The phallus is one third the animal's total body length. He has found sexual dimorphism in the specimens, both in the shell shape and in soft body parts. Two openings on the females have been found to receive the ostracod penis. Dr. Siveter thinks the sexual organ may have originated much earlier and is looking at Palaeozoic rocks for soft body preservation but has not found any yet.

A picture of the specimen and a link to Dr. Siveter's website can be found at: <http://radio.cbc.ca/programs/quirks/archives/02-03/oct19.html>

—Vaclav Marsovsky □

APS Seventh Annual Symposium (continued from back page)

Workshops

Mount Royal College, Room B108, Sunday March 16, 2003

Workshop has limited spaces—to register please contact Vaclav Marsovsky at vaclav@telusplanet.net or phone (403) 547-0182. Workshop fee is approximately \$15.00 per person, to cover the cost of handouts.

9:00 – 12:00 P.M. *Fossil Plants of Alberta: Precambrian to Tertiary*

Instructor: Georgia Hoffman, Alberta Palaeontological Society

1:00 – 4:00 P.M. *Functional Morphology of Vertebrates: Interpreting the Skeleton*

Instructor: Dr. Anthony Russell, University of Calgary

Call for Posters and Speakers

This symposium will contain presentations from a mix of avocational and professional palaeontologists. We also hope to have fossils from various collections on display. Specific invitations have been given to staff and students of Alberta universities, natural history clubs, Geological Survey of Canada, museums and members of the petroleum industry. The aim is to showcase palaeontology to the general public and to foster closer relations between the APS and the above groups. The event is free and open to the general public. Families are encouraged to bring fossils to our identification booth where APS members will do their best to provide you with information. Advertising for the event will go out to the Calgary Herald, local TV and radio.

If you are interested in contributing a poster or fossil display, please contact us. We will be compiling an abstract volume of the event, which has proven popular in the past.

Symposium Details

The poster and lecture portion is free to all and will run from 10 A.M. to 4:30 P.M. on March 15, 2002 at Mount Royal College, Calgary. The address is 4825 Richard Road SW. The MRC Switchboard number is 240-6111. We request that poster presenters be set up by 9:30 A.M. and that they be available from 12:30 P.M. to 2 P.M. for discussion about their exhibit. There is no fee to be a presenter in the symposium. If you cannot attend but would like to provide a poster, that can be arranged via mail.

For more information or to submit an abstract contact:

Wayne Braunberger: phone (403) 278-5154, email events@albertapaleo.org or
Philip Benham: phone (403) 691-3343, email programs@albertapaleo.org .

Instructions for Abstract Submission

Abstracts can be 1–3 pages in length (with 1 being standard) though there may be exceptions if there are specific requests. The abstract may include photos and diagrams, but it should be noted that the abstract volume will not be printed in colour. Abstracts can be sent to editor Howard Allen, via email: h2allen@telusplanet.net or post (see address, Page 1). Documents will not be edited for content, but may be formatted to fit into the volume. Postal address of the author should be included (and email address if you wish) for insertion in the volume. **Deadline for submission of abstracts for publication is February 15, 2003.** Contact the editor for specific instructions regarding file formats, illustrations, etc.

Instructions for posters/displays

A table and stand with a 4x8-foot poster board will be supplied to each poster presenter. 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.

Deadline for submission of request for poster space is February 15, 2003. There will be time set aside specifically for poster viewing (from 12:30 P.M. to 2 P.M.).

Increasing the number of palaeontological collections on display is a new twist on this year's symposium. We would like to have more fossils on display to attract public interest. We hope to access some appropriate cabinets to display the fossils safely. Please contact us ASAP if you plan to display specimens as this is important to our planning process.

Visit the APS website for confirmation of monthly meeting times and speakers and more information on the symposium: <http://www.albertapaleo.org>

New T-Shirts!

The new APS T-shirts and sweatshirts are in! The artwork by APS member Cory Gross adorns the front of our new APS T-shirts and sweatshirts (see front cover). The T-shirts are available in gold, red and natural (unbleached white). The sizes are medium, large, extra large (XL) and extra, extra large (XXL). As of November 14, we have lots of T-shirts in stock. Quantities of medium and XXL are limited, so be sure to get yours before supplies run out. **The T-shirts cost \$15 for APS members and \$20 for non-members.**

Sweatshirts are available in gold only, in sizes of medium, large, extra large (XL) and extra, extra large (XXL). As of November 14, we have 22 sweatshirts left. Quantities of medium and XXL are limited. **The sweatshirts cost \$25 for APS members and \$30 for non-members.**

I will bring one or two of each size and colour to each APS meeting. To insure that I have enough of your choice at the meeting, you can call me (Mona Marsovsky—at home (403) 547-0182) and leave a message a day or two in advance of the meeting to place your order.

We will also mail T-shirts and sweatshirts. Specify the size and colour desired. Send a cheque or money order for the cost of the item, plus the following surface mail and handling charges for each item ordered:

Postage to Canada: T-shirt \$3.00 each, Sweatshirt: \$8.00 each
Postage to the USA: T-shirt: \$5.00 each, Sweatshirt: \$8.00 each

Mail your cheque or money-order to:
Alberta Palaeontological Society
c/o Mona Marsovsky
7 Edgeridge Court NW
Calgary, AB Canada T3A 4N9

Fossils In Motion

Alberta Palaeontological Society's Seventh Annual Symposium

Held jointly with the Mount Royal College Geology Department
and Canadian Society of Petroleum Geologists, Paleontology Division

Mount Royal College Science Wing (Lower Level)
4825 Richard Road SW, Calgary, Alberta

All lectures and poster displays are free to the public!
10:00 A.M. to 4:30 P.M., Saturday, March 15, 2003

Tentative Speaker Lineup

Jenkins Theatre, Mount Royal College

- 10:00 – 10:30 A.M.** *5 Million Years: Interaction between Man and Beast in Wallacea*
Philip Benham, Shell Canada Ltd. and Alberta Palaeontological Society
- 10:30 – 11:00 A.M.** *Footprints in the Sands of Time: Tracking the Earliest Animals on Land*
Dr. Rob MacNaughton, Geological Survey of Canada
- 11:00 – 11:30 A.M.** *Sauropod Body Shapes and Narrow- and Wide-Gauge Trackways*
Donald Henderson, University of Calgary
- 11:30 – 12:00 P.M.** *Snakes with Legs*
Dr. Michael Caldwell, University of Alberta
-
- 12:30 – 2:00 P.M.** *Poster Viewing* —Presenters to be available for discussion.
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- 2:00 – 2:30 P.M.** *Jurassic Dinosaur Tracksites, American Southwest*
Debra Mickelson, University of Colorado
- 2:30 – 3:00 P.M.** *What's Your Sign Beautiful? at 200 dB: Sexual Selection in Giant Sauropod Dinosaurs*
Eric Snively, University of Calgary
- 3:00 – 3:30 P.M.** *Fossil tracks from Tumbler Ridge: a brief history of collaboration between amateurs and academics*
Richard McCrea, University of Alberta
- Keynote Talk**
- 3:30 – 4:00 P.M.** *Dinosaurs in the Deep: The Sinking of the SS Mount Temple and Related Military Histories*
Darren Tanke, Royal Tyrrell Museum of Palaeontology

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