

Alberta

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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
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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.

Friday, September 21, 2012—Dr. Alan Ingelson, University of Calgary.
Palaeontological Resources Law.

Friday, October 19, 2012—Dr. Garnet Fraser, MD.
Tracks and Culture, Lost and Found: Canadian Rockies and Inca Ruins (See Page 3).

Friday, November 16, 2012—Scott Persons, University of Alberta.
Dragon Trails: An Asiatic Dinosaur Expedition and a Study of the Convergent Evolution of Winged Archosaurs.

Friday, December 13, 2012—*Annual Christmas Social.*

ON THE COVER: Blossom of *Florissantia quilchenensis* Mathewes and Brooke, middle Eocene, Kamloops Group, McAbee, British Columbia. Specimen width is 33 mm. Photo by Howard Allen. [See news story, Page 8.](#)

Upcoming Events

October

Garnet Fraser

British Columbia Medical Doctor

Tracks and Culture, Lost and Found: Canadian Rockies and Inca Ruins

Friday, October 19, 2012, 7:30 P.M.

Mount Royal University, Room B108

Like spotting deer in the field, the key to finding dinosaur tracks is practice. Images absorbed over time allow the hunter to recognize the pattern. Few places on Earth offer the number and variety of dinosaur tracks exposed at the deep Cretaceous Monroe Trackways in Kakwa Park. The near-vertical aspect and remote location provide challenges for access and casting along with striking images.

Inspiration for Doyle's *Lost World*, Bolivia remains a frontier, rich with dinosaur tracks and ancient culture, largely untouched by science since the collapse of the Inca Empire. On Lake Titicaca, The Island of the Sun was an important spiritual destination for Inca pilgrims. Tourist brochures point the way to a mysterious pair of tracks supposedly made by the Sun God. The tracks are similar in morphology to those of a giant human or sauropod. Not featured on any brochure is the pair of theropod tracks nearby.

On the southeastern fringe of the Inca territory can be found the pre-Inca Quechua ruin of the basin of Maragua. Between the stone dwellings and the vaulted ceremonial ridge above there is a sauropod trackway overlooked by the modern world.

Inca skeletons and burial cloth remain in tombs made from sun-cracked slabs of sandstone on a remote cliff above a gorge at the Quechua Fortress of Lama Chaqui. Many thousands of dinosaur tracks are known to local guides, some 20 km away in Park Toro Toro, of which a small fraction have ever been seen by any scientist. The theropod trackway in the gorge under Lama Chaqui had not been recognized by modern Quechua. A circular depression in the same gorge under the tombs may have been used as a

sacrificial cistern and may contain theropod tracks.

At the spiritual center of Tiwanaku, in the Subterranean Temple, stands a monolith carved on two sides with the image of the serpent, representing the underworld. Above the serpents are horizontally and vertically oriented images attributed to the puma, with characteristics perhaps more similar to a dinosaur. Whatever the animal represented, identical images occur in a life-like pose immediately above the same image turned 90 degrees on end, immediately above the serpent. The upright animal may represent a living animal above a fossilized animal on the surface above the subterranean world. With no written record and most of the Inca artifacts destroyed by the Spanish, Inca spiritual belief remains open to interpretation. The passage of the Inca spirit through various animals is a widely accepted interpretation, culminating with the serpent as the purveyor to the subterranean afterlife.

Biography

Raised in the outdoors of British Columbia, Garnet Fraser studied physiology at McGill and published research in cell biology. He graduated from Queen's Medical School in 1995 and has practiced Family Medicine in BC ever since. His interest in extinct wildlife started in 2003, when **Brian Monroe** and Garnet Fraser realized the significance of the dinosaur tracks they had found in Kakwa Park. He led teams of skilled volunteers to collect photos, tracings, and replicas from the Monroe Site in 2004 and 2005. In the Wapiti Formation southeast of Tumbler Ridge, in 2004, he found the natural cast of a large theropod footprint with skin impressions. Surrounding scandals inspired **Vivien Loughheed's** investigations leading to her book, *Sidetracked*. [see *Bulletin, June 2012, p. 8 -ed.*]

Garnet Fraser has since found professional collaboration in Argentina, and discovered four significant dinosaur trackways in Bolivia. Finding dinosaur tracks in close proximity to Inca and Quechua ruins sparked an interest in the palaeontology of ancient civilizations. He is currently developing a wolverine model for dromaeosaur behaviour, with potential to explain the sickle claw, herbivore defensive structures and the origin of flight. □

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A Friday the 13th to Remember

Story and photos by Dan Quinsey

I was eager to attend the Alberta Palaeontological Society field trip to the southern Alberta badlands scheduled for Saturday and Sunday, July 14 and 15, 2012. Our travel day would be Friday the 13th, an apparent omen. Looking back, the sequence of events that transpired would rival even one of Les Adler's best stories.

A few weeks prior to the trip, I had torn the rotator cuff in my left shoulder. If you have never experienced this wonderful feeling, a torn rotator cuff weakens the mobility and strength of your shoulder muscles. The pain and weakness radiates down the arm, feeling like an icy knife in the joints. It is difficult to sleep on either side of the body with this injury.

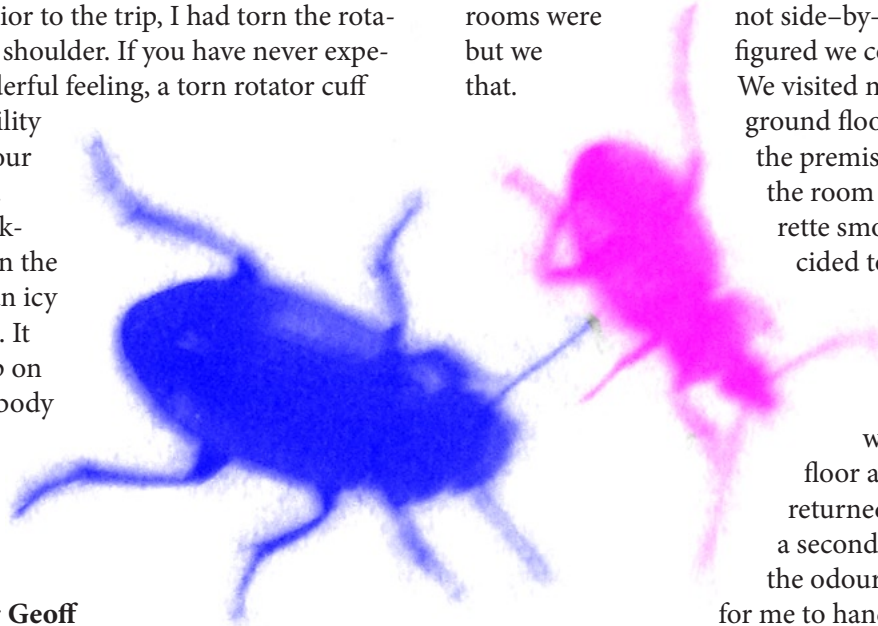
Due to circumstances beyond our control, my fossil collecting partner **Geoff Barrett** and I were given seven days' notice to book accommodations in Medicine Hat for the Friday and Saturday evenings. This was a chore in itself as teams from around the country were participating in several sporting events that weekend, and the nearby town of Redcliff was celebrating its Centennial. Needless to say, almost every hotel, motel and inn was booked solid. We managed to book two side-by-side non-smoking rooms at a motor inn which will remain nameless for this article.

Friday the 13th arrived. The forecast for the

weekend was for very hot and humid weather with a chance of scattered showers. I loaded my gear into my vehicle that morning and headed off to work. I left work at 4:00 P.M. and drove directly to Geoff's house to pick him up. We loaded his gear and began our trip from Calgary to Medicine Hat. Geoff had already had an early dinner; my plan was to eat later in the evening.

We arrived at the motor inn at 7:30 P.M. The rooms were not side-by-side as promised but we figured we could live with that.

We visited my room on the ground floor first, to inspect the premises, only to find the room stinking of cigarette smoke. We then decided to check the other room before considering our options. Geoff's room was on the second floor and seemed fine. I returned to my room for a second time and decided the odour was too much for me to handle. I tried to call the office to complain, only to find the telephone was completely dead. I found myself back in the office to complain about the room and the phone. The owner explained that the rooms had all been converted to non-smoking only weeks earlier: the room was once a smoking room but the mattresses were replaced and carpets shampooed, which should have sufficed. It didn't! I was offered the only room left—on the opposite side of the building—but also on the ground floor. Aside from a slight perfume odour, the room seemed fine.



I loaded my gear into the room and set out for dinner at a nearby seafood restaurant. Everyone knows fresh seafood shouldn't smell fishy: this is an indication it is on the downslide. When I entered the restaurant, the entire place smelled very fishy. I opted to try the ribs instead of the fish. This was the worst experience I ever had. I should have known better than to order ribs from a restaurant that specializes in fish. They were mostly cartilage and tasted horrible—I would have done better with the fish. I didn't feel like having it out with the management; I just wanted to get back to my room to cool off and get some sleep for the day ahead. I returned to my room feeling unsatisfied, tired and hot from the long day.

“I entered the office with a carefully worded comment card in one hand and a bag of beetles in the other just as the RCMP showed up.”

By this time, it was almost 10:00 P.M. and all I wanted to do was get some rest. I like to have some background noise when I sleep, usually from the radio. Unable to get the radio or alarm to work, I decided to turn on the television and find a station I could fall to sleep with. The heat was unbearable and the ability of the air conditioning unit to cool the room was poor. My rotator cuff injury would not make sleeping any easier. I decided to sleep on top of the covers.

Just as I was starting to doze off, I felt something tickling my arm. I brushed it off and got up to see what it was. A small beetle had decided to join me in bed and was now on my pillow. I took the pillow over to the sink and shook it off. I didn't actually see it fall into the sink or down the drain. After inspecting the pillow and floor, I assumed it did go down the drain and chased it with some water and the stopper. I returned to my bed and checked the sheets and between the mattresses for more unwanted guests: I found none. Obviously this had to be a one-time event and I went back to bed. A few minutes later I felt another tickle and found a second beetle. Was this the same one? Maybe it had missed the sink after all. This one received a burial at sea in the

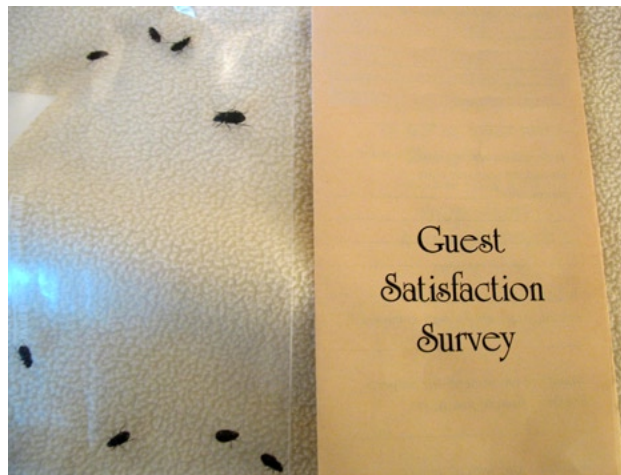
toilet and the room went through another inspection including lifting the box spring to check around the bed frame.

After sitting up in bed for about an hour, watching for more pests, I decided the coast was clear and gave rest another attempt. Only moments passed before I felt something crawling on me again. This time there were two beetles in the bed. I immediately got rid of them and checked the room again—this time to find more beetles on the floor and along the baseboards. I started flushing them and noticed they were coming in under the door leading into the hallway. I opened the door to find at least a dozen more beetles outside the room.

It was now approximately 2:30 A.M. and I was collecting all the John, Paul, George and Ringos I could find, placing them in a zip-lock bag. I took digital pictures of the pests both in the bag and in their natural habitat (the room and hallway) for evidence and called the office to complain. I told the desk clerk, “I am not happy with my room; I haven't been able to sleep as the room is crawling with pests.” She replied, “Oh, you mean the beetles?”

I just about lost it! She suggested that the management would be willing to give a 15% discount on the room. As calmly as possible, I informed her that Geoff and I would accept nothing less than a full refund for the rooms for that evening and the next evening we had booked. She called the owner who agreed to the terms.

We had booked the rooms through Hotels.com. The desk clerk informed me that Hotels.com would be willing to refund our money, providing they received confirmation of a refund from the motor inn, which they were prepared to do. She provided me with a 1-866 number to reach Hotels.com to initiate the process. I told her I would be waiting about an hour before I would wake up Geoff, as we



had booked the rooms on his credit card. While I waited, I flushed some more beetles and made several calls to hotels in the area. I was lucky to find two rooms for Saturday evening at the Quality Inn.

I called Geoff at 5:00 A.M. hoping he would be awake. I explained the events of the evening and he came down to my room to witness the infestation. We returned to his room with plans to gather the paperwork necessary to make the 1-866 long-distance call. During our return visit we noticed the beetles on the second floor as well. They had not yet reached Geoff's room located further down the hallway.

The phone system would not allow us to make the 1-866 call. I tried dialing "9" for an outside line as the instructions on the phone indicated, but was not successful. I went over the instructions a second time and found ". . . for a long distance call, dial '9' then '1' to get an outside line." I dialed "9" then "1" followed by the 1-866 number, which still did not seem to connect. I was holding the receiver away from my ear as I was dialing and did not realize I had inadvertently dialed "9-1-1" in my sequence of numbers and did not hear the dispatcher asking the nature of my emergency. By the time I put the receiver to my ear, the dispatcher had stopped talking and it sounded like a dead connection. I hung up. Geoff and I then called the desk clerk to inform her we were on our way to the office to place the call from there.

I entered the office with a carefully worded comment card in one hand and a bag of beetles in the other just as the RCMP showed up. After a flash of realization at what had transpired, and a good explanation, the understanding officer left us to make our call. The desk clerk called Hotels.com on our behalf and faxed the appropriate information for the refund to be processed. We used the phone one more time to confirm our reservations at the Quality Inn and left to begin our two-and-a-half-hour trip to meet the Royal Tyrrell Museum's **Dr. Don Brinkman** at the Pinhorn Grazing Reserve to assist in the collection of microfossils.

It spit rain the entire trip. We bounded around in four-by-fours for almost two hours at the reserve following Don Brinkman while he searched for the entrance to the site. It seems that a number of new fences and gates had been erected since his last visit to the area. You can quite imagine how my shoulder now felt, being secured by a seatbelt through all this. We eventually found the site and made our way into the coulee, where I promptly slipped and fell in the wet bentonite. It was by now almost noon, with the temperature approaching 30 degrees. I am tired,

hungry, covered in bentonite and my shoulder is inflamed. And now in my weakened condition, I am concerned about a possible bout of heat exhaustion.

Geoff and I decided to leave after a couple of hours of collecting for Don as I had been awake for almost thirty-two hours straight. A cold bottle of lemonade was waiting for me back at the truck, a quarter of which I spilled on myself, struggling with the seal.

The Quality Inn was a welcome sight. I was able to shower and clean my clothes, get something good to eat and some well-deserved sleep. Geoff could not wait to call his wife **June** to relate the story which left her in stitches. My wife **Val** had the same reaction. You get no sympathy from wives.

Sunday was cooler and we made it to our second destination in Manyberries, then home in one piece.

Identification of the beetles is difficult but I am quite sure they are of the Tenebrionidae family. □

Sort Microfossils in November

By Mona Marsovsky

Join us on **November 3 and 17** as we sort through samples provided by **Dr. Don Brinkman**, of the Royal Tyrrell Museum, to find fossils using microscopes provided by Mount Royal University (MRU). All fossils we find will be kept for research.

Sessions will take place in Room B213 at MRU from 1:00 to 3:30 P.M. If you let me know that you plan to attend (phone 403-547-0182 or **giftshop@albertapaleo.org**), I can inform you if we need to cancel. No experience is required. Bring tweezers to pick the tiny fossils and a pen to label your finds.

Watch the December *Bulletin* for upcoming sorting sessions in January and February, 2013. □



Photo: Dan Quinsey

Souris Fossils

By Murray Smith

Souris is a town 50 km southwest of Brandon, Manitoba. Here a unique glacial deposit attracts the attention of rock collectors and palaeontologists. These glacial deposits have a variety of agates, jasper, epidote, and other colourful rocks. However, these pits also contain an amazing variety of fossils. Manitoba has deposits of Ordovician, Devonian and Cretaceous fossils in

limestone and shale strata. The fossils in the Souris rock pits originate in many different periods and are scattered throughout the deposit. The focus of this article is to attempt to name and suggest the ages of the fossils found in the Souris deposit.

The fossils are found in a variety of matrices such as dendritic clay, limestone and rarely in jasper or agate. Figure 1 shows one of the two pits that have been used to retrieve gravel, mainly for roads. They are easily accessible and collecting is available.

Some of the fossils are found elsewhere in Manitoba in the Ordovician, Devonian and Cretaceous deposits found further north. Other fossils are indicative of material found south of Manitoba in the United States. It is believed that glaciers deposited fossils as they extended into the area while other fossils were deposited as glaciers retreated. Some of these fossils are found nowhere else in Manitoba. Although the fossils may not be important to professional palaeontologists, as they are not *in situ*, the pit is an exciting site for amateurs, as one never knows what may be hidden amongst the other semi-gemstones that occur at the Souris site.



Figure 1. A good day for fossil hunting at the Souris gravel pit. Photo by Murray Smith.

Some of the oldest fossils found may be the stromatolites, which are ancient algal formations. Stromatolites were thought to be extinct until they were discovered in Shark Bay, Western Australia a few years ago. Another algal formation found is sections of *Receptulites* sp. from the Ordovician to Permian periods.

Corals such as *Favosites* sp., *Halysites* sp., *Thecia* sp.; tetracorals (horn corals) *Synaptophyllum* sp., *Arachnophyllum* spp., *Hexagonaria* sp. (Petoskey coral), *Chonophyllum* sp., *Heterophrentis* sp.; and the hexacoral *Montastrea* sp. have been found. Some of these corals occur in other Manitoba Ordovician and Devonian deposits.

Echinodermata fossils, which include starfish, are represented by a few finds of crinoid stems. These few stems occur in limestone and are only sections of the stems which are unidentifiable.

Several species of Brachiopoda have been found in Souris, Manitoba. One of these fossils is found in a jasper matrix. The brachiopods, representing several genera, are *Whitfieldella* sp., *Schizocrania* sp., *Trigonirhynchia* sp., *Strophonella* sp., *Schuchertella* sp. and

“The pit is an exciting place for amateurs...”

Spirifer mainly from the Devonian Period.

Two Pelecypoda or modern bivalve shells have been found. These fossils are *Paracyclas* sp. from the Devonian Period and *Inoceramus* sp. from the Cretaceous Period. The *Inoceramus* sp. fossils still have the mother of pearl on them and occur elsewhere in Manitoba.

Gastropods (snails) are also found in a solid matrix. Gastropod fossils are *Raphistoma* sp. from the Ordovician Period and *Turritella* sp., Cretaceous Period to Recent. The *Turritella* sp. fossils are especially well preserved in an agatized matrix and are quite attractive, as seen in Figure 2.



Figure 2. Agatized *Turritella* gastropod fossils from Souris. Photo by Murray Smith.

There are also several species of Cephalopoda found in the deposit. The nautiloid *Dawsonoceras* sp. from the Ordovician Period and *Michelinoceras* sp. have been found in a limestone matrix. However, the ammonites from the Cretaceous Period are mostly found in dendritic clay. These include *Baculites* sp., *Beudanticeras* sp. and the nautiloid *Eutrephoceras* sp. What is surprising is the few small pieces of “am-molite” which have recently turned up. These fossils appear to be imported from southern Alberta.

Recently ten *Diacalymene* sp. trilobites from the Devonian were found by Frank Grobowski, the owner of The Souris Rock Shop. These fossils represent the Devonian Period and are very similar to those from Morocco, Africa. Further, one *Phacops rana* fossil, also from the Devonian, has been found.

Mammalian fossils have been found in isolated instances as there are no sites in Manitoba with these fossils *in situ*. However, the Souris deposit has yielded several species of mammalian fossils from the Cenozoic Era over the years. These fossils include mammoth bones and teeth (*Mammuthus* sp.), as well

as bones from horses (*Equus* sp.) and a camel (*Camelops* sp.).

This deposit has also yielded several fossil plants. Several samples of *Neutropteris* sp. have been found along with two unidentified deciduous leaves from the Eocene Epoch. The leaves are in excellent condition in a very hard matrix.

Needless to say the glacial deposits near Souris, Manitoba contain an exciting potpourri of fossils representing many millions of years. These pits are open to the public, with permits costing approximately \$15.00 per car. Further information regarding this site is available from:

The Rock Shop
Box 1060
Souris, Manitoba R0K 2C0
Phone (204) 483-2561
Email sourisrockshop@mts.net

[Murray Smith is a member of the APS and an amateur palaeontologist in Brandon, Manitoba.] □

Fossils in the News

Edited by Howard Allen

CBC News British Columbia online

July 20, 2012

McAbee fossil “gold mine” protected by BC

VICTORIA, BC (CP)—It’s official: the McAbee fossil site, off the Trans-Canada highway between Kamloops and Cache Creek, BC, has been given formal status as a protected Heritage Site (*Bulletin*, March 2012, p. 13). A more detailed explanation can be found on the BC Government web site, www.for.gov.bc.ca/land_tenures/fossil_management/mcabee/index.html

Heritage designation was finalized on July 19 of this year. As a result, the site has been declared off-limits to everyone until 2013 at the earliest, pending safety and archaeological assessments. Long-term plans are more vaguely outlined, but include proposals to “zone” the site (“examples would include research areas, area for amateurs with oversight from qualified person [*sic*], area for general access and education”).

[Thanks to Phil Benham for links –ed.] □