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Albertosaurus

Pop Culture in Canada Page 12

ALBERTA PALAEOLOGICAL SOCIETY

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

- a. Promote the science of palaeontology through study and education.
- b. Make contributions to the science by:
 - 1) Discovery
 - 2) Collection
 - 3) Description
 - 4) Education of the general public
 - 5) Preservation of material for study and the future
- c. Provide information and expertise to other collectors.
- d. Work with professionals at museums and universities to add to the palaeontological collections of the province (preserve Alberta's heritage).

MEMBERSHIP: Any person with a sincere interest in palaeontology is eligible to present their application for membership in the Society. (Please enclose membership dues with your request for application.)

Single membership **\$20.00 annually**
Family or Institution **\$25.00 annually**

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Upcoming APS Meetings

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

June, July, August, 2011—No meetings. See Field Trips, Page 7.

Friday, September 16, 2011—Pascal Godefroit, Royal Belgian Institute of Natural Sciences:
Latest Cretaceous Dinosaur Faunas from Russia and Northeastern China (See Page 3).

Friday, October 21, 2011—Philip Benham, Alberta Palaeontological Society:
Living with Fire: Cultural Adaptations in the South Pacific to Geological Processes.

Friday, November 18, 2011—Dan Quinsey, Alberta Palaeontological Society:
Moose Mountain Alberta—Exploring the Natural History of Canyon Creek and Area (See Page 4).

ON THE COVER: Folk art life-size *Albertosaurus* model at the Patricia, Alberta gas station and store. Photo by Darren Tanke ©2010. See article, Page 12.

AGM Rescheduled to September 16

The APS Annual General Meeting (AGM) failed to meet quorum on the regularly scheduled date of May 13, and again at the rescheduled meeting a week later, on May 20. Therefore, in accordance with Society Bylaws, the AGM is rescheduled to the date of the next general meeting, September 16. At this time, quorum is reduced to 5 members. In order to accommodate both the rescheduled AGM and the regular September meeting activities, the starting time for the meeting will be 7:00 P.M., rather than the usual 7:30 P.M. start.

NOTICE!

The September 16, 2011 meeting will start 30 minutes early at 7:00 P.M.

Upcoming Events

September

Pascal Godefroit

Royal Belgian Institute of Natural Sciences

Latest Cretaceous Dinosaur Faunas from Russia and Northeastern China

Friday, September 16, 2011, 7:30 P.M.

Mount Royal University, Room B108

Four main dinosaur-bearing sites have been investigated in Late Cretaceous deposits from the Amur/Heilongjiang Region: Jiayin and Wulaga in China (Yuliangze Formation), Blagoveschensk and Kundur in Russia (Udurchukan Formation). More than 90% of the bones discovered in these localities belong to hollow-crested lambeosaurine hadrosaurids: *Charonosaurus jiayinensis* at Jiayin,

Amurosaurus riabinini at Blagoveschensk, *Olorotitan arharensis* at Kundur, and *Sahaliyana elunchunorum* at Wulaga. Flat-headed hadrosaurine hadrosaurids are much less numerous, but appear well diversified as well: *Kerberosaurus manakini* at Blagoveschensk, *Wulagasaurus dongi* at Wulaga, and a new genus at Kundur.

Theropods are represented by shed teeth and isolated bones; isolated scutes and teeth discovered at Kundur are tentatively attributed to nodosaurids. Palynological studies suggest that these sites are probably synchronous with the “Lancian” vertebrate localities of western North America, which represent the youngest dinosaur faunas in this area. However, the latest Cretaceous dinosaur assemblages are completely different in the Amur/Heilongjiang region (lambeosaurines abundant, ceratopsids absent) and in western North America (ceratopsids abundant, lambeosaurines extremely rare or absent). This probably reflects some kind of geographical barrier between both areas by Maastrichtian time rather than strong differences in palaeoecological conditions.

A new late Maastrichtian dinosaur fauna was also recently described in Chukotka region (northeastern Russia), close to the Bering Strait, which demonstrates that polar dinosaurs were still highly diversified just before the Cretaceous-Tertiary mass extinction event. Dinosaur eggshell fragments, belonging to hadrosaurids and non-avian theropods, indicate that several latest Cretaceous dinosaur taxa could reproduce in a polar region and were probably year-round residents of high latitudes. Palaeobotanical data suggest that these polar dinosaurs lived in a temperate climate (mean annual temperature about 10°C), but the climate was apparently too cold for ectothermic tetrapods. The high diversity of late Maastrichtian dinosaurs in high latitudes, where ectotherms are absent, indicates that dinosaur extinction was not a result of temperature decline, caused or not by the Chicxulub impact.

Biography

Pascal Godefroit is a palaeontologist at the Royal Belgian Institute of Natural Sciences in Brussels. He has previously studied Jurassic marine reptiles and Late Triassic terrestrial ecosystems. For more than ten years, his research has mainly focused on the anatomy, relationships and evolution of ornithomimid dinosaurs and on the biodiversity of Late Cretaceous vertebrate faunas in Europe and Asia. He has collected dinosaurs in Belgium, France, Romania, Russia, and China.

October

Philip Benham

Alberta Palaeontological Society

Living with Fire: Cultural Adaptations in the South Pacific to Geological Processes

Friday, October 21, 2011, 7:30 P.M.

Mount Royal University, Room B108

November

Dan Quinsey

Alberta Palaeontological Society

Moose Mountain, Alberta—Exploring the Natural History of Canyon Creek and Area

Friday, November 18, 2011, 7:30 P.M.

Mount Royal University, Room B108

The lure of the mountains and foothills affects us all. Most of us are familiar with the upper and lower foothill regions of Alberta adjacent to the Rocky Mountains which, together with the Rockies, are commonly referred to as the Eastern Slopes. The foothills are not only home to some of the most interesting species in the province, including the most inland race of grizzly bears in North America, they hold within them evidence of ancient times.

Uncovered within the lower foothill regions of Alberta are the Carboniferous and Jurassic formations along Canyon Creek at Moose Mountain, where many geological and palaeontological wonders wait to be experienced and discovered.

The objective of this talk is to offer fellow enthusiasts an opportunity to experience the magnificence of Canyon Creek, Moose Mountain. The focus will be on the geological and palaeontological features of the area, a brief survey of the exploration history, and a look at the common flora and fauna along the way.

Biography:

Dan Quinsey has been a member of the Alberta Palaeontological Society for over ten years

and currently holds the positions of Past President and Chairperson of the Public Outreach / Education Committee. Dan has a Baccalaureate in palaeontology from Mount Royal University, Degrees in Business Management from Chinook Learning Services and Electronic Data Processing from Loyalist College, and Undergraduate Degrees in Systems Analysis and Design and Architectural Drafting also from Loyalist College.

Current and previous affiliations include the Tyrrell Museum of Palaeontology, Calgary Junior Chamber of Commerce—JAYCEES, Calgary Philatelic Society, and Big Brothers and Big Sisters of Calgary and Area.

Dan has published work in *Deposits Magazine* (UK), kick-started the *APS Guide to Common Vertebrate Fossils from the Cretaceous of Alberta* book project, and is currently working on another book titled *Moose Mountain, Alberta—Exploring the Natural History of Canyon Creek and Area*.

Program Summary

April

Annie Quinney

University of Calgary

Palaeoenvironments and Palaeoclimate of the Upper Cretaceous Horseshoe Canyon Formation (Alberta): Using Ancient Soils to Study the Effect of Environmental Changes on Faunal Turnover in a Dinosaur-dominated Terrestrial Ecosystem

Friday, April 15, 2011, 7:30 P.M.

Mount Royal University, Room B108

The Horseshoe Canyon Formation (HCFm) is a well-known dinosaur-bearing formation of

Alberta which records a time-period near the end of the Age of the Dinosaurs. The HCFm consists of five informal sub-units marking significant lithologic changes (Eberth, 2004). At the base of Unit 3 of the HCFm, there is a distinct turnover in the species of dinosaurs which includes the appearance of *Parksosaurus*, *Hypacrosaurus* and *Saurolophus* as well as the disappearance of ceratopsians and a significant decrease in turtle diversity. This turnover may be associated with climatic changes that caused drying and cooling during that time (Eberth *et al.*, 2001; Brinkman and Eberth, 2006).

Although it is often inferred that climate and environmental change are responsible for changes in dinosaur faunas near the end of the Cretaceous, this hypothesis remains untested.

Palaeoclimates and palaeoenvironments can be inferred through the study of palaeosols (ancient soils) that are preserved in the rock record (Retallack,



Annie Quinney examining a red soil horizon overlying a green soil horizon in a palaeosol outcrop NW of Drumheller, Alberta.

2001). Palaeosols occur throughout the HCFm and close examination of lithological and geochemical features in these ancient soils will provide information on the environments and climates that prevailed between 73 and 69 million years ago.

The objective of this research is to establish if the known diversity changes in dinosaur and other vertebrate faunas of the HCFm coincide with environmental and/or climatic changes. This objective is achieved by establishing a palaeoenvironmental and palaeoclimatic framework for the entire HCFm, inferred from the study of palaeosols. The stratigraphic occurrence of palaeoclimatic and/or

palaeoenvironmental changes within the HCF will then be compared to known faunal changes in order to determine if episodes of faunal change coincide with episodes of environmental change. If positive, this study will be the first to provide evidence that climatic change affected dinosaur faunas in Alberta during the Late Cretaceous.

In this talk Annie discussed the observations and results achieved thus far in the project.

References

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- Eberth, D.A., Currie, P.J., Brinkman, D.B., Ryan, M.J., Braman, D.R., Gardner, J.D., Lam, V.D., Spivak, D.N., and Newman, A.G., 2001. Alberta's dinosaurs and other fossil vertebrates: Judith River and Edmonton Groups (Campanian-Maastrichtian). In *Mesozoic and Cenozoic paleontology in the Western Plains and Rocky Mountains*. Edited by C.L. Hill. Museum of the Rockies Occasional Paper, 3: 47–75.
- Brinkman, D.B. and Eberth, D.A. 2006. Turtles of the Horseshoe Canyon and Scollard Formations: Further evidence for a biotic response to Late Cretaceous climate change. *Fossil Turtle Research*, 1: 11–18.
- Retallack, G.J., 2001. *Soils of the past: An introduction to palaeopedology* (second edition). Oxford: Blackwell-Synergy.

Biography:

Annie Quinney is currently a M.Sc. student in the Department of Geoscience at the University of Calgary, where she completed her B.Sc. in 2008. Her undergraduate thesis focused on the bite force and feeding behaviours of extant and extinct predators, including canids, felids and hyaenids, with a secondary focus on the extinct sabre-toothed cat *Smilodon*. For her M.Sc., she switched her focus to examine ancient soils as an indicator of past climates and palaeoenvironmental change. She hopes to complete her M.Sc. by September, 2011. □

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Program Summary

(continued)

May

Wayne F. Braunberger

Alberta Palaeontological Society

Molluscan Biostratigraphy of the Cardium Formation, Alberta Foothills and Adjacent Subsurface

Friday, May 13, 2011, 7:30 P.M.

Mount Royal University, Room B108

The Cardium Formation is a significant hydrocarbon reservoir in Alberta and hence is of considerable economic importance. It is one of the most intensely studied formations in the Western Canada Sedimentary Basin but is still poorly understood in terms of depositional history, environments of deposition and correlation of subsurface to outcrop. Workers have concentrated on lithostatigraphy, sedimentology, and more recently the application of sequence stratigraphy in understanding the formation. A thorough review of the palaeontological data is a basis for a refined biostratigraphy on which dating and correlation can be based. Ammonoids and inoceramid bivalves allow recognition of all biozones from the Middle Turonian to Late Coniacian in strata of the Cardium Formation and immediately underlying (Blackstone) and overlying (Wapiabi) units.

Sediments comprising the Cardium Formation accumulated from the *Prionocyclus wyomingensis* zone through the *Scaphites preventricosus* zone. No ammonite zones are absent; however, zones may be partially absent in individual sections. In the southern foothills the Turonian/Coniacian boundary occurs in the basal portion of the Leyland Member. Farther north this boundary probably occurs within the Moosehound Member. Prionocyclid ammonites have been recovered from several sections in both the subsurface and surface. *Scaphites preventricosus* has been recovered from the Leyland Member and ranges up into the basal beds of the overlying Wapiabi Formation. Ammonites referable to the *Scaphites preventricosus* zone have also been recovered from the Cardium Zone in the Edson Field. Inoceramid

bivalves have also been described, confirming the ammonoid zonation.

The biostratigraphic data suggest that the Cardinal Member rather than the Ram Member is the most laterally continuous member of the Cardium Formation in the Southern Foothills. Sandstones of the Pembina River Member of the Pembina Field and the Cardium "A" Sand in the Crossfield area are correlative with the Cardinal and basal Leyland members in outcrop. The upper portion of the Leyland Member, the Sturrock Member, and the basal beds of the Wapiabi Formation are correlative with the Cardium Zone of the subsurface. The available data also suggest that the Cardium Formation is diachronous in both west-east and north-south directions. Biostratigraphic correlations indicate that unconformities within the Cardium Formation may not always represent significant erosional events or chronostratigraphic horizons.

Biography:

Wayne Braunberger received B.Sc. (honours in geology) and M.Sc. (biostratigraphy and sedimentology) degrees from the University of Calgary. He is a member of several technical societies including the CSPG and has been involved with the Alberta Palaeontological Society since its inception and is currently President. □

Dig Dinosaurs in Mongolia This August

By Mona Marsovsky

There are a few spots left in the Dinosaurs of the Gobi expedition to be held August 8-23, 2011. This expedition is led by **Dr. Philip Currie** and **Dr. Eva Koppelhus** of the University of Alberta and **Dr. Badamgarav**, a sedimentologist and senior scientific researcher at the Mongolian Academy of Sciences.

Participants will prospect for fossils and participate in palaeontological explorations in the famed Gobi Desert localities of Nemegt Basin, Altan Ula, Ukhaa Tolgod, Tugrigin Shiree and the Flaming Cliffs. A couple of days of the tour have been reserved to explore Mongolian culture in Ulaanbaatar, capital of Mongolia. This tour is for those who enjoy hiking, exploring and tenting. For more information, see the Nomadic Expeditions website (www.nomadicexpeditions.com) and then select Trips and Dinosaurs of the Gobi) or contact info@nomadicexpeditions.com or 1-800-998-6634. □

2011 Field Trips

By Wayne Braunberger,
Interim Field Trip Coordinator

The August field trip is still open for registration. You should have received a field trip registration form with your March *Bulletin*. You can download the form from the APS website (www.albertapaleo.org). Please note that the \$10.00 fee is due at the time of registration. For information contact me at (403) 278-5154 or by email at president@albertapaleo.org.

Non-members and unaccompanied minors will not be allowed to attend field trips. **All participants are required to have their membership in good standing. Any membership applications received after May 1, 2011 will not be reviewed and voted on by the Board of Directors until September, 2011.**

All participants will be required to read and sign a release form (waiver). Detailed information will be provided to all those registered shortly after the registration deadline. **After the registration deadline no refunds will be given; however, you will receive the guidebook for the trip. No late registrations will be accepted.** Registrations are accepted on a first-come-first-served basis. Sign up early to avoid disappointment.

I will be sending you the waiver and medical forms along with the trip information. This information will be sent to you via e-mail or Canada Post. Please ensure that your address is correct and legible when sending in the registration form. When you arrive at the meeting place please have the forms completed. **All participants are required to have fully completed all waiver and medical forms in order to attend the trip. There will be no exceptions.** All personal information is held in confidence and ultimately destroyed.

Trip Participant Responsibilities

It is understood that risk is inherent to some degree in outdoor activities. Before registering for a trip please ensure you understand the risks involved and are prepared to accept them.

- As a participant you are responsible for your own safety and equipment at all times.
- Inform the trip leader of any medical conditions they should be aware of in an emergency.
- Ensure that your previous experience, ability and fitness level are adequate for the trip.

Trip 2011-3, August 20 & 21, 2011 Canyon Creek-Moose Mountain, Alberta

This trip will revisit the Canyon Creek-Moose Mountain area of Kananaskis Country approximately 60 km west of Calgary. During the most recent visit in 2003, we made six stops at various formations and contacts. Geological observations were made and members had an opportunity to collect invertebrate fossils from Mississippian and Lower Jurassic rocks.

This year the trip will be expanded to two days, covering up to twenty stops, including fossil collecting and prospecting sites (please note, collecting at a couple of the sites may be restricted due to the scarcity of fossils present or the dangers involved due to falling rock or extreme conditions), geological points of interest and a possible visit to an abandoned well site. There will also be opportunities to observe and photograph a fantastic array of wildflowers and common fauna indigenous to the area.

Some sites will be roadside stops while most others will involve a trek on level ground. Proper hiking footwear will be mandatory as steep slopes with loose rocks, muddy surfaces, and some difficult trails along dry to semi-dry creek beds are anticipated. A good walking pole and backpack will definitely be an asset. Lots of water is essential for those making longer treks. Other dangers in the area may include, but are not limited to: ticks, cougars, bears, hydrogen sulphide (H₂S) gas, bad weather, contaminated drinking water, isolation from help, difficult evacuation.

Due to the variety of terrain we will encounter, conditions will vary at each site being visited. However, those with limited physical abilities are encouraged to attend as we may only spend 10–45 minutes at each site and those wishing to hold back on the more difficult treks may do so with little sacrifice.

This trip will be limited to 20 participants and limited vehicles so participants will have to carpool into the area. We will have access behind locked gates with our vehicles. **Those who arrive late will not be permitted access beyond the locked gates once the trip has begun. Field trip times will be strictly adhered to.** Plans are to meet at the Ings Mine parking lot (Canyon Creek Road) at 8:00 A.M. on Saturday for a brief orientation prior to getting underway, and 9:00 A.M. on Sunday. There are lots of camping opportunities in the immediate area and Calgary is less than one hour away.

The registration deadline is August 5, 2011. □

Paleo 2011 Wrap-up

By Mona Marsovsky

Paleo 2011 was another great success, thanks to the efforts of APS volunteers **Vaclav Marsovsky, Phil Benham, Howard Allen, Harold Whittaker, Wayne Braunberger, Mona Marsovsky, Dan Quinsey, Lisa Bohach, Doug Shaw, Emily Frampton, Pete Truch and Georgia Hoffman** and the ongoing support of **Mount Royal University (MRU) (Mike Clark and John Cox)** with funding from the **Canadian Society of Petroleum Geologists (CSPG)**.

Even though roads were slippery and a large snowfall warning posted, the only speaker not able to present on Saturday March 19 was **Victoria Arbour**. Author **Ben Gadd** ably extended his talk to help fill Victoria's half hour spot. About seventy attendees enjoyed the eight talks and the poster displays. Groups such as the Dinosaur Research Institute, Archaeological Society of Alberta, Canadian Society of Petroleum Geologists and the Mount Royal University Students' Geology Club provided displays.

As part of the 25th anniversary celebration of the formation of the APS, president **Wayne Braunberger** presented certificates to the original founding (charter) members. **Les Adler, Harvey Negrich and Don Sabo** were present to receive their certificates. Certificates will also be sent to **Lyle Hartwig and Geoff and June Barrett**, who were not in attendance. Wayne Braunberger is also a charter member. Wayne acknowledged twenty-five-year members **David Mundy, Sunni and Robert Turner and Meinrad Hoffmann**, who were not present to accept their certificates. Wayne also presented Life Memberships to **Dan and Valerie Quinsey, Vaclav and Mona Marsovsky and Phil Benham** for their ten-plus years of service to the Society on the APS Executive.

Unlike at previous symposia, we have a few of the abstract volumes (which summarize the talks and posters) still available for sale (\$7.00 each). Contact Mona Marsovsky at the next APS meeting or by e-mail: giftshop@albertapaleo.org or phone: 403-547-0182, if you would like a copy.

At the Fossil Arthropod workshop held on Sunday, **Dr. Paul Selden**, Gulf-Hedberg Distinguished

Professor of Invertebrate Paleontology and Director of The Paleontological Institute, University of Kansas, taught the fifteen participants about the basic classification of arthropods. The participants enjoyed viewing the arthropod specimens which Paul Selden and **Lisa Bohach** brought.

Unfortunately, the good luck that we had with road conditions did not last, and **Victoria Arbour**, the instructor for the "Ankylosaur Fan Club" workshop, was turned back by treacherous roads on her voyage from Edmonton on Sunday morning. The seventeen participants who arrived at Mount Royal University were disappointed with the cancellation of the ankylosaur workshop. The good news is that Victoria has agreed to run her workshop at next year's symposium. See photos of this year's symposium at www.albertapaleo.org/symposiumpictures.htm

Preparations are already underway for Paleo 2012, scheduled for March 17-18, 2012. If you would like to speak or present a poster or display at Paleo 2012, contact Vaclav or Mona Marsovsky (membership@albertapaleo.org or 403-547-0182). □

2011 Microfossil Sorting Project Summary

By Mona Marsovsky

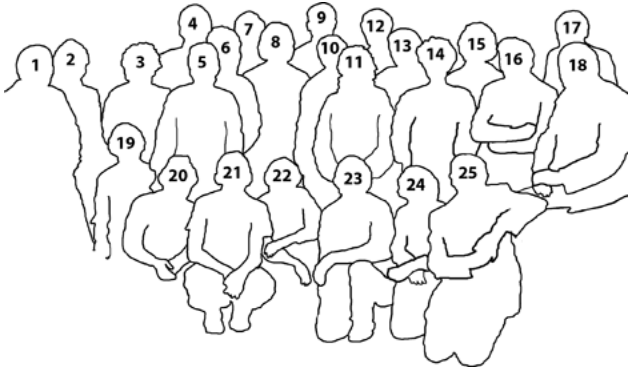
APS held a record six microfossil sorting sessions this past winter. On November 6, 2010, and January 29, 2011, volunteers sorted through the sediments of the Late Cretaceous Foremost Formation from the Milk River area to aid the work of **Emily Frampton**, who had used the sediments for her Master's degree at the University of Calgary. We found a variety of *Myledaphus* teeth, gar scales, fish vertebrae, and quite a few nice invertebrate shells. This was the same set of sediments from which Emily discovered a new species of *Myledaphus*.

In the other four sessions (January 15, February 12, February 26 and March 12, 2011), we sifted through the Paleocene matrix of the upper Scollard Formation from the Wintering Hills area near Drumheller under the direction of **Dr. Don Brinkman** of the Royal Tyrrell Museum (RTMP). This sediment, which was deposited in the first 200,000 years after the K/T

APS Marks a Quarter-Century!



All smiles at the January 1987 general meeting in the (then) Mount Royal College rock lab. 2011 is the 25th Anniversary year of the Alberta Palaeontological Society, which was founded in March, 1986. Names in bold text are current members: 1. Paul Milo; 2. Jill Fryling; 3. Marian Walker; **4. Wayne Braunberger**; **5. Steffie Negrich**; 6. Lynn Braunberger; **7. Harvey Negrich**; 8. Brett Nickerson; 9. Laverne Novlan; 10. Irene Novlan; 11. Karen Tanke; **12. Don Sabo**; **13. Dave Mundy**; 14. Stephanie Milo; 15. Karen Weinhold; 16. Don Emery; **17. Gerry Morgan**; 18. Dick Walker; **19. Darren Tanke**; 20. Irene Markhasin; 21. Boris Markhasin; **22. Sue Marsland**; **23. Geoff Barrett**; 24. Annie Milo; **25. Leslie Adler**. Photo courtesy of June and Geoff Barrett. Thanks to Wayne Braunberger for identifications.



boundary event (64.5 to 65.5 million years ago), was particularly important for the study of the diversification of life after that major extinction event. The goal was to find mammal teeth for **Dr. Craig Scott** of the RTMP and we succeeded. In addition, this rich sediment also yielded salamander bones, fish vertebrae, scales, jaws and skull fragments, champsosaur bones, crocodile teeth and even some frog bones.

Attendance at these 2.5 hour long Saturday after-

noon sessions was excellent, ranging from eight to fifteen people attending each session with an average of twelve volunteers attending each session. The APS volunteers for this past winter were (in alphabetical order): **Les Adler, Judith Aldama, Lisa Bohach, David Fischman, Georgia Hoffman, Mona and Vaclav Marsovsky, Reba Murphy, Harvey Negrich, Mai Powell, Al Rasmuson, Davis and Ken Roman, Dan and Valerie Quinsey, Doug Shaw, Reg Spratley, Pete Truch, Harold Whittaker and Conrad Wilson**. We wish to thank **Mike Clark and John Cox** of Mount Royal University for allowing us to use room B213 and all its excellent microscopes for this work. Without their support, we could not have held these sessions. Thanks also go to Emily Frampton and Don Brinkman for allowing us to sort through their matrix and have some fun finding fossils in the midst of this seemingly endless winter. □

Seasons of Change

By Erika Sherk

A new name, a new logo and a glitzy fund-raising ball on the horizon—momentum keeps rolling for the Pipestone Creek Dinosaur Initiative. The project is tasked with creating a world-class dinosaur museum near Wembley, Alberta—a centre of excellence for research, education and discovery highlighting the region’s renowned fossil riches.

The biggest news recently is the museum’s renaming. The facility was officially renamed on April 5, 2011 as the Philip J. Currie Dinosaur Museum. Formerly known as the River of Death and Discovery Dinosaur Museum, there were many reasons behind this momentous change. Negative reaction to the “death” component of the former name was holding back some segments of public support and sponsorship—pretty problematic for an organization working to raise several more millions to build a museum. The “river” component had also become less pertinent as the site of the museum had changed from its original spot overlooking the water. The name had become restrictive—it referred to one event, while the museum soon began evolving into an international centre of excellence with a much



According to Dr. Currie’s Alberta Order of Excellence biography, “he is easily one of Canada’s most referenced scientists in the news media who has made more than 1,000 appearances in newspapers, radio and TV in his efforts to increase awareness of and interest in palaeontology.” Photo by Chris Beauchamp, Beauchamp Photography (©).



Not only is Dr. Currie an international palaeontological celebrity revered for his long list of achievements and discovery, he is also a kind, humble man filled with enthusiasm for the wonderful natural history in Alberta. Photo by Chris Beauchamp, Beauchamp Photography (©).

larger focus. “The River of Death and Discovery Dinosaur Museum” is also a pretty big mouthful, as is the acronym: RDDDM.

Though many were still in favour of the old name—and the Initiative did receive a letter from Mrs. Whipple’s Grade Four Class at Hillside Community School saying that they understood that dinosaurs died and that’s why we have such neat fossils today—it was important to respect people’s concerns and address the issue of the museum’s new location away from the river. As we set about considering a new name, one immediately came up as the ultimate, most obvious option.

We’ve been extremely fortunate to have Dr. Philip Currie involved in this project from Day One. Though he would likely disagree in his humble way, Dr. Currie is an international celebrity in the world of palaeontology. This is due not only to his staggering list of accomplishments in research and discovery across the world but also because of his

enduring enthusiasm and generosity. Dr. Currie is a palaeontologist who has persevered to make the great riches of fossil resources in Alberta known and appreciated. He has a gift for making multi-million year-old fossils come alive for people and has been involved in discovering and naming no less than twenty-five new species of dinosaur.

Though Dr. Currie is a figure known around the world—for example, he recently returned from two months in Antarctica—he has been an advocate for this museum for decades. He even co-authored a book on the Pipestone bonebed's unique species, called *A New Horned Dinosaur from an Upper Cretaceous Bonebed in Alberta*. It's very exciting to have Dr. Currie so tangibly connected with the project now, and we couldn't be more pleased that this facility will bear his name.

Rolling on towards the Ball

With all 700 seats sold and buzz growing daily, the Aykroyd Family and Friends Dinosaur Ball is looking bound to be the biggest event of the last few million years. With July 23 coming ever closer, items are still being sought for the silent auction—we've got a pretty exciting list growing, from a 74 million-year-old ammonite to a jet boat ride to a multi-course meal with wine pairings created by a top chef in your own home. The evening is going to be dazzling, with the Canadian Tenors singing, a five-course gourmet meal designed and prepared by the region's five best chefs, dancing to a renowned Calgary blues band and an avante garde fossil-inspired interior. **Please contact Brian Brake, Executive Director at the Pipestone Creek Dinosaur Initiative for more information at (780) 532-2362.**

To the bonebed!

The Initiative will be launching bonebed tours for the public in mid-June. Designed to educate and delight anyone from an avid dino enthusiast to someone who can't tell a sauropod from a theropod, the tours will showcase and explain the fossil riches contained in the Pipestone Creek bonebed. Filled with the fossils of a unique species, *Pachyrhinosaurus lakustai*, it is the site of a mass death event some 73 million years ago. These tours will take place throughout the summer. **Contact Laura Beauchamp, Education Manager at the Pipestone Creek Dinosaur Initiative for more information at (780) 532-2362.** [Erika Sherk is the Communications and Marketing Manager for the Pipestone Creek Dinosaur Initiative, (780) 532-2362, ext. 304.] □

Hadrosaur Symposium September 22–23, 2011 Royal Tyrrell Museum



The Royal Tyrrell Museum, Drumheller, Alberta, and the Royal Ontario Museum, Toronto, will jointly host the 2011 International Hadrosaur Symposium on September 22–23, 2011. The focus of the symposium is duck-billed dinosaurs (Hadrosauridae).

The symposium honours the contributions of **David Weishampel** and features presentations from more than fifty researchers including **Pascal Godefroit** (Belgium), **Jack Horner** (USA), **Rodolfo Coria** (Argentina), **Paul Barrett** (UK), **Khishigjav Tsogtbaatar** (Mongolia), **David Evans** (Canada), **Yu Hailu** (China), **Rene Hernandez** (Mexico) and **David Norman** (UK).

Registration

Web: <https://sales.ccs.alberta.ca/tyrrellmuseum/Default.aspx?AspxAutoDetectCookieSupport=1>

E-mail: tyrrell.bookings@gov.ab.ca

Phone: Toll free in Alberta: 310-0000 then dial 403-823-7707. Toll free in North America: 1-888-440-4240. Outside of North America: 1-403-823-7707.

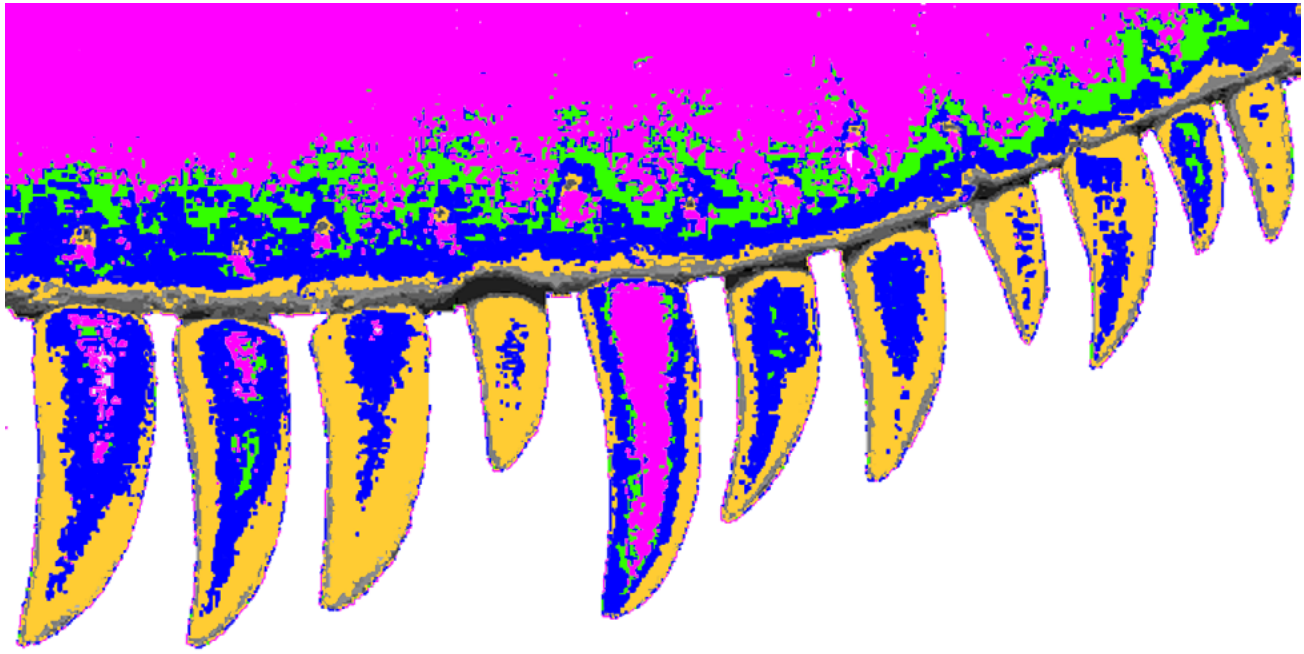
Attendance is limited to 175 participants, so register early. Early Bird Registration is CDN\$125 until August 31. From September 1 registration is CDN\$150.

Registration allows access to the symposium oral and poster presentations, specimen viewing, one copy of the abstract volume, and the social events (evening icebreaker at the Museum, Wednesday, September 21 and symposium dinner, Thursday, September 22).

A Field Trip to Dinosaur Provincial Park on Saturday, September 24 is an additional CDN\$75. Space is limited.

Visit us on the Web and at Facebook:
www.tyrrellmuseum.com (select "Research")

www.facebook.com/?tid=1822528976000&sk=messages#!/pages/Hadrosaur-Symposium/210887698924393 □



A History of *Albertosaurus*-related Popular Culture Events and Activities in Canada

By Darren H. Tanke

The first fossil material of the Late Cretaceous tyrannosaurid dinosaur *Albertosaurus sarcophagus* was collected near today's Drumheller, Alberta in 1884 by Joseph Burr Tyrrell (Tanke and Currie, 2010). Tyrrell's specimen and other material collected over the next two decades were then referred to poorly known theropod taxa such as "Dryptosaurus" and "Laelaps". All of these Albertan specimens were later reidentified as *Albertosaurus*, the new generic name published by Henry Fairfield Osborn in 1905 (Osborn, 1905), the year Alberta became a province (Byfield, 1984).

A special *Albertosaurus* issue of the *Canadian Journal of Earth Sciences* (volume 47, number 9), was

released in the fall of 2010 and covered various scientific aspects of the genus (Currie and Koppelhus, 2010). While *Albertosaurus* has appeared regularly in subsequent scientific publications after Osborn's description, there have been a number of other more popular culture events or activities relating to the genus in Canada (but mostly Alberta) over the past century, with most occurring over the past twenty five years. *Albertosaurus* forms the TMP's logo, has appeared twice on Canadian postage stamps, was the main theme in several popular dinosaur books, has appeared in historical reenactments on television, in dioramas, or as 1:1 scale sculptures originating in and displayed in Canada.

These and other popular culture events are re-

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Disclaimer: Names of individuals or companies in this article are provided for historical purposes only. Their naming herein should not be construed as an endorsement of their products or services by the author, the Royal Tyrrell Museum (TMP), the Government of Alberta or the Alberta Palaeontological Society. The author's opinions are his alone.

viewed chronologically along with their related histories and associated literature. Only events that occurred (or are occurring) in Canada, or had a direct Canadian origin are discussed here. *Albertosaurus* is a popular subject for palaeontology artists worldwide. Smaller scale sculptures, flat art (Anonymous, 1998), and a number of commercial toys have also been made, but these are not reviewed here.

The taxonomy of tyrannosaurids has been in a state of flux for many years with the names *Albertosaurus* and *Gorgosaurus* used interchangeably. For this paper, *Albertosaurus* is defined as the tyrannosaur (*A. sarcophagus*) found in the Late Cretaceous Horseshoe Canyon Formation which is well exposed in the Drumheller, Alberta badlands and upstream to the Dry Island Buffalo Jump Provincial Park area. *Gorgosaurus* and *Daspletosaurus* are found in stratigraphically older Dinosaur Park and Oldman formations,¹ as can be seen in Dinosaur Provincial Park and elsewhere in the province of Alberta. However, as we shall see, some artists have been unwittingly caught in taxonomic disagreements or were loose with the terms *Gorgosaurus* and *Albertosaurus* and some sculptures have used the names interchangeably. As a result models of *Gorgosaurus* appear in Drumheller (fossil material there was renamed *Albertosaurus*) and *Albertosaurus* models appear in *Gorgosaurus* territory. Such taxonomic flip-flops are noted below as it is believed the artists involved likely wanted to represent tyrannosaurid taxa found in their particular home areas, not elsewhere in the province.

1953

Possibly the first public display of a life-sized *Albertosaurus* reconstruction in Canada (certainly in Alberta) was a steel bar, chicken wire and concrete sculpture made by Finnish-born John Kanerva (1883–1976; Anonymous, 1962, 1964, 1974; McLean, 1962; Hull, 1974) in Calgary. This and many dozens of other life-size prehistoric animal sculptures were displayed at the Calgary Zoo's Natural History Park which opened in 1937 (Sara, 1937; Anonymous, 1975b). The specific date of construction for many of Kanerva's dinosaurs is not well known as he (often assisted by others) built many sculptures of prehistoric animals until about 1960 (Debus 2006). Anonymous (1953) reports Kanerva about to begin work on a *Gorgosaurus* sculpture and McNeill (1953) states that Kanerva had just finished a "*Gorgosaurus libratus*", the 26th sculpture of a prehistoric animal in the park, though the author, when a boy, distinctly

remembers *Albertosaurus* signage with it. While recognizable as a tyrannosaurid, the sculpture (and nearly all the others) were not particularly accurate anatomically and not long after his death, all but one of Kanerva's creations were destroyed by about 1981 (*contra* Anonymous, 1977). This was done when the Zoo moved, expanded, and modernized its new Prehistoric Park which opened in 1983 (east section) and 1984 (west section). The only survivor of this purge, and Kanerva's first piece, was the oversized *Apatosaurus* affectionately known as "Dinny", a protected monument (as of 1987) and a famous Calgary icon. The author was unable to find an image of Kanerva's *Albertosaurus* (*Gorgosaurus*) sculpture.

There have been at least two dinosaur-themed parks that have opened and closed in Ontario, one in Alberta near Wetaskiwin and one near Sicamous, British Columbia. The history of these parks is not well known and it is uncertain if these (or other) parks included *Albertosaurus* sculptures in their displays.

1969–1970

Drumheller resident and general contractor Trygve "Tig" Seland (1908–1986; Anonymous,



Figure 1. A large concrete cf. *Albertosaurus* model from the original Prehistoric Park in Drumheller, seen here in the spring of 2011. It and the other concrete dinosaur models in town are regularly repainted by the town, service clubs, or children (smaller dinosaur models) during organized events. Photograph by the author.

1986a–d) made the smaller of the two *Tyrannosaurus* models currently near the bridge in Drumheller (Anonymous, 1960; Shiels, 1980). It was unveiled in a public ceremony on Dominion Day, July 1, 1960 (Anonymous, 1960a, b). Impressed by the continued positive public response to the model and the visitation to the new local fossil museum, Seland later decided to build his own dinosaur theme park in town. He and Jack Durnie (1932–2005; Anonymous, 2005), a Drumheller plumber, bought 140 acres of land in the badlands and valley bottom on the south-central edge of town. Between 1969 and 1975, the pair built around two dozen mostly life-sized concrete dinosaurs, which attracted about 30,000 visitors per year (Anonymous, 1969b–c; 1975a). After changing hands at least once, the park closed about 1993 and the models were later set up mostly in and around downtown Drumheller. The original park contained several concrete tyrannosaur models. The first, and largest (fig. 1) was constructed in 1969 (Anonymous, 1969a, 1970b). Its specific identity is uncertain, which is often the case with such stylized or abstracted “folk art”, especially when it involves prehistoric subjects. It is either a *Tyrannosaurus* or *Albertosaurus*/*Gorgosaurus*. The model still exists and is in a small grassed lot on the corner of 3rd Avenue East and Riverside Drive in Drumheller where it has sat since about the mid-1990s.

The second, smaller model was called *Gorgosaurus* in a Drumheller postcard issued by the theme park, but the author has also heard it called *Albertosaurus*, yet some websites show the sculpture and identify it as *Allosaurus*! Confusing matters further are the presence of three-fingered hands, which would be expected for *Allosaurus*, but three-fingered hands were also incorporated incorrectly in the earliest reconstructions of *Tyrannosaurus*. A photograph of the model (on microfilmed Drumheller Mail newspaper) seems to show it having two-fingered hands when completed by the summer of 1970 (Anonymous, 1970a). Possibly repairs were made to it because the park and its dinosaurs were vandalized

soon after opening (Anonymous, 1969d)², which may have resulted in an extra finger being added. Whatever Seland’s taxonomic intentions originally were, the model still survives and is displayed outside the Drumheller Post Office (fig. 2). Not known to many is the fact that Seland also built some of those popular oversized concrete animal “mascots” for a number of Albertan towns (many figured in Anonymous, 2004).

1984

In early May, 1984 Calgarian dinosaur sculptor Brian Cooley (1956–) and his wife Mary Ann Wilson (1955–) delivered a life-sized *Albertosaurus* sculpture to Drumheller (Anonymous 1984a–c, e; Limerick 1984; Smith 1984; Tolley 1984; Cooley 1988; fig. 3a–c). A number of pet names were considered for the sculpture: it was eventually named “Lillian” (Tivy, 1985b).

In a town populated with numerous corpulent and stylized concrete dinosaurian monstrosities, the arrival of Lillian, a scientifically and anatomically correct *Albertosaurus*, destined for the then upcoming Tyrrell Museum of Palaeontology was a refreshing change and really set a new standard of excellence for future professional dinosaur reconstructions. Construction of the 454 kilogram (1,000 pound) sculpture took some six months; work beginning in mid November, 1983. The sculpture was made from welded steel tubing and pencil rod (steel dowel), bur-lap, chicken wire, urethane foam, fiberglass, paint, and dots of resin beads, each applied individually by hand via a hypodermic syringe. Approximately 500 man hours and 500,000 hand applied resin dots were required to finish the skin texture which was the most labour intensive part of the sculpture’s construction.

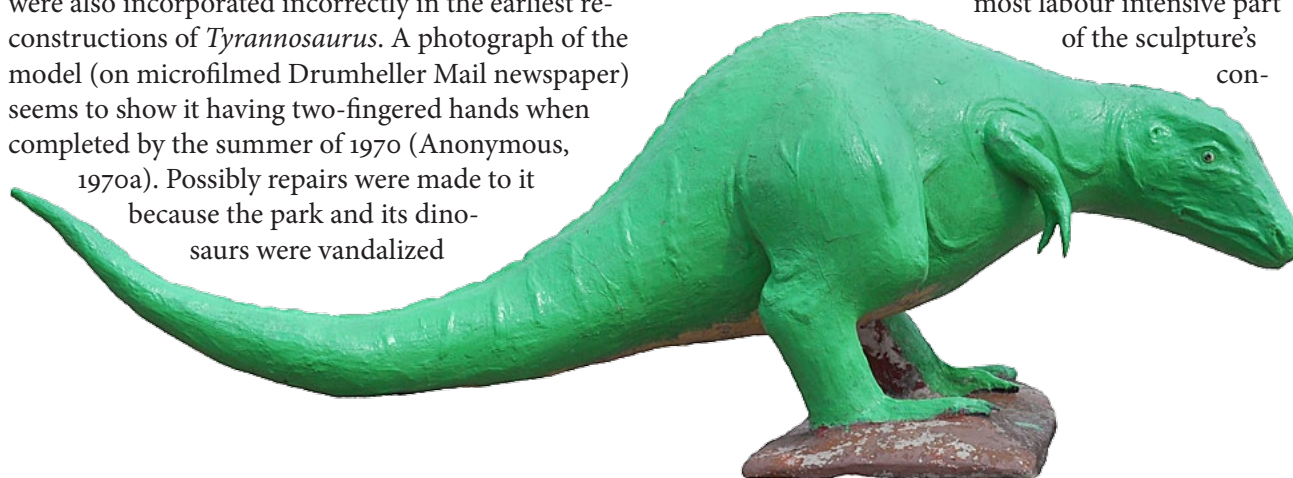


Figure 2. Theropod dinosaur concrete sculpture of uncertain taxonomic affinities (*Albertosaurus*?) outside of the Canada Post office in Drumheller, spring 2011. Photograph by the author.



Figure 3a-c. a) “Lillian” the *Albertosaurus* being loaded onto a truck, February 2, 2007. b, c) Lillian on display in the Drumheller Valley Secondary School, Drumheller, May 5, 2011. The model was on display at the TMP from September, 1985 to January 2007. Figure 3a by Sue Sabrowski, TMP; 3b–c by the author.

struction (Cooley, 1988).

Many people don’t realize that Lillian the *Albertosaurus* was actually based on Royal Ontario Museum (ROM) 1247 *Gorgosaurus libratus* as no good full skeletons of *Albertosaurus* were known to use as a basis at that time. However the two genera are similar in size and proportions so modeling on the *Gorgosaurus* specimen was deemed practical. Anonymous (1984e) states that the sculpture was based on a skeleton dug up near Trochu, Alberta, which is only partly true as this specimen was incomplete³. This sleight of hand would create some controversy later (see 1987 entry below). A photograph of Lillian and *Gorgosaurus* ROM 1247 standing side by side appears in Bryden (1984) and the sculpture in the Tyrrell Museum while under construction appears in Tivy (1985).

In the late 1980s, overnight children’s camp-ins

were held at the museum and visitors slept on the floor near Lillian; the popular events were known as “Lillian’s Pajama Party” (Anonymous 1988; DeBona, 1989; Anonymous, 1990a, b; Elves 2005). For Tyrrell staff, the sculpture quickly became an unofficial museum mascot and was a very popular photo stop for museum visitors. Millions of museum visitors saw Lillian during her twenty-two years on exhibit.

Tyrrell Museum gallery renovations and renewals (the building of the new ceratopsian gallery in 2007) necessitated the permanent removal of Lillian. On February 2, 2007 the popular sculpture was removed from exhibit (fig. 3a) and sent to the local high school, which was also then undergoing major renovations and expansion (Anonymous 2007; Kolafa 2007; Ridgley 2007a). Stored for a time in an unheated and covered shed made to specifically house Lillian, the model was brought into the high



Figure 4. The TMP's running *Albertosaurus* logo as seen outside the museum in 2009. Photograph by the author.

school in October 2009 and later remounted for exhibit (Smylie, 2010b). During construction a door was slammed on Lillian's tail, snapping it off about 1 m from the tip. Some repairs were made, but at the time of writing the model still shows signs of damage. By early January 2011, when the high school was reopened, Lillian was now in the middle of the new library as an elevated walkaround display (fig. 3b) and quite a popular item for staff and students for whom she will no doubt inspire and awe generations to come.

An early September 1984 public announcement (Anonymous 1984d, f) figures the Tyrrell Museum's running *Albertosaurus* logo (fig. 4) publically and states that the logo is the official one of the Tyrrell Museum which has exclusive rights to the image. The logo was created by Singapore-born Mr. Wei Yew, of Edmonton, in 1984 (Tivy, 1985b). Yew, then 40, was a graphic designer hired on contract with three other design groups in conjunction with Tyrrell Museum designers to create the public galleries. While engaged in that work, over a period of two to three weeks, he designed an *Albertosaurus*-based logo using this animal because it had Alberta in its name and was the type of dinosaur found (in 1884) by the museum's namesake Joseph Burr Tyrrell. Also, it was believed to have been an active, fast animal and these aspects were to be conveyed in the logo. This was certainly accomplished and the logo still looks modern some twenty-seven years later.

The logo has been modified slightly on occasion by the addition of other background or surrounding designs (for example, exploding fireworks); the changes done in conjunction with museum celebrations such as anniversaries (Cochrane 1995). The Tyrrell Museum's *Albertosaurus* logo has also been

used extensively over the years on souvenir items such as TMP coffee mugs, several collector coins, T-shirts, etc.

1987

In 1987 the taxonomy of tyrannosaurids, including *Albertosaurus*, was undergoing revision (Bakker *et al.* 1988). This work was picked up by the media and for rea-

sons unknown created some controversy (Hatton 1987; Cooley 1988). Though details are now hazy, it seems the fact that the 1984 sculpture of Lillian the *Albertosaurus* (fig. 3a–c) was actually based on ROM 1247 *Gorgosaurus* was deliberately and maliciously revealed to the print media, quite likely by a disgruntled (and now ex) TMP technician. However, the two taxa are so similar that then Tyrrell staffer Philip J. Currie wryly commented on the supposed “controversy” by stating: “they look the same unless you are a palaeontologist” (Hatton 1987).

1989

1989 saw Canada Post issue a postage stamp set of four explorers of Canada's Far North. All valued at 38¢, there was a stamp commemorating Joseph Burr Tyrrell (fig. 5), the geologist for whom the TMP was named. The stamp featuring him included an abstracted version of an *Albertosaurus* skull—one certainly more complete and uncrushed than Tyrrell's



Figure 5. 1989 Canada Post 38¢ stamp honoring J.B. Tyrrell which includes a stylized rendition of an *Albertosaurus* skull positioned left centre. Photograph by the author.



Figure 6. An actor dressed up as Joseph Burr Tyrrell reenacts the discovery of *Albertosaurus* skull CMN 5600. The lower jaws and teeth are visible on the right. Photograph by the author.

1884 find. The first-day cover was hand cancelled on March 22 in Fort Chipewyan, Alberta, the jumping off point for some early explorers (Tyrrell included) on their way to the Arctic barrens. The same day, a plaque featuring the Tyrrell stamp as well as three other explorers of Canada's North was unveiled at the Tyrrell Museum (Anonymous 1989a–c).

1991

In the early 1990s a series of Canadian historical vignettes were filmed for the CRB (Charles R. Bronfman) Foundation Heritage Project and featured on television during commercial breaks. The discovery of Tyrrell's 1884 *Albertosaurus* skull was reenacted and filmed in the summer of 1991 in Dinosaur Provincial Park and Matzhiwin Creek badlands near Duchess, Alberta (Boulton 1993).

The author was a scientific and historical consultant as well as an assistant field set developer on this short project, which was one of dozens of television short spotlights celebrating various aspects of Canadian human and natural history. The film team

and support crew was quite large, on the order of a major Hollywood production.

The camera crew filmed the field reenactment sequences for several days in late July and early August. For the simulated fossil rediscovery, the Park staff rightly did not want a large hole dug into the rock simply for the sake of a brief reenactment. Therefore an artificial outcrop was created in the middle of the badlands core area, just west of the Valley of the Moon region. A fiberglass cast of Tyrrell's skull find (Canadian Museum of Nature #5600) was laid on the ground at the base of an existing white sandstone outcrop. Remarkably, to simulate the eroded rill features so distinctive in the badlands, the legs of a number of ladies' pantyhose were filled with wet sand gathered from the shore of the nearby Red Deer River. Knotted or tied shut, these were laid out and stacked up, radiating in a serpentine fashion from the base of the outcrop to simulate the distinctive meandering rills of the surrounding badlands topography. The cavity around the now mostly surrounded skull cast and areas outside the pantyhose were filled

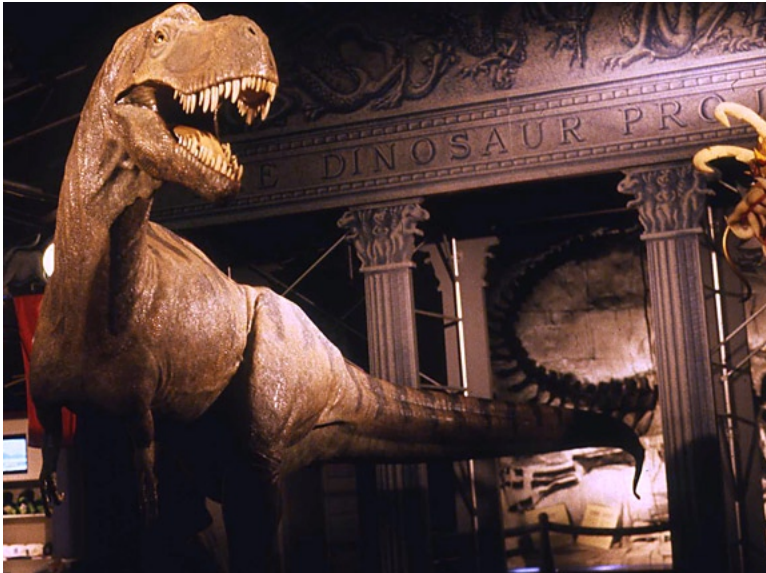


Figure 7. The Ex Terra *Albertosaurus* sculpture built by Brian Cooley. This sculpture travelled the world until 1997, when the financially-troubled Ex Terra exhibit closed down. Image scanned from Ex Terra souvenir show catalogue.

in and banked up respectively with wet sand and the pantyhose similarly covered over with a thin sand layer. Part of a dentary and some of its teeth were left exposed at the surface. Once the simulated outcrop dried out in the hot sun and wind, then was finally sprinkled with dry sand and dust, the desired *in situ* effect was quite realistic.

A bearded actor portraying “J.B. Tyrrell”, dressed up in period clothes and equipped with antique hand tools was able to find and uncover his *Albertosaurus* skull once again for the benefit of the movie camera (Lawlor 1999; fig. 6) and the television audience. The resulting 60 second vignette (see Anonymous, 2009a for online link and Anonymous 2009b for more information on the series) ran regularly on television Canada-wide for well over five years (beginning in the summer of 1993) and is still aired from time to time.

On the topic of Tyrrell’s *Albertosaurus* site, readers may be interested in learning that there has been a recent positive development regarding the relocation of the actual site of his 1884 *Albertosaurus* skull. Owing to poor locality data, the whereabouts of this historically important site had been long lost with seemingly little hope of ever relocating it (Tanke and Currie, 2010).

However, the author has recently seen an old map with the site indicated on it. The map, issued in 1919, shows the whereabouts of J.B. Tyrrell’s 1884 campsite and an X marks the spot nearby for the location of his “*Laelaps*” skull discovery (*Laelaps* now being a junior synonym of *Albertosaurus*). The information

is written on the map with a fountain pen.

Examination of the old map, along with more modern 1:50,000 topographical maps and Google Earth© shows that the course of the meandering Kneehills Creek in the specific area has remained virtually unchanged in roughly 125 years, making a correlation to modern documents and digital images easy. UTM coordinates acquired through Google Earth© narrow the search radius to within 30 m of the X marked on the 1919 map; efforts to relocate the site will be made later this summer.

1993

The Ex Terra Canada-China-Alberta Dinosaur Project show opened in Edmonton in May 1993. This large travelling exhibit featured mostly Canadian and Chinese dinosaurs. Part of the exhibit included another life-size adult *Albertosaurus* made by dinosaur sculptor Brian Cooley (Lowey 1993; fig. 7). The sculpture accompanied the show on its worldwide tour until 1997, when most of it was acquired, along with other dinosaur exhibits, by the TMP. Cooley’s creation made the cover story in *Museum Store* magazine (Chapman, 1993), which documented the marketing of the Ex Terra dinosaur exhibit. Of late the sculpture is usually in warehouse storage in Edmonton, Alber-



Figure 8. The 1993 Canada Post 43¢ *Albertosaurus* stamp, one of a series of sixteen featuring prehistoric animals from Canada. Photograph by the author.

ta, but it and other old Ex Terra dinosaur mounts are occasionally brought out for travelling exhibits or the *Albertosaurus* sculpture is displayed alone for TMP promotional events (Anonymous 2006a). At the time of writing it is displayed in the reception/admissions

area of the Calgary Tower but may soon be leaving there.

Also in 1993, to commemorate October as stamp collecting month, Canada Post released a set of stamps featuring Canadian prehistoric animals. One stamp featured *Albertosaurus* (Aaron 1993; Cochrane 1993; fig. 8). The stamps were unveiled at the TMP with much fanfare on October 1 (Anonymous 1993a-b) and the first-day covers were hand cancelled in Drumheller on October 10. The *Albertosaurus* stamp was among the third of four sets of stamps featuring prehistoric life in Canada which were released in 1990–1994. *Albertosaurus* has also been featured on postage stamps from sixteen other countries—evidently a popular subject (Anonymous, 2009c).



Figure 9. The 1994 Brian Cooley-built *Albertosaurus* 1:1 scale model for the TMP, 2009. Photograph by the author.

1994

On August 17, 1994 dinosaur sculptor Brian Cooley delivered to the TMP another life-size *Albertosaurus* flesh reconstruction (fig. 9) and several ornithomimids. The dynamic group was mounted outside on the museum's plaza with the *Albertosaurus* chasing the ornithomimids (Anonymous 1994a–d; Cochrane 1994). The sculptures were taken down in 2007 pending development and construction of a multi-phased new outdoor main entrance area. They were returned to the museum's front entrance in the spring of 2009 though the *Albertosaurus* and ornithomimids are now well separated so the original pursuit aspect of the grouping is lost. Another *Albertosaurus* and one ornithomimid were cast from the same moulds and were on display at the Air Canada baggage carousel in the Calgary International Airport beginning in 1995 (Tousley, 1995; Sollid, 1995) until November 2, 2000 when they were replaced by another Cooley built dinosaur exhibit featuring small theropod dinosaurs ripping open air travelers' luggage and scattering the contents (Anonymous,

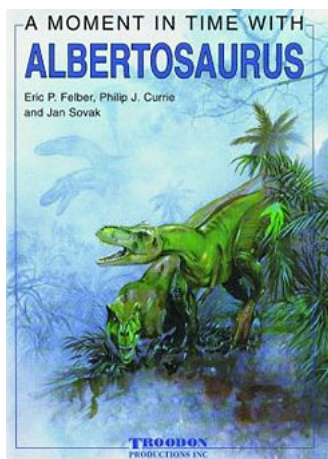


Figure 10. Cover of *A Moment in Time with Albertosaurus* book by Felber et al., 1998. Image from the Internet.

2000b–c; Cochrane, 2000; Summerfield, 2000). The second Cooley *Albertosaurus* sculpture (and ornithomimid) was sold to The Exploration Place Museum and Science Centre in Prince George, British Columbia and has been on display there since March 2001. The two dinosaurs were successfully transported from Calgary to Prince George, exposed to the elements and for all the world to see. When the driver stopped for a lunch break in McBride, British Columbia, the dinosaurs caused such a scene that many people went inside the restaurant making enquires and buying lunch, too. So many people came in that the restaurant filled up. The owners were so pleased by this turn of events that they gave the truck driver his lunch for free! (Campbell, pers. comm., 2011.)

1998

In 1998 an *Albertosaurus*-themed book aimed at a younger audience was released (Felber et al., 1998). This was the second book (fig. 10) in a series of five fictional but fact-based titles relating the life histories of various prehistoric animals found in Alberta. Entitled *A Moment in Time with Albertosaurus*, the book discussed the Dry Island *Albertosaurus* bonebed and other aspects of the animal's biology as gleaned or interpreted from the fossil record at that and other sites.

1999

1999 saw the release of the book *Albertosaurus: Death of a Predator* (Kieran, 1999). However, it should have been proactively entitled “*Gorgosau-*



Figure 11. Welcome to Drumheller tourism sign, spring 2011. Vandals have damaged the end of the tail and removed most of the model's teeth. Photograph by the author.

rus: Death of a Predator.” The book’s story revolves around the discovery, collection, preparation, display and science of TMP 1991.036.0500 (quarry 200), a subadult *Gorgosaurus* from Dinosaur Provincial Park, co-discovered by Philip J. Currie and the author on July 30, 1991. After preparation it was identified as a *Gorgosaurus* but a revised taxonomy separating *Albertosaurus* and *Gorgosaurus* on stratigraphic and anatomical grounds, while well underway, had not been formally published and the old term *Albertosaurus* was still in use—hence its appearance on and in the book. A copy of Kieran’s book was included in a 2000 time capsule at the Chinook Centre shopping mall in Calgary.

Around 1999, the town of Drumheller began installing new “WELCOME TO DRUMHELLER” signs that featured an *Albertosaurus* (fig. 11). The first sign was installed on the south side of town in 1998 or 1999, the north side in 2000, the west side in 2002, and the east side in 2004.

Also in 1999, on May 19–21, the TMP hosted the Western Premiers’ Conference, a meeting of western Canadian provincial and territorial Premiers. For the evening relaxing social activities a beer called “ALBERTOSAURUS ale” (fig. 12) was featured. The beer was made by the Big Rock Brewery of Calgary and was possibly a rebranded version of their Traditional Ale. This beverage was enjoyed by the premiers and leftover stock was bought up by TMP staff. The label featured the cartoon head of an *Albertosaurus*, licking its lips. The artist who designed the beer label is currently unknown.

2000

2000 was the year for large metal renditions of

Albertosaurus, with two examples being constructed.

Toronto steampunk artist Russell Zeid completed an adult life-sized standing *Albertosaurus* skeletal sculpture (figs. 13a-b) for the Chinook Centre shopping mall in Calgary. The sculpture weighs 2.5 t, made from 600 pieces of welded scrap metal and machinery parts found in Alberta and Ontario scrap piles and junkyards. The red glowing eyes are made from two floodlights. Additional images of the sculpture can be found via Internet searches: e.g. <http://palaeoblog.blogspot.com/2007/03/chinook-center-t-rex.html>

Also in 2000, American artist Michael Milbourne created a 3.7 m (12 foot) long metal life sculpture of a young *Albertosaurus* (figs. 14a–d) using about 1,000 custom-shaped pieces of welded iron sheet metal (Milbourne, 2001). The project took five months to build and was done on a tight schedule. Milbourne was assisted with advice from TMP’s Philip Currie and the author, and palaeontology staff at the Smithsonian Institution.

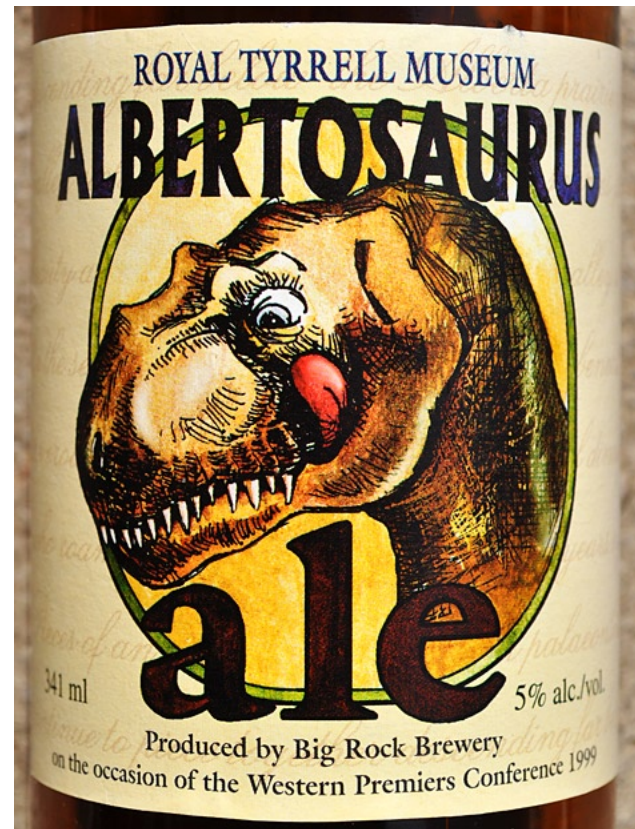


Figure 12. Beer label, by Big Rock Brewery, made for the 1999 Western Premiers’ Conference hosted by the Royal Tyrrell Museum, Drumheller. On seeing the label recently, someone commented it should have been called “Albeertosaurus Ale”. Author’s collection and photograph.



Figure 13a, b. The Chinook Centre *Albertosaurus* model (a) built by Toronto artist Russell Zeid (b). Figure 13a courtesy of Patty Ralrick, 13b from Anonymous (2000a).

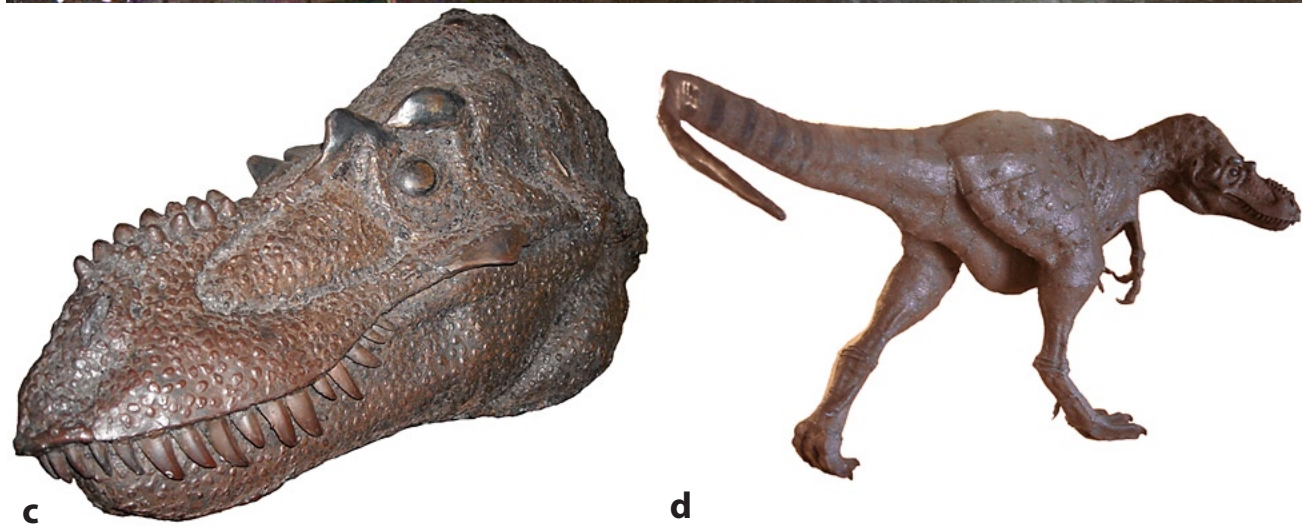
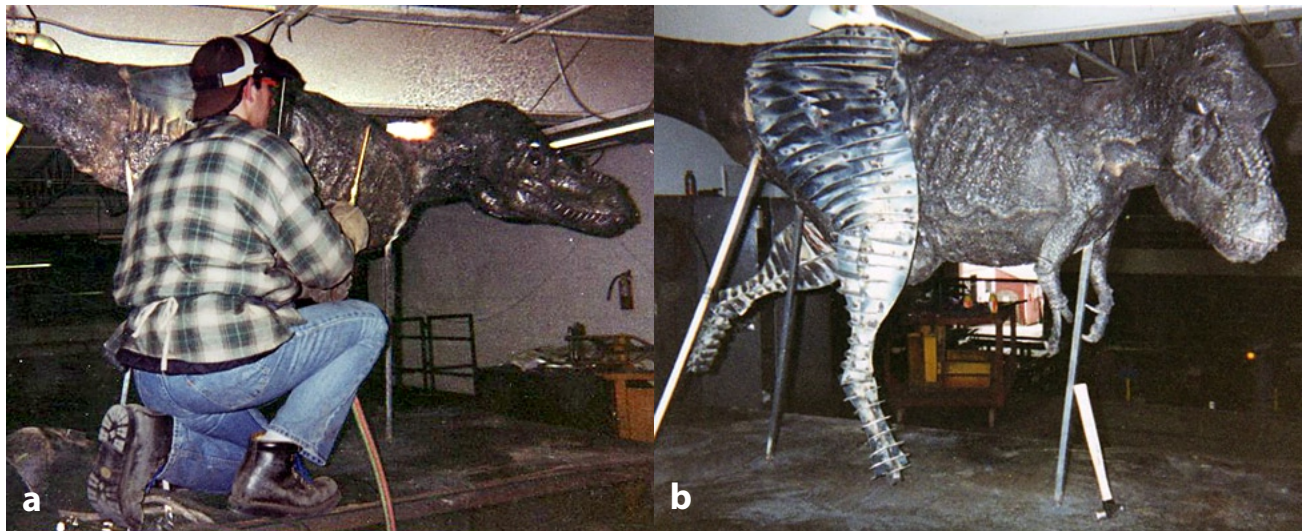


Figure 14a–d. “Trevor” a 1:1 scale model of a young *Albertosaurus* made by Michael Milbourne in 2000 (a, b) and on display in the ATCO Learning Centre at the TMP (c, d). Images 14a, b courtesy of the artist; 14c, d by the author.



Figure 15. Souvenir gift item featuring *Albertosaurus* given out on the occasion of the ground-breaking ceremony of the ATCO Learning Centre at the TMP, June 20, 2002. The souvenir stands 15.5 cm tall.

As a high school student, Milbourne would skip class and go to the Smithsonian, studying the dinosaurs there (Monsberg, 2001). This amazingly realistic two ton creation (the base and animal weighing a tonne apiece) won Milbourne the prestigious National Ornamental & Miscellaneous Metals Association 2001 Ernest Wiemann Top Jobs Award in March of that year (Monsberg, 2001). This honour is impressive when one considers there were over 1,000 entries from the United States and thirteen foreign countries. This popular sculpture was built for and put on display in the concourse of the Canadian National Tower in Toronto for several years (Milbourne, 2001) but found its way to the TMP in 2005. Installed in the main gallery for a time, it is now on display in the lobby of the TMP's ATCO Learning Centre where it is extremely popular with thousands of school children annually. Educational staff at the TMP have lovingly nicknamed the sculpture "Trevor". It is still recognized in the metal fabrication industry as one of the most technical hand-made metal works ever produced.

2002

On June 20, 2002, a groundbreaking ceremony was held at the TMP for the construction of the ATCO Learning Centre. A souvenir gift for VIPs and dignitaries at the ceremony was a small stone and metal sculpture featuring the neck and skull of an *Albertosaurus* (fig. 15). The artist involved in developing this item is not known. A company name, "Paleoworks" appears on a sticker on the bottom of the piece and included an Edmonton phone number, but the number is now out of service. Google searches for Paleoworks (and spelling variants) revealed a number of similarly-named companies worldwide, but none in Edmonton. Further information on the artist of this piece is solicited.

2003

The 2003 sci-fi movie *X2: XMen United* included a natural history museum scene at the beginning of the movie. The TMP provided a number of casts of dinosaur skulls and skeletons for that scene. One of these, seen only briefly, is a cast of *Albertosaurus sarcophagus* skull TMP 1981.010.0001.

2005

A really nice 1:1 scale adult *Albertosaurus* skeleton (fig. 17a, b) was built during the summer of 2005 for the newly renovated Field Station at Dinosaur

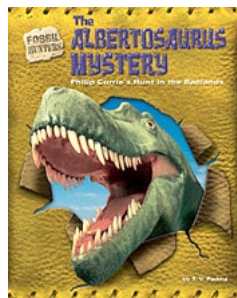


Figure 16. Book cover of *The Albertosaurus Mystery: Philip Currie's Hunt in the Badlands* (Padma, 2006). Image from the Internet.

Provincial Park which re-opened its doors on May 20, 2006. Bryan Pfahl, a Calgarian free-lance fabricator under contract to Westwind Design in Calgary built the model. He did the work largely on his own, with some assistance from several others. The skeleton was carved out of pink plastic foam insulation sheets; the reconstructed bones were then covered with a water-based polyvinyl acetate product and painted an off-white colour. The skeleton was carved not to look like a fossil, but rather as if the animal had died only recently. The 7.6 m (25 ft.) long model was based on skeletal drawings provided by Philip J. Currie and technical drawings from dinosaur books, with the artist visiting the TMP to see the mounted tyrannosaur skeletons there. The mounted skeleton, suspended from the ceiling in the Field Station's main entrance area



Figure 17a, b. The Dinosaur Provincial Park *Albertosaurus* built by Bryan Pfahl. Image 17a, Donna Martin, Dinosaur Provincial Park; 17b courtesy Bryan Pfahl (Calgary).

(fig. 17a) is very light: only about 50 kg. Remarkably, this fine creation was built in only two months!

2006

This year saw the release of another *Albertosaurus* book (fig. 16), this one aimed at children (Padma, 2006). The book's storyline is based on Philip J. Currie's 1997 rediscovery of the lost *Albertosaurus* bonebed that was worked by Barnum Brown and Peter C. Kaisen of the American Museum of Natural History in 1910, and all that has been learned from this important site in subsequent years through fieldwork by the TMP and the University of Alberta.

Also in 2006 was the construction of a life size (6.7 m long) *Albertosaurus* sculpture by Canadian artist and sculptor Mark Rehkopf (Anonymous, 2010a; Fredericks, 2010). The sculpture was made

by him, then molded and cast by Research Casting International in Trenton, Ontario. The model was done for the San Diego Natural History Museum in California. Rather than a full life restoration, the mount featured an articulated skeleton on one side and a fleshed out animal on the other. While this creation is labeled as *Albertosaurus*, it appears to be another unwitting victim of tyrannosaur taxonomy. The skeleton used in the mount appears to be that of ROM 1247, a *Gorgosaurus*. This supposition is confirmed as it is portrayed stalking a similarly sculpted *Lambeosaurus* which lived at the same time as *Gorgosaurus*—not *Albertosaurus*.

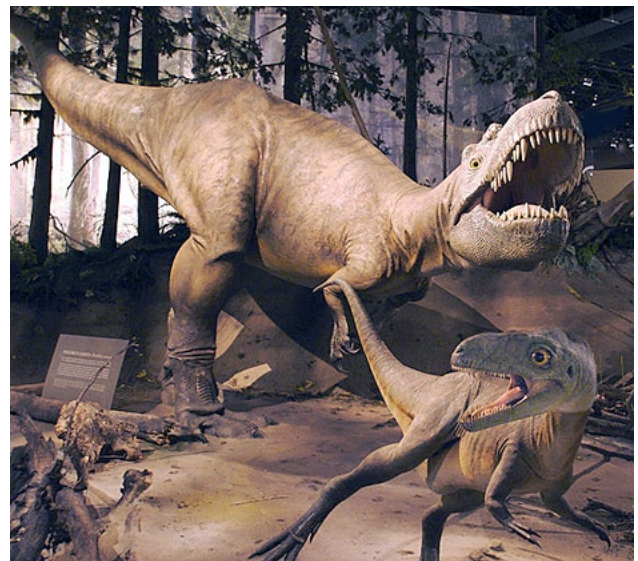


Figure 18. Two of the 2007 Brian Cooley-built 1:1 scale *Albertosaurus* models for the TMP's Cretaceous Alberta diorama exhibit. Photograph by the author.

2007

The spring of 2007 saw the exciting new “Cretaceous Alberta” exhibit (fig. 18) open at the TMP (Fooks 2007; Murray 2007; Williamson 2007). Older museum visitors will recall a darkened room with a giant globe of the Earth slowly rotating in space. That exhibit was gutted for the new *Albertosaurus* display.

The new exhibit was first announced in the late summer of 2006 (Leahul, 2006). The Provincial funding targeted Government-run museum and historic sites to boost their exhibits and this money helped enable the *Albertosaurus* exhibit and other major gallery upgrades at the TMP (Ridgley 2007b; Williamson 2007). The models were again made by Brian Cooley (Tousley, 2004) of Calgary.

Life-sized *Albertosaurus* sculptures arrived at the Tyrrell Museum on October 12, 2006 (Anonymous 2006a, c; Ridgley 2006a, b). The largest sculpture was manoeuvred through the museum’s shipping dock and back hallways with just centimetres to spare, though this eventuality was predicted and Cooley had built some 1:1 scale mock-ups of the Tyrrell Museum’s loading bay door and hallway spaces in his shop to ensure an okay (if tight) fit upon delivery.

This large exhibit (fig. 18) is based on research derived from the extensive work conducted by the TMP (and later by the University of Alberta) at the Dry Island Buffalo Jump Provincial Park *Albertosaurus* bonebed. Three adult and one juvenile *Albertosaurus* and other small vertebrates are depicted in a realistic 1:1 scale walk-through forest diorama covering an area of 283.5 m². Cooley first made 1:10 scale epoxy resin models of these sculptures to use for reference

while constructing the larger ones. Later, moulds of all the epoxy models were made and ten bronze castings of each were produced by a foundry in Ontario. Two of the models were later auctioned off for benefit events. At the time of writing one of the scale models was in a Drumheller lawyer’s office, the second sent to points unknown and the rest are presently stored at the TMP.

A head of one of the 1:1 scale adult animals was recast, “trophy mounted” and sold to a private individual at the Dinosaur Research Institute’s fundraising dinner in Calgary in November, 2007.

In 2006, Bryan Pfahl from Calgary created another *Albertosaurus* skull carving (fig. 19a, b), this one a half skull split down the middle. He also scratch-built an *Albertosaurus* femur and a right pes (fig. 19c). These creations were set props for a 2007 British and Canadian children’s television show called *Dinosapien* which was filmed in Bragg Creek, Alberta, and Drumheller (Anonymous, 2011d). Fifteen episodes of the show aired in 2007 only; a hoped-for second season never materialized.

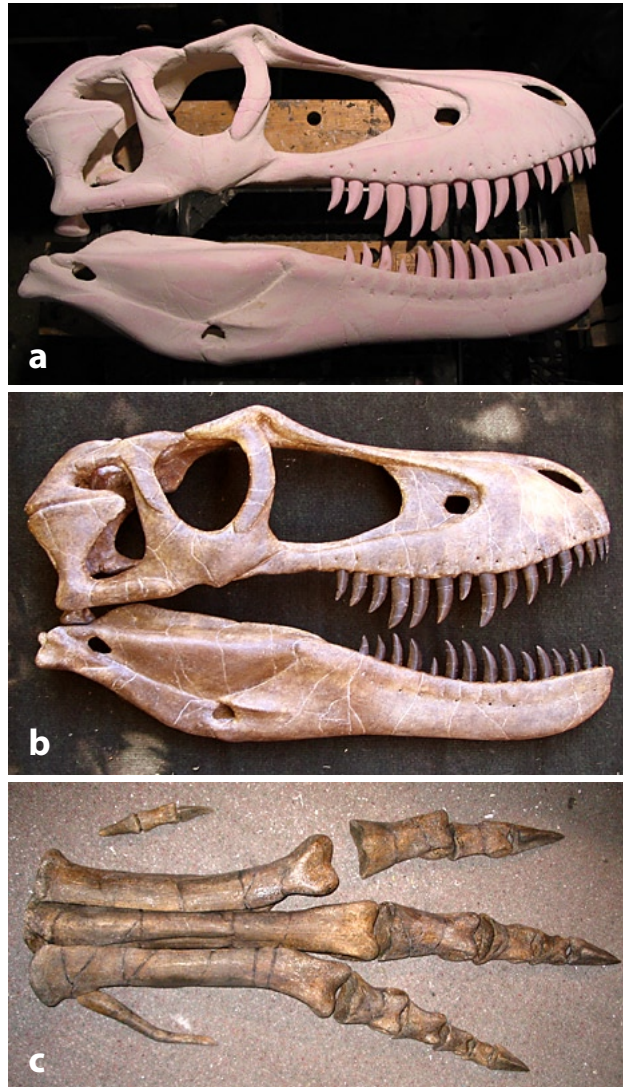


Figure 19a-c. *Albertosaurus* skull and right pes reconstructions by Bryan Pfahl showing pink insulating foam inner core (a), finished skull (b), and reconstructed pes (c). Photographs courtesy of Bryan Pfahl.

2008–2009

2008–2009 saw the erection of another life-sized *Albertosaurus* sculpture,

this time at the store and gas station/post office just southeast of the hamlet of Patricia, Alberta, near Dinosaur Provincial Park (fig. 20a, b). It replaced a much smaller and exceedingly ugly *Tyrannosaurus* model⁴ which was vandalized and destroyed in late February, 2007. It seems late one night someone lassoed the old sculpture, tied the rope to their truck bumper and then dragged the hapless dinosaur down a gravel road for several kilometers at a high rate of

speed until the sculpture was ruined and abandoned in the ditch (Brown, 2007). Rumor has it that several weeks before this happened, a man in a local bar claimed he would do this some day. The then store owner tried to make an insurance claim on the ruined sculpture, asking the author to confirm that the monstrosity was worth \$30,000! A 2010 call to the Brooks RCMP detachment revealed that the culprit was never caught.

Despite its ugly appearance the *Tyrannosaurus* model was a fixture in town and a popular landmark and reference point for many, so the local residents wished it to be replaced. \$15,000 was raised locally and the Alberta Government provided a matching grant under CIP (Community Initiatives Program). A woman in Drumheller was soon contracted to build the new dinosaur model. The basic internal metal framework was done, but then a double family tragedy occurred, the details of which are best left unsaid. She was unable to complete her part of the project so East Coulee residents Wayne Marshall, assisted by his daughter Dessie (names included on a plaque affixed to the dinosaur's inner thigh) had to take on the entire project. The replacement sculpture was built mainly in Drumheller by Wayne and Dessie in 2008–2009. A newspaper article (Anonymous, 2008) indicated that the headless and footless sculpture, which completed weighs 2,700 kg (6,000 lbs.), was mounted outside in 2008 with the feet arriving in the spring of 2009. Final assembly and mounting of the sculpture, 9.75 m (32 ft.) long, occurred early in the summer of 2009 (Brees, 2009; Stanway, 2009).

The resulting *Albertosaurus* is an odd creation, with weak lower jaws (no indication whatsoever of the dorsally curving surangular bones; fig. 20b), overly-muscled hind legs but curiously skinny knees and other proportional issues that detract from the quality of the sculpture. The head is too small and the neck too long and skinny, giving it an emaciated, “pencil-necked geek” appearance. For well over a year, the eyes were only painted white and stared blankly at the viewer. In the summer of 2010 the white eyeballs were painted silver, now transfixing the viewer with a steely-eyed gaze. When last seen in August of 2010, some of the seams on the body



Figure 20a, b. 1:1 scale *Albertosaurus* model outside the Patricia, Alberta gas station and store, 2010. Photographs by the author.

and legs were starting to show and were beginning to come apart; so how long this sculpture will last is uncertain, but hopefully a long time. Given its weight and its mounted position atop large boulders, it seems unlikely that some drunken redneck will succeed in dragging it away again. The \$30,000 raised not only paid for the *Albertosaurus*, but will also fund several other dinosaur sculptures to be set up in the Patricia rodeo grounds and along the road leading to Dinosaur Provincial Park.

Another Lillian the *Albertosaurus*, this time a digital one, made its appearance in Gramling (2009). This creation was the work of palaeoartist and science educator Craig Dylke. Dylke places his digital dinosaur (and digitally rendered dinosaurs of other species) in familiar, modern settings such as dinosaur galleries in museums and in outdoor natural settings such as forests.

2010

2010 proved to be a busy year for *Albertosaurus* and popular culture.

For much of the year, the Calgary Zoo featured the *Dinosaurs Alive!* travelling exhibit in the Zoo's prehistoric park. Twenty life-sized Animatronic dinosaurs supplemented the static models of prehistoric animals already there. One of the Animatronic creations was a life-sized adult *Albertosaurus* (fig. 21) that roared, opened and closed its jaws, blinked, and



Figure 21. Animatronic 1:1 scale adult *Albertosaurus* at the Calgary Zoo in the summer of 2010. Photograph by the author.

moved its arms. The model was made by Dinosaurs Unearthed (Dinoking Tech Inc.) in Richmond, British Columbia. For more information on the company and its prehistoric products see <http://www.dinosaursunearthed.com>

In the summer, a prehistoric park called the Jurassic Forest opened near Gibbons, Alberta, just northeast of Edmonton (Dafoe, 2010; Kinjerski, 2010; Ma, 2010; Anonymous, 2011b–c). The 16 ha (40 acre) park features 2.3 km of walking trails and dozens of dinosaurs and other prehistoric animal sculptures including one adult *Albertosaurus* (fig. 22). It is set in a deciduous forest and interacts with three *Styracosaurus* models.

Also in the summer of 2010, the Royal Canadian Mint released a series of collector coins called the “Dinosaur Exhibit Series”. The second release in the 2010 series of three, which occurred July 21, featured a Brian Cooley *Albertosaurus* sculpture—the one currently displayed outside the TMP (fig. 9). The 35 mm diameter brass-plated coin (fig. 23a), weighing 12.61 g, features lenticular lens technology on one side which allows the *Albertosaurus* sculpture to “move”. A portrait of Queen Elizabeth II appears on

the obverse side of the coin which had a face value of 50 cents but which initially sold for CDN\$24.95. The coin came in a full colour cardboard folder (fig. 23b) and six small collector cards featuring prehistoric animals and museums. For more information on the coin, see Anonymous (2010b), Fries (2010), Royal Canadian Mint (2010), and Smylie (2010a).

The TMP celebrated its 25th Anniversary on September 25, 2010. Part of the celebrations included the Royal Canadian Mint presenting the museum with a framed copy of the *Albertosaurus* coin. Crowfoot Member of Parliament Kevin Sorenson said: “This collector coin has immortalized an important element of Canadian heritage which dinosaur hunters and coin collectors of all ages can cherish for years to come.” (Kolafa, 2010).

The final *Albertosaurus*-related event of 2010 was the discovery of hadrosaur bones and *Albertosaurus* teeth during a deep underground sewer construction project in Edmonton (Anonymous, 2010c, d; Loyie, 2010a, b; and others). The lure of *Albertosaurus* as a cultural icon was amply revealed when it was realized there were more articles and interest generated



Figure 22. 1:1 scale adult *Albertosaurus* model at the Jurassic Forest dinosaur theme park near Gibbons, Alberta. Image from Dafoe (2010).

on the discovery of “Sewersaurus” than on the TMP’s 25th Anniversary celebrations held in late September: A May, 2011 Google search for *Albertosaurus* + sewer + Edmonton yielded 2,210 hits!

***Albertosaurus* as a Provincial Fossil symbol?**

A good number of countries, states and some Canadian provinces have an “official” fossil representing their administrative districts (Anonymous, 2009d). It is surprising then that a dinosaur-rich province

such as Alberta should have the lowly petrified wood as its provincial fossil (more often identified as the provincial stone or mineral⁵). Petrified wood is found nearly everywhere in the world and is therefore hardly unique or representative of Alberta's fossil riches. Certainly something more relevant to Alberta's prehistoric past and more lively, dynamic and interesting such as *Albertosaurus*—named for our province in 1905 (Osborn, 1905)—would be much better suited for this role.

Dinosaurs are pop culture (Mitchell, 1998; Sanz, 2002; Thomson, 2005; Switek, 2010; Wikipedia, 2010a-b; Glut and Brett-Surman, 1997). *Albertosaurus* was named for Alberta, living in the province long ago, and was a large, active predator, ever popular with the public. With its increasing popularity in a



Figure 23a, b. *Albertosaurus* collector coin and folder released by the Royal Canadian Mint in the summer of 2010. Figure 23a from the Royal Canadian Mint website; 23b by the author.

number of pop culture events of late, it is certain that *Albertosaurus* will continue to play a prominent role and appear in various aspects of Canadian popular dinosaur culture for many years to come and is thus an ideal, representative Albertan fossil icon.

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access to microfilm searches. Mr. Wei Yew (Edmonton) related the history of the Tyrrell Museum's logo development. Michael Milbourne provided information on his *Albertosaurus* sculpture. Tom Zariski, former principal of the Drumheller High School, provided details on the status of the *Albertosaurus* sculpture "Lillian". Bob Campbell (The Exploration Place, Prince George, BC) related the history of the Brian Cooley-built *Albertosaurus* model in their facility. Anne Marie Philipsen of the Patricia Ag Society provided many details on the work done on the Patricia, Alberta *Albertosaurus* sculpture. Andrew Leitch provided his recollections of the fate of the John Kanerva dinosaurs at the Calgary Zoo. The author is grateful to Al Rasmuson (Dinosaur Research Institute, Calgary) for giving the author a 2010 *Albertosaurus* coin and to Jurassic Forest and the Calgary Zoo regarding *Albertosaurus* sculptures in their care. Thanks also to Donna Martin (Dinosaur Provincial Park) and Becky Kowalchuk, Andy Neuman and Warren Nicholls (TMP).

Text notes

1. Some researchers believe *Daspletosaurus* also occurs in the Horseshoe Canyon Formation. The University of Alberta excavated a rare *Daspletosaurus* from the Oldman Formation of Dinosaur Provincial Park in 2011.
2. Many of the concrete dinosaurs made by Seland and others are regular targets of vandals in Drumheller. Most of the ceratopsian models in town lack orbital horns as they have been stomped and kicked off by vandals. It is easier to simply round the horn bases off with new concrete than reconstruct horns that will just be smashed off again. Seland's sauropod model was destroyed by vandals in January 2011 (Smylie, 2011; Kolafa, 2011). A number of his sculptures were placed near drinking establishments, which is just asking for trouble.
3. The specimen they are referring to is *Albertosaurus* partial skeleton TMP 1981.010.0001.
4. This exceedingly ugly dinosaur model was at the gas station for about twenty years. Who built it is uncertain. It may have been built in Brooks; one of the author's contacts thought they saw it appearing in parades in Brooks, towed behind a light truck on a small trailer.
5. Petrified wood was adopted as Alberta's provincial stone on May 18, 1977 due to efforts by the Alberta Federation of Rock Clubs. Alberta's official gemstone is ammolite, made from the crushed shells of the Late Cretaceous ammonite *Placenticerias*.

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Fossils in the News

Edited by Howard Allen

CBC News online, May 6, 2011

Fossil of a giant ant found in North America

DENVER—Visiting the Denver Museum of Nature and Science, palaeoentomologist (fossil insect guy) Bruce Archibald, of Simon Fraser University (Burnaby, BC) was shown some insect fossils from the Green River Formation of Wyoming. Among the specimens was a winged queen ant of alarming proportions: nearly the size of a hummingbird. The fossil—subsequently named *Titanomyrma lubei* by Archibald—from the early Eocene (approx. 50 m.y.a.) is similar to giant ants of the same age found in Germany, but the first of its kind seen in North America. Since the German and Wyoming ants are apparently related, the discovery begs the question: how did the two then-subtropical populations become so widely separated, when the only direct

migration route was across much cooler intervening territory (*i.e.* Greenland)? Answer: Climate Change! (see next item). Archibald opines that a brief period of rapid Global Warming gave the ants just enough time to scoot over to North America and establish a new population—and eventually a new species. See www.cbc.ca/news/technology/story/2011/05/06/science-giant-ant-archibald.html

Calgary Herald online, May 17, 2011

Study on ancient reptiles shows how climate change could impact wildlife

RHODE ISLAND—This is one of those journalistic gems that leaves one scratching one’s head and wondering “where’s the news?” Apparently, a team led by “scientist” Jessica Whiteside of Brown University has discovered that different extinct animals lived in different climatic zones (who would have guessed?) and that rapid changes to said animals’ favoured climates could result in their extinction(!). Whiteside is quoted: “We’re answering a question that goes back to Darwin’s time . . . What controls where organisms live? The two main constraints are geography and climate.” How ’bout that?

The us team, examining a “family of primitive reptiles,” including a procolophonid found in Nova Scotia rocks, found that these animals favoured relatively arid, northern portions of the Triassic supercontinent Pangaea. Their contemporaries, on the other hand, a group of “proto-mammals” called transversodont cynodonts, lived in the wetter parts of southern Pangaea. Huh. The study also postulates that the two very different groups of organisms had very different methods of excreting waste products, suited to their home environments. And here’s the zinger: Climate Change likely drove both groups to extinction! Of course, the bottom line of all this is “a clear warning about the broadly predictable and potentially unforgiving effects of climate change on species that are adapted to particular habitat conditions. . .”

If anything actually *new* was revealed by the study, it certainly isn’t communicated in this article, which simply states the obvious, probably does a disservice to the researchers, and appears to have been written solely to parade the fashionable bogeyman of Climate Change. www.calgaryherald.com/technology/Study+ancient+reptiles+shows+climate+change+could+impact+wildlife/4799369/story.html

[Thanks to Phil Benham and Chris Sowden for sending in links –ed.] □

APS Balance Sheet for 2010

Revenues

Memberships	1685.00
US\$ Exchange	1.01
T-shirts	225.00
Pins	12.00
Field Trip Guides	8.00
Abstract Volumes	0.00
APS Book	3116.73
Shipping and Handling	210.00
Misc. Sales	3.00
Refreshments	0.00
Field Trip Fees	325.00
Workshop Fees	805.00
Donations	80.00
Symposium Abstract Sales	350.00
Symposium Donations	545.13
Library Book Sales	0.00

Subtotal Revenues 7365.87

Plus Revenue Received in 2009 for 2010

2010 Membership Fees	1590.00
2010 Workshop Fees	40.00
Savings for 2010 Symposium	1720.00

Subtract Revenue Received in 2010 for 2011

2011 Memberships Fees	680.00
Donations for 2011 Symposium	799.00
2011 Symposium from Workshop	150.00

Total Revenues 9086.87

Expenses

Bulletin Printing	294.75
Bulletin Postage	211.97
Speaker Expenses	181.04
PO Box Rental	136.50
Membership Printing	107.62
Membership Postage	78.71
Field Trip Expenses	325.29
Workshop Expenses	426.15
Symposium Speaker	1854.33
Symposium Abstract Printing	230.10
Postage for Sales	159.45
Website Expenses	377.40
Refreshments	0.00
Bank Charges	103.20
Miscellaneous	0.00
APS Book print/promotion	3285.85
Library book purchases	0.00

Subtotal Expenses 7772.36

Plus Expenses paid in 2009 for 2010

Minus Expenses paid 2010 for 2011

Total Expenses 7772.36

Excess of Revenues over Expenses = \$1314.51

For Years 2002 to 2009

Total Fund Raising Proceed:	3,723.50
Total Fund Raising Costs	354.97
Net Fund Raising	3,368.53

Inventory Sale Value \$2,458.00
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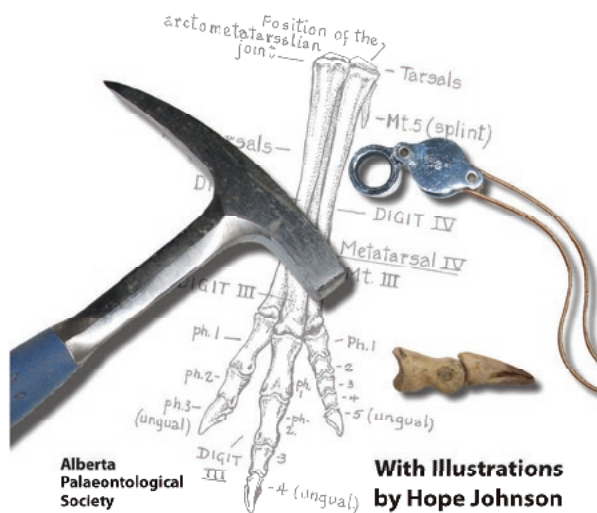
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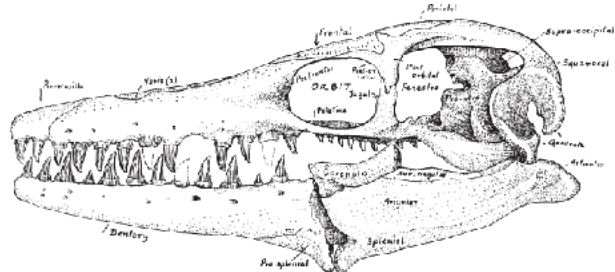
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