

Alberta *Palaeontological Society Bulletin*

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† Alberta Palaeontological Advisory Committee

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

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

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

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

THE BULLETIN WILL BE PUBLISHED QUARTERLY: March, June, September and December. Deadline for submitting material for publication is the 15th of the month prior to publication.

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UPCOMING APS MEETINGS

Meetings take place at 7:30 p.m., in Room **B108** (Except Sept. 22 talk, to be held in Jenkins Theatre).
Mount Royal College: 4825 Richard Road SW, Calgary, Alberta.

June, July, August, 2005—No meetings. See Field Trip Update, Page 4.

THURSDAY, September 22, 2005, 7:30 P.M., Jenkins Theatre—Dr. Scott Sampson, University of Utah:
Late Cretaceous Dinosaurs of Madagascar: Implications for Gondwanan Biogeography.

Friday, October 21, 2005—***APS Open House and Fossil Clinic: Field Trips in Review.***
Bring in your finds and photos from the summer field season!

ON THE COVER: Alberta fossils. Arthropod(?) tracks on a slab of Paskapoo Formation sandstone (Paleocene), southern Alberta. See story, Page 16. Photo by Ron Fortier.

Out of the Ooze and Ready to Cruise

From the desk of the President—Dan Quinsey

Congratulations to all our members and affiliates for their contributions and involvement this past year. We set many goals and have met them all with measurable success. I am proud to be a member of the Alberta Palaeontological Society. And now, we are ready to evolve into the upcoming 2005–2006 term.

Once again, our membership numbers have fluctuated but have remained pretty much the same. As of the Board meeting on May 18, 2005, we are sitting at 133 members in good standing.

The Board of Directors welcomes new faces to an already successful team. I would like to thank the Board for the hard work and enthusiasm this past term. I would also like to thank **David George** for his contributions as Secretary. David has chosen not to run for another position on the Board. **Wendy Morrison** is running (and may be elected by the time this issue is printed) for the position as Secretary and I am sure she will do a great job if elected.

The Social Committee is in need of a new chairperson. **Scotty, Janice, and Jesse Scott** have done a fantastic job in this position but have chosen to step down due to scheduling conflicts in the upcoming term. I speak for everyone in the Society when I say thank you to the Scott family for their contributions.

We plan to encourage those who are camping on our field trips to head toward a campsite picked by the Field Trip Director. We will do our best to make sure campsites are located near amenities so those who are staying at hotels and motels may be near by to visit and join in the social cheer. Thanks to **Ron Fortier** and **Wayne Braunberger** for their efforts in this matter.

While you are collecting this summer, remember to think about the APS collection and save some specimens for the Society. Also, if you have any fossils you would like to donate to education or the CRLC give away box, or other palaeontological materials you would like to donate to the silent table

auction, please contact me and I will make arrangements to pick them up.

We will be soliciting members to display fossils from their collections next May at the CRLC show. The APS booth will have our six showcases on display and we want to make a strong palaeontological presence from this point on.

One concern I have is with the number of abstracts being submitted at our annual symposium. We have a good response from members displaying fossils and submitting posters but for some reason, some of those members are reluctant to submit an abstract. Our Abstract Volume has been shrinking steadily over the past four years and this has to be corrected. If you have any ideas how we can motivate presenters to submit abstracts, please let us know. Your input is valuable.

Our September general meeting activities have been moved ahead to October 21, 2005. We have secured Scott Sampson, host of the television show *Dinosaur Planet* to speak in September. However, we were only able to schedule him on **Thursday, September 22, 2005. The presentation will be at Mount Royal College in the Jenkins Theatre.** Regular APS activities will resume with the October meeting.

The October general meeting will be an Open House with a “Field Trips in Review” theme. We encourage all our members to bring along fossils for identification or display as well as any pictures they may like to share. If you have slides or digital pictures, contact me and I will arrange a photo show. Please include the details of the pictures with your submissions.

Also, we are considering a book swap of some kind during the next term. Maybe we can leave this for the November or December meeting.

In conclusion, I am very excited about the upcoming 2005–2006, 20th Anniversary term and as I have promised in the past, I will continue to do my best to motivate everyone in a direction we can all be proud of. Let’s crawl out of the ooze and get ready to cruise; next term will be one to remember! □

ALERT!

The September 2005 meeting is a
SPECIAL PRESENTATION
THURSDAY, September 22
in JENKINS THEATRE

7:30 P.M.

Donations and Gifts to APS

by Dan Quinsey

On behalf of the Board of Directors and the Alberta Palaeontological Society, I would like to thank all those who have generously given to our Society.

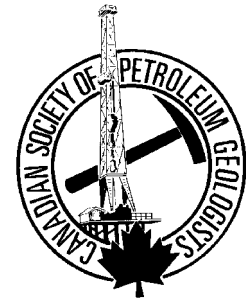
Both APS members and non-members give to the Society in many forms. There are physical donations such as CRLC fossils for the give away box, silent table auction items, APS collection items, and inventory items such as display cases, microscopes, and first aid kits. Others donate valuable time and resources.

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

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

Big Thanks to our Corporate Donors

The Society wishes to express its gratitude for financial support provided by **Shell Canada Limited** (\$1000), **The Canadian Society of Petroleum Geologists** (\$500) and **Mount Royal College** (\$300). This support contributed greatly to the success of our 2005 Annual Symposium in March. □



**MOUNT ROYAL
COLLEGE™**

More Books Donated by Sue Marsland

by Mona Marsovsky, APS Librarian

APS member **Sue Marsland** donated more books from her collection to the APS library on March 19, 2005 (*Bulletin*, March 2005, p. 7). The members of APS would like to thank Sue Marsland for her generous donation. Sue's newest donation includes the following books:

Vertebrates

Extinctions, edited by Matthew H. Nitecki, The University of Chicago Press, 1984.

Mesozoic terrestrial ecosystems. Occasional paper, Tyrrell Museum of Palaeontology, 1987.

The Nemesis Affair: The story of the death of dinosaurs and the ways of science, by David M. Raup. W.W. Norton and Company, New York, 1986.

The dawn of animal life: A biohistorical study, by Martin F. Glaessner. Cambridge Earth Science Series, 1985.

Fossil animal remains: Their preparation and conservation, by A.E. Rixon. Athlone Press, 1976.

Fossil vertebrates from the Late Cretaceous Lance Formation, eastern Wyoming, by Richard Estes. Contributions, University of California Museum of Paleontology.

Missing links, by J. Reader. Collins, London, 1981.

Invertebrates

Treatise on invertebrate paleontology, Part G: Bryozoa. Geological Society of America and University of Kansas Press, 1968.

Evolutionary significance of North American Paleogene insect faunas, by M.V.H. Wilson, 1978.

Plants

Uppermost Cretaceous and Paleocene floras of western Alberta, by W.A. Bell, Canada Department of Mines and Resources, 1949.

Field Trip Guidebooks

Field excursion X01-A01: Structural style of the southern Canadian Cordillera, Guidebook, International Geological Congress, 24th session, 1972.

Central Canadian Rockies and foothills of Alberta. 16th Annual Field Conference Guidebook, Alberta Society of Petroleum Geologists, September 1968.

Maps

Preliminary map, foothills belt of central Alberta, by B.R. Mackay, GSC Paper 43-3, 1943.

Geology

Flysch sedimentology in North America, Edited by J. Lajoie, GSC Special Paper # 7, July 1970.

How to know the minerals and rocks, by Richard M. Pearl. Signet Classics, 1955.

Igneous and metamorphic petrology, by Myron G. Best. W.H. Freeman and Company, 1982.

Petrography: An introduction to the study of rocks in thin sections, by Howel Williams, Francis J. Turner and Charles M. Gilbert, 1982.

Soils and landforms: An integration of geomorphology and pedology, by A.J. Gerrard. George Allen & Unwin, 1981.

Dictionary of geological terms, revised edition. Prepared under the direction of the American Geological Institute, 1960.

Geologic history of Utah, by Lehi F. Hintze, 1982.

Rocks and minerals, by P.R. Shaffer, Illustrated by R. Perlman. Golden Press, New York, 1963.

World geomorphology by E.M. Bridges. Cambridge University Press, 1990.

Strain facies, by E. Hansen. Springer-Verlag, Berlin, 1971.

Petrology of the sedimentary rocks, sixth edition, by J.T. Greensmith. George, Allen and Unwin, 1979.

Bulletin of the Geological Society of America, Volume 55, Number 4, April 1944.

Facies and the reconstruction of environments, AAPG Reprint Series No. 10, American Association of Petroleum Geologists, OK, USA 1974. □

Field Trips 2005

A fall field trip to the Fort Steele trilobite beds (Lower Cambrian) in southeastern British Columbia has been proposed, for the weekend of September 17–18, or October 1–2. If you're interested, contact **Wayne Braunberger** (see below) prior to September 2.

Detailed information on the June, July and August field trips was published in the March 2005 *Bulletin*, which all members received. If you need more information please contact **Wayne Braunberger** at (403) 278-5154 or by email at events@albertapaleo.org. Information is also available on the Society's website, www.albertapaleo.org

Please remember that **all fees are due at the time of registration**. Non-members and unaccompanied minors will not be allowed to attend field trips. All participants will be required to read and sign a release form. □

Children's Field Trip to Canyon Creek

Saturday July 23, 2005

by Dan Quinsey

The deadline for registration for this trip will be **June 30, 2005**. A tentative meeting has been planned for all participants on Saturday July 9, 2005 to review field trip etiquette, safety awareness, and what to expect on the day of the trip.

We have already had a good response to this event and suggest that if anyone is interested, please contact **Dan Quinsey** at (403) 247-3022 or dinodan@shaw.ca for more information. There is no cost to register for this trip. □

Going Under:

Diving on the D/S *Oldenburg*, Vadheim, Norway, 2005

by Darren H. Tanke* and Robin M. Rondeau

Curiously, early Alberta palaeontological fieldwork history has unique ties to nautical military history. In late 1916, the German surface raider SMS *Möwe* (Figure 1) sank the Canadian Pacific merchant ship SS *Mount Temple* (Tanke, 2003; Tanke *et al.*, 2002; Tanke and Enright, 2003).

Möwe began her career in 1914 as the refrigerated banana transport D/S *Pungo*. Soon after launching, WWI broke out and *Pungo* was converted into a heavily armed auxiliary merchant raider and renamed *Möwe*. Despite her humble beginnings, *Möwe* went on to become the most successful surface warship of all time, sinking, mining or capturing nearly 50 Allied ships, including the British battleship HMS *King Edward VII* (Enright, 2004).

Among *Mount Temple*'s general cargo of foodstuffs and over 700 horses destined for war service in France, numerous important Late Cretaceous dinosaur or other rare fossil specimens from today's Dinosaur Provincial Park in southern Alberta were sent to the bottom (Tanke, 2003). Besides personal

grief, the loss of these fossils caused veteran American fossil collector Charles H. Sternberg severe financial hardship until insurance matters could be resolved (Spalding, 2001). The fossils collected by Sternberg and his youngest son Levi were the second of two shipments being sent by them to the British Museum (Natural History) in London, England for study and public display.

Möwe survived WWI, was ceded to England under war reparations, converted back to a banana hauler and renamed SS *Greenbrier*. She was sold to the German shipping firm Deutsche Seeverkehrs AG "Midgard" in 1933, her last designation being D/S *Oldenburg*.

In WWII, she acted as a transport ship in support of Germany's military occupation of Norway. On the evening of April 6, 1945, *Oldenburg* and several other German ships, part of a convoy en route to Germany from the northern Norwegian port of Narvik, split away and took refuge in the narrow harbour at the small town of Vadheim.

The ships counted on protection from air attack provided by the steep mountain valley walls, which around the harbour reach heights of 780 metres (Anonymous, 1988). However, *Oldenburg* was sunk in port the next day by anti-shiping Bristol Beau-fighter aircraft. Despite her anti-aircraft armament, several heavily armed escorts, and shore-based guns,

* While Mr. Tanke is an employee of the Royal Tyrrell Museum of Palaeontology in Drumheller, the SS *Mount Temple* and *Oldenburg* projects are of a personal interest only. The authors' contact information is given at the end of the article.

she was holed below the waterline by armor-piercing rockets (Søgnen, 2003). The attack on her lasted about 10 minutes (Søgnen, 2005).

Flying Officer Tom J. Higgins and his navigator, Warrant Officer Alan J. Mirow of RAAF 455 Squadron are credited for scoring the fatal rocket hits that sank *Oldenburg*. Higgins and Mirow, who were with 455 Squadron eight months and veterans of twenty-nine dangerous operational sorties, were sadly killed several weeks later while leading an attack on enemy shipping and warehouses in South Vaagso, Norway (Gordon, 1995). Their plane, code number UB-B (NE 444) had also participated in the disastrous “Black Friday” raid near Førde, Norway on February 9, 1945 in which 10 Allied planes were shot down, resulting in the deaths of 14 Allied airmen (10 Canadian) and 3 German fighter pilots (Gordon, 1995).



Figure 1. Photograph of a 1:1250 scale model of the WWI German surface raider SMS *Möwe* (later D/S *Oldenburg*). Image modified slightly from: www.german-navy.de/hochseeflotte/ships/auxcruiser/mowe/image1.html

Oldenburg, with her dark ties to early Alberta palaeontological history, caught fire, flooded and sank with a cargo of 2,900 tons of fish destined for the hungry German populace.

Photographs in Berge (2003) and Søgnen (2003) show her issuing thick white smoke from her funnel and numerous places along her length, rolling about halfway onto her starboard side, sinking by the stern (Figure 3, top). She sank within an hour of being attacked.

When moored, *Oldenburg* was positioned parallel to the shoreline. After sinking, she came to rest on a sloping site. From the post-attack photographs and the position of the wreck today, it seems likely the heavier water-filled stern pulled that end of the ship down and away from the shore, pivoting about the bow which now lies in shallower water.

Some reports suggest there was also a cargo of

either bicycles or motorcycles. It seems likely these were motorcycles and other military equipment being evacuated back to Germany from the northern Russian front near Finland (Halvor Sperbund, pers. comm. to DHT, 2005). These were likely being returned for the final defense.

While we were in Vadheim several members of the community told us there might be uranium ore from Russia on board, but other townspeople and Sperbund, a Norwegian WWII military historian, scoffed at that suggestion. He rightly pointed out that most shipwrecks are surrounded by mystery and intrigue of which this was yet another example.

Growing public interest in the *Mount Temple* story and lost fossils led to a number of public lectures by the senior author and province-wide radio interviews, one of the latter linking the two authors. After giving a presentation on the *Mount Temple* project to the second author's diving colleagues in Wainwright, Alberta in late 2003, the first plans to send a diving expedition overseas to Norway to visit the *Oldenburg* wrecksite were conceived (Friesen, 2004; Tanke and Rondeau, 2004a, b, 2005). This was done in support of research for an ongoing book by the senior author.

Interest in the fascinating story of the *Mount Temple* and her attacker continues to grow, with additional television, newspaper and magazine appearances (Anonymous, 2003; Kelsey, 2003; Kucher, 2003; Talbot, 2003; Wilson, 2003; Curley, 2004; Friesen, 2004; Anonymous, 2005a; Johnsrude, 2005a; Schafer, 2005; Talbot, 2005), and a segment reviewing the ongoing research airing on the Canadian science show *Daily Planet*, first airing September 16, 2004 (see www.exn.ca/dailyplanet/view.asp?date=9/16/2004 then scroll down and select the “Discovery at Mount Temple” link for a six-minute segment).

Before we arrived, the media in Norway were contacted, which generated a number of articles (Ballestad, 2005; Eide, 2005a–c). This was done not only to alert people to our project, but also to have people with historical recollections ready to meet and speak with us upon our arrival.

Post-expedition activities include an oral and video presentation on the *Oldenburg* expedition by the second author at the SHIPWRECKS 2005 conference in Vancouver, BC on April 2, 2005; an eight-minute segment on French CBC TV (airing on April 6); and continued newspaper coverage (Johnsrude, 2005b).

At the conclusion of the *Oldenburg* expedition, the author was also able to do a museum side trip in London and achieve some important palaeontological results—these are briefly included here.

The *Oldenburg* expedition and dive details

The expedition team (Figure 2) consisted of:

From Canada

Darren H. Tanke, 44, Drumheller, AB. (Expedition leader, Mount Temple and Oldenburg raid researcher/historian, expedition surface still photography).

Rob M. Rondeau, 40, Hardisty, AB. (Professional diver and *Oldenburg* dive team leader).

Dave Basiove, 50, Vancouver, BC. (Professional diver, published author and underwater photographer/video).

Maurice Van Welter, 52, Ottawa, ON. (Financial consultant and expedition surface video cameraman).

From Norway

Ståle Tveitane, 35, Nortech Diving, Grimstad.

Øystein Dragvik, 31, Nortech Diving, Grimstad.



Figure 2. The Project Oldenburg 2005 expedition team, Vadheim, Norway, March 3, 2005. Left to right: Darren Tanke, Dave Basiove, Maurice Van Welter, Rob Rondeau, Ståle Tveitane, Øystein “Stone” Dragvik. Mount Fløyen (elevation 765 m) at the west entrance to Vadheimsfjorden is in the background. The fjord at Vadheim has been measured as deep as 378 metres (Anonymous, 1988).

The Canadian crew left on February 27 and met up in London, England before flying on to Bergen, Norway. From there, on the evening of March 1 we

travelled three hours by bus and car ferry to our hotel in Vadheim where the Norwegian support divers awaited. We spent four and a half days in Vadheim, beginning our return home on the morning of March 6, stopping for a day and evening in London, England, and then returning to Canada on March 8.

Vadheim is a small town (population roughly 400), founded some 1000 years ago in a remote part of southwestern Norway. Some local citizens believe the Vikings originated in or near this district.

Since 1907 there has been a local chemical factory producing sodium chlorate as a bleaching agent for the pulp and paper industry. The nearby industrial town of Høyanger (23 km drive to the east) is an important aluminum smelting and aluminum machining centre. Aluminum engine blocks and wheels for domestic Audi, Porsche, and Volvo automobiles and Formula I race cars are an important export. Heavy industry makes use of deep, high mountain lakes by piping water down to sea level and driving electric generators to make their own electricity for factory use as well as for the local community.

Other regional industry includes forestry, salmon fish farming, and this is a popular destination for bicycle tourism. In Vadheim, German, British and Scandinavian divers exploring *Oldenburg* are also an important tourism commodity; but we were the first North American team to explore her.

A good number of people living in Vadheim commute to work in Høyanger; so in a sense Vadheim is a classic “bedroom community”. The entire municipality is lightly populated: only some 4,000 residents.

The area is extremely rugged, with steep-sided mountains pierced by numerous deep fjords. The industrious Norwegians have carved highway tunnels through many mountains in the district. Despite its northerly latitude of 61°12'N (further north than the southern tip of Greenland, and close to same latitude as Anchorage, Alaska), Vadheim is influenced by the moderating Gulf Stream current, so winters are quite bearable—but wet—and the port ice-free.

During our visit, temperatures ranged from daytime highs of +5°C to overnight lows of about -7°C, but the humidity made the cold temperatures feel more like -10° to -12°C.

Three group dives (of three divers each) were conducted. The bow of *Oldenburg* is at 35 metres depth, the bridge about 38 metres and the stern 80+ metres (Young, 2004). The maximum dive depth we attained was 45.7 metres (150 feet). Bottom condi-

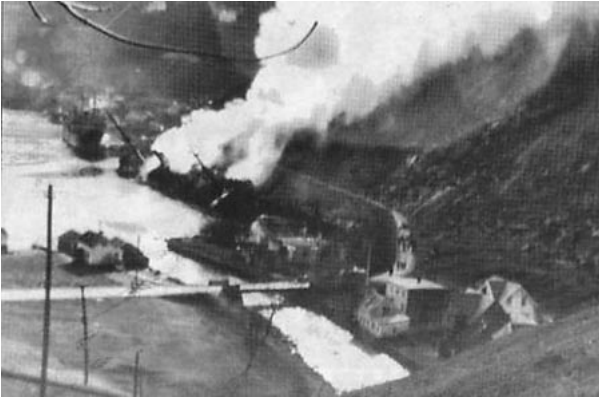


Figure 3. Historical photograph pair. **Top:** April 7, 1945, the burning *Oldenburg* rolls onto her starboard side and begins sinking by the stern. The transport ship behind her and to the left is *D/S Wolfgang L.M. Russ*. **Bottom:** The same scene nearly 60 years later, taken March 4, 2005. Due to some apparent landscaping changes, the precise spot the original picture was taken from may no longer exist. Differing camera formats can also make exact matching of historical photographs problematic, but this is the best match. The road, bridge over the Ytre river and several residential buildings are present in both photographs. By handheld GPS, coordinates for this location are: N 61°, 12.626'; E 005°, 49.273'.

tions were good with little current and excellent, clear viewing conditions with a visibility of 30–35 metres. Water temperature at the bottom was about 5°C.

The wreck has a thick coating of mud in places, but is in excellent condition with the ship's black and white "dazzle" or splinter camouflage paint scheme still visible when the mud is scraped away. The bridge area shows much wood construction and while this is somewhat corroded and parts peeled back, the structure is still held together. Some gauges are visible and even a few panes of glass in the wheelhouse are still intact.

Several hours of high-resolution underwater video footage of the wreck was recorded and over 500 pictures were taken on the surface of the dive preparations, historical-related subjects, general area and local culture. Four local people were interviewed

regarding Vadheim history, German occupation of the town in WWII, and the *Oldenburg* raid. One man gave us a detailed written account of his experience during the attack.

Despite the fact that the incident occurred 60 years ago and most of the interviewees were young at the time—one was a young adult and the rest were children—their recollections largely corresponded, indicating the accuracy of their memories, which also jibed with the gun camera pictures and military reports. With these resources, it has been possible to reconstruct the events of the 1945 attack with great clarity.

Parts of the ship have been salvaged by wreck divers. A bell with the script "Møwe 1916" and the ship's wheel and pedestal are figured at <http://homepage.mac.com/superscuba/PhotoAlbum85.html>

The bell is curious, as the "o" in *Møwe* should appear with an umlaut, *i.e.* *Möwe*, not with the Nordic "ø", *i.e.* *Møwe*. Another bell, bearing the *Greenbrier* name has also been recovered.

A large calibre deck gun was removed from the forecastle 10–15 years ago, but its current whereabouts is uncertain. Project *Oldenburg* 2005 did not remove any artifacts from the wreck. Our hotel's owner, who had been given some artifacts collected by other divers over the years, donated some china, a bottle and a wooden stock from a 7.62 mm bolt-action rifle, the latter possibly Russian in origin (war booty?). These will be curated at the Vancouver Maritime Museum (soon to be renamed the Canadian Maritime Museum—Pacific).

Expedition Diary

Day 1—February 27, 2005.

A long travel day, each team member found his way to London, England where we met up at the airport.

Day 2—February 28.

Continued travelling with a late connection; we flew to Bergen, Norway in early evening and spent the night there at the Grand Hotel Terminus. This was Bergen's first luxury hotel, opening in 1927. Fresh snow fell earlier in the day; seems none has fallen for some time prior to our arrival.

Day 3—March 1.

A relaxing day spent in Bergen. Visited harbour area, historical downtown, fish market, and took the Fløien funicular railway tram up Mount Fløien (320

m ASL) to view Bergen from up high.

At our hotel, met up with Norwegian WWII military historian Halvor Sperbund and the Norwegian press regarding the upcoming expedition. Our media presentation was done using a table and room utilized by famous Norwegian polar explorer Roald Amundsen during planning for his last and fatal arctic foray in 1928.

Later we explored more local attractions and sampled Norwegian beer—very expensive, at \$10 a pint! Mid-evening we took the bus to Vadheim, crossing Sognefjord by car ferry at Oppedal to Lavik, arriving in Vadheim late evening. Our hotel in Vadheim is conveniently very close to the *Oldenburg* wreck—only several hundred metres away.

Chilly, overcast day with light snow; winds calm.

Day 4—March 2.

We had a logistics and a dive planning meeting in the morning, followed by a first dive on *Oldenburg* after lunch. The bow and bridge of the ship are marked by buoys. This was a reconnaissance dive only, no cameras were taken. The bow region was explored. The shipwreck is in excellent condition with underwater visibility (with underwater lighting) of 30–35 metres: excellent by any standards. The wreck was soon verified as being that of *Oldenburg*—despite nautical history books saying she was “raised”, “scrapped”, “dynamited”, or otherwise removed in 1953 (e.g. Hoyt, 1969; Walter, 1994). These comments are in error. Collectively, our experienced dive team has explored many shipwrecks and all agree *Oldenburg* is a “10”. However she is a wreck not to be trifled with—in two past instances a diver, inexperienced or untrained in wreck penetration, went inside her, became disoriented, ran out of air and drowned.

This was a chilly, overcast day with snow flurries and squalls; winds light from the south. After a couple hours on the open dive boat, a hot shower in the hotel was a welcome reprieve.

Day 5—March 3.

Norwegian support diver Ståle Tveitane leaves this morning due to prior commitments. The other diver, Øystein “Stone” Dragvik, stays with us for the rest of the expedition.

Drove to Førde region some 30 km to the north. A short memorial service was conducted with us at the Førde airport monument honouring the ten Canadians, two Australians and two English fliers killed during the “Black Friday” raid nearby on February 9, 1945. Their planes were shot down during an attack

on the German Narvik-class destroyer Z-33 and other enemy ships in the harbour.

According to the attending Norwegian officials, we are the first group of Canadian civilians to specifically pay homage at the monument since it was erected in 1985 on the 40th anniversary of the attack. In our conversations with the Norwegian officials and television media present, it was clearly evident to us that they have not forgotten the sacrifice of the Canadians and other Allies lost in WWII, helping liberate Norway from Nazi oppression. As the monument says under the names of the lost: “DEI GAVE LIVET FOR VAR FRIDOM” [“THEY GAVE THEIR LIVES FOR OUR FREEDOM”]. In total, fifty Canadians were lost in Norway’s struggle for freedom.

We then proceeded further west to Hoydalsfjord and dove on a Bristol Beaufighter wreck (Ulvedal, 2005). The television media also accompanied us. This plane was lost on the “Black Friday” raid: shot up by a German Fw 190 fighter plane, the badly damaged Beaufighter limped away from the battle and made a forced landing onto the water here. Both crewmembers survived but one was badly injured in the attack and ensuing crash. We later learned this was an aircraft (code number PL-Y; NE 743) from RAF 144 Squadron, crewed by P/O Fred “Spike” Holly and P/O Percival C. Smith.

The second author placed a wreath in the cockpit of this plane on behalf of the Royal Canadian Legion. The wreath was provided by the Canadian Government and commemorates the Canadians lost in the Black Friday attack (Eide, 2005d). After the dive, we visited the Luftkamp Museet (Black Friday Museum), near Naustdal. A number of engines and pieces of wreckage from Beaufighters and a German Fw 190 lost during the attack are on display. The Beaufighter dive was shown on Norwegian television tonight. An underwater picture of this plane wreck can be found on www.nrk.no/nyheter/distrikt/nrk_sogn_og_fjordane/fylkesleksikon/1360178.html (Anonymous, 2005b).

Sverre Søgne joined us this evening. In 1945 he was a boy of 12 and only a few hundred metres away from *Oldenburg* when she was attacked. Caught in the open, he was in the path of the Allied planes’ fire and German anti-aircraft crossfire and lucky to escape injury or worse. He was interviewed for our documentary.

Chilly overcast day, breezy south winds at times.

Day 6—March 4.

Strong winds from the south overnight bringing heavy wet snow, then sleet, then rain in morning made everything slushy. Clouds lifted and began to break up in afternoon but still overcast with occasional flurries or squalls and fog patches.

Sverre showed the senior author around, giving his recollections of Vadheim WWII history. It was known that during the *Oldenburg* attack some errant German anti-aircraft rounds hit homes in Vadheim, but Sverre related an amazing story. During the attack, a group of about a dozen people took refuge in the basement of a home directly in the line of fire from the German ship's anti-aircraft guns. One elderly woman sat upstairs in a rocking chair. As the attack developed, one anti-aircraft round came crashing through an upstairs window and snatched the slipper off the old woman's foot! The people in the basement heard a loud crash as the round embedded itself in the wood floor above their heads. But this was not a simple solid projectile. It was a large calibre round fused to explode after travelling a certain distance from the gun. Someone in the basement had the presence of mind to rush upstairs with a shovel and dig the smoking and sputtering round out of the floor and then fling it into a snowbank outside. It did not explode. Had the shell gone off as designed, the explosion would have torn the small wooden house apart and likely killed all inside.

At 1:00 P.M. we had a meeting and luncheon with the local reeve of the Municipality of Høyanger which includes the town of Vadheim. From all the local attention, one gets the feeling we're the biggest thing to happen in Vadheim since the *Oldenburg* was sunk. While in Vadheim (and after we left) we created a lot of local television and newspaper interest (Eide, 2005a–c; Geithus, 2005; Haug, 2005; Ulvedal, 2005).

Later in the afternoon, Sverre and his older brother Arthur (another witness to the attack) again toured us around Vadheim. Sverre was interviewed on videotape about his experiences on that fateful day and later, the senior author was filmed narrating some portions for the planned short expedition documentary.

We learned of yet another remarkable story. Some photographs of *Oldenburg* in Vadheim were taken by one of her crew, both before and after the attack. He climbed a low hill north of the ship and snapped off a photograph or two, showing the German ships in the harbour. After the attack, it seems he had the presence of mind to return to the exact same spot and

take more pictures as the ship burned and sank. We are told that this unknown sailor dropped off his film for developing in Oslo in 1945 but he never came back; it sat unclaimed for decades. During a cleanup of the shop some 30 years later, the film and its historically important pictures were rediscovered.

The senior author relocated the 1945 vantage point of these pictures and took new matched photographs (Figure 3). The armor-piercing rockets that claimed *Oldenburg* and the planes that fired them would have passed directly overhead. The many hundreds of spent 20 mm shell casings from the Beaufighter's nose-mounted cannon (four per plane) would have literally rained down onto our position.

The rest of our group dove on *Oldenburg*; today underwater photography was conducted. The bow, foremast, crow's nest and bridge area were examined. The bridge shows some damage, but is still recognizable. Steel cables supporting the foremast are still in place.

Day 7—March 5.

A beautiful, sunny and windless day—the only one we had the entire trip. The third and final dive on *Oldenburg* was conducted, again exploring the bridge and fore-castle areas on the high port side. More underwater video footage was recorded. The senior author and Maurice took the expedition's inflatable boat and cruised Vadheimsfjord, getting spectacular still and video footage of the harbour, town and surrounding snow covered mountains. We took the boat further up the narrow fjord toward Sognefjord, following the route the Beaufighter aircraft took as they made their escape after attacking *Oldenburg* and other German shipping. It was easy to imagine the snarling roar of the planes' Hercules engines as they passed less than 100 metres overhead.

In the afternoon we interviewed Mrs. Gunvor Vik. A local variety store owner, she was 24 when the attack came; the planes flew right over her house, rockets flying and guns blazing. Her house is plainly visible in the gun camera still pictures. She told us, through a local translator, that when the planes came, she was cowering in the basement.

Tonight we were shown WWII gun camera footage of attacks on German shipping in Norwegian waters, on videotapes lent to us by Halvor Sperbund. We were joined by some local citizens.

Still images of the *Oldenburg* attack had been seen previously, but as we went through the video footage, the senior author was stunned to see there was actual 16 mm motion picture film from attacking 489

(RNZAF) Beaufighter aircraft spraying the German transport ships *Oldenburg* and *D/S Wolfgang L.M. Russ* with concentrated 20 mm cannon fire.

As the first scene of *Vadheim* came onto the screen, a collective gasp was heard from some of the older citizens in the back. After all, they were there for the real thing, but now, and without warning, were seeing it again sixty years later, this time from the pilot's perspective. Tracer fire can be seen streaking down onto the ships. Numerous large geysers of water from missing rounds can be seen erupting around the ships. In one attack sequence a second Beaufighter suddenly appears and almost fatally flies through the attacking plane's gunfire. With explosive 20 mm shells from four nose-mounted cannon pouring out a combined rate of some fifty rounds per second, the plane would have been instantly shot down and given the low altitude the crew would have perished. The individual attack runs took longer than we had imagined, a grim reminder of how long the attacking planes were exposed to the many anti-aircraft guns on shore and aboard the heavily armed ships.

We were also made aware of a wartime movie made to commemorate the anti-shipping strike squadrons in a late WWII propaganda film called *The Ship Busters* produced by the Royal Air Force. This includes much high-quality gun camera footage of Beaufighter rocket attacks on German shipping in mostly Norwegian waters. [Excellent gun camera stills of attacks on various German shipping in European coastal waters can be seen at www.oldcmp.net/ns1.html].

Day 8—March 6.

Overcast and cool. We left *Vadheim* mid-morning by bus, the *Lavik-Oppedal* car ferry and then arrived back in Bergen. Had a quick visit with Halvor Sperbund in the bus depot, before proceeding to the international airport. There, and with 45 minutes advance warning we discovered that our tickets were somehow wrong and we were a day early! We were very lucky to get on the plane on standby status. The person behind us was turned away. Arrived in London where we spent the night.

Day 9—March 7.

Some important Alberta palaeontological information, supplemental to the *Oldenburg* expedition was learned today. While the others took in the sights of London, the senior author visited The Natural History Museum in London, guided by British

dinosaur researcher Dr. William T. Blows. First, we examined the 1916 Sternberg fossil collection from Dinosaur Provincial Park (DPP). This was the first of two batches of fossils C.H. Sternberg shipped to London; the second was lost aboard the *SS Mount Temple* (Tanke, 2003; Tanke *et al.*, 2002). Among the first batch was material from a purported *Styracosaurus* bonebed located near the mouth of One Tree Creek in DPP. As it is of extreme interest to relocate this potentially important site, a sample of distinctive hard, dark brown mudstone was taken from London for onsite comparison in DPP.

The second matter involved a lost dinosaur. A *Chasmosaurus* partial skull and skeleton was collected by William E. Cutler in DPP over the winter of 1919–1920. Due to the lack of a buyer, it was placed in storage in Calgary for a time (Cutler, 1922).

History concerning the fossil became confused at this point. Cutler left for fieldwork in East Africa and died there in 1925. The whereabouts of the specimen was subsequently lost and confused; the last word on it was that it was at the Calgary Zoo (Russell, 1966), but efforts to relocate it there or in any North American museum proved fruitless. The senior author recently reinvestigated the problem and believed it was in London. Dr. Blows was able to find paperwork in London indicating it had been shipped to England in 1923. Further confirmation was required. Field photographs of the disarticulated skeleton included a “humerus” with several distinctive post-fossilization cracks. We were able to match these cracks on the right humerus of the London specimen (BMNH R4948), thus confirming the specimen's whereabouts and clearing up an 83 year old mystery (Tanke, in prep.).

Overcast, chilly, damp day, with light rain showers in afternoon. Spent the night in London. A fine celebratory dinner was had in a local Greek restaurant.

Day 10—March 8.

Up early and began long journey home by train and plane, the senior author arriving in Calgary at 11:15 P.M.

A daily account of the expedition is also posted on the Internet and can be viewed at the *SS Mount Temple* (Dinosaurs in the Deep) website: www.ssmounttemple.com Click on the “Site updated...” link at the top of the website's main page, or divers' flag link at the bottom of the page to access the daily trip account.

Future plans

There are plans to return to Norway in 2006. Work in Vadheim will continue, with more intensive dive activities on *Oldenburg* and continued historical research. The second author would like to spearhead efforts to try and relocate a 404 Squadron (RCAF) Beaufighter lost in deep water (approx. 300 m/1000 ft) near Naustdal during the Black Friday attack. All aircraft (Allied and German) lost in the incident except this one have been relocated. Discovery of the missing Beaufighter would add to the growing list of well documented WWII plane wrecks located across Norway (Anonymous, 2005c). The second author is also considering leading diving charter tours to the *Oldenburg* wreck and perhaps setting up



Figure 4. The minisub *Free Diver* is similar to this 1990 SportSub II seen on a wheeled cart. Manufacturer: International VentureCraft Corporation, Burnaby, BC (Website: www.ivccorp.com). Dimensions: L 3.05 m, W 1.83 m, H 1.40 m. Weight (dry): 565 kg (1250 lb.); Payload capacity (in water): 180 kg (400 lb.); Occupant capacity: 2; Maximum diving depth: 40 m (130 ft); Top speed (underwater): 5 knots (9.25 km/h or 6 mph); Hull construction: fiberglass; Powered by 2 continuously variable thrusters at port and starboard, 75 pounds thrust each. Photograph from company's website.

a small museum or exhibit in the town site.

Owing to financial considerations, earlier plans to have a small submersible explore and film *Oldenburg* in 2005 fell through, but it is hoped corporate or private sponsorship for a 2006 expedition will allow this. It will cost roughly CDN\$10,000 to transport the minisub *Free Diver* (Figure 4) to and from Norway. Financial sponsorship is actively solicited. Corporate advertising opportunities are also possible. Major donors will be allowed to accompany the expedition and take dives to the *Oldenburg* wreck in the expedition's submarine.

The *Oldenburg* expedition fits nicely into the still growing trend among dedicated marine archaeologists worldwide to explore, study, and preserve historical information regarding military ships and aircraft lost in recent history (Delgado, 2001; SECRET, 2005). Diving on, and researching the demise of *Oldenburg* provides us not only information on this

little known military incident, but also with a closing chapter of an obscure yet fascinating aspect of Alberta's early palaeontological heritage.

Acknowledgements

Through the help of numerous colleagues, Project *Oldenburg* 2005 was a great success. Contacts on both sides of the ocean helped make this so, and we gladly acknowledge them here.

In Canada and the USA, we thank Mr. Egil Bjørnsen from the Royal Norwegian Consulate, Calgary, who provided logistical support and loaned a Norwegian flag. P.J. Enright (Seattle, WA), a *Möwe* historian in his own right, posted the expedition daily updates. Dr. Eva Koppelhus (Royal Tyrrell Museum, Drumheller, AB) did some translations.

In England, thanks to Drs. Angela Milner and Sandra Chapman (The Natural History Museum, London) for access to the palaeontology collections, Dr. William T. Blows for assistance, and Catherine Witt, Enquiries Section, Commonwealth War Grave Commission (Maidenhead).

In Norway, we thank: Mr. Lasse Olav Bell (Vadheim Electrochemiske Fabrikker A/S); NRK Television (Førde); Dr. Karin Pittman (Canadian Consulate, Bergen); our support divers, Messrs. Øystein Dragvik and Ståle Tveitane for their able assistance; Messrs. Sverre Søgne (Gol), Arthur Søgne (Førde), Knut Haugen (Vadheim), Ole Systad (Vadheim) and Ms. Gunvor Vik (Vadheim) for their recollections of the sinking of the *Oldenburg* in 1945. Tom Erik Guldberg (Oslo) provided Figure 3 (top). Thanks to Miss Aud Slettehaug (Naustdal), curator of the Black Friday Museum for her recollections of the "Black Friday" raid near Førde and for hosting us. Dr. Jørn Hurum (Geologisk Museum, Oslo) and Mr. Halvor Sperbund (Bergen) made contact with Norwegian media and the latter offered helpful advice and information. The warm welcome and assistance of our hotel hosts at Vadheim Fjordstue (www.vadheim-fjordstue.no/), Mr. Børge L. Forthun and Mrs. Marie Karin Kuammen is gratefully acknowledged. Ms. May Britt Eide (Vadheim) provided some translation service. We also wish to thank Mr. Kjartan Longva (Reeve of the Høyanger municipality) and all of Vadheim's citizens who made us feel welcome.

The senior author and the rest of the team wish to thank the second author who funded virtually all aspects of the expedition. The manuscript was edited by Patty Ralrick (Faculty of Graduate Studies, University of Calgary).

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In Memoriam

Dr. Catherine Nigrini (1939–2005)

Dr. Nigrini passed away on January 13, 2005. She gave a talk to the Alberta Palaeontological Society in October of 2002, and was a member in 2003. She was also an important board member and volunteer at the Canmore Museum and Geoscience Centre.

Catherine received her B.Sc. from the University of Toronto and a Ph.D. in marine micropalaeontology from the University of Cambridge. Her specialty was the study the morphology, taxonomy and stratigraphy of Cenozoic Radiolaria. She published numerous papers about Radiolaria and was one of five authors of a book on the subject. Dr. Nigrini participated in five voyages on both the *Glomar Challenger* (Leg 2, 1968, on which she was one of the first women on the research crew) and the *Joides Resolution*. Her last voyage was 49 days (Leg 199) on board the *Joides Resolution* in the Central Pacific in 2001.

Dr. Nigrini will be missed by the geoscience community, and the APS extends its sympathies to her family and friends.

[With thanks to the Canmore Museum and Geoscience Centre, Geoscience Committee Notes, May 10, 2005 -ed.] □

Special Resolution for New Bylaws Passes at Annual General Meeting

by Dan Quinsey

The Annual General Meeting of the Alberta Palaeontological Society was held on May 27, 2005 in Room B108 at Mount Royal College, Calgary.

Quorum was achieved and the usual business was handled without incident.

The special resolution to pass the proposed Bylaws dated February 17, 2005 was passed by 95% of the members in attendance. The other 5% abstained from voting. There were no votes against the motion.

Two minor amendments were made to the proposed document:

Section 2.6b was changed to clarify a Family Membership as follows:

Family Membership: offered to a group of people living in one household consisting of no more than two adults 18 years of age or older and their dependants (if any) under the age of 18. Each family member has one vote in accordance with Article 2.2 above.

Section 5.11d was changed to remove the word “to” from the sentence as follows:

Shall not in any way whether before, after, or during the meeting influence the voting on any such question.

Thanks go out to all those members in attendance for a job well done. □

May 2005 Election of the Board

by Vaclav Marsovsky, Past President

The annual election of the Board was held at the May 27, 2005 meeting. Officer positions are held for a period of one year. Director positions are held for two years. We are proud to welcome the elected members to their respective positions (see list of Officers and Directors, Page 1).

The Editor, Membership Director and Field Trip Coordinator are Directors mid-way through their term and these positions will be up for renewal next year.

The APS Board wishes to thank **David George** (former Secretary) for his contributions and service on the APS Executive. □

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Wapiti Formation Theropod Skin Impressions

by Garnet Fraser

In September of 2004, I was driving with Doug Wakefield east of Tumbler Ridge. Doug noticed a pile of stone slabs at the side of the road, and suggested checking them for fossils. Looking for tracks, I noticed a natural cast from a dinosaur footprint. There were fourteen delicate grooves—skin impressions—corresponding to the side of the middle toe.

Geological maps showed the site to be of the Late Cretaceous Wapiti Formation. Jim Haggart [Geological Survey of Canada, Vancouver] recommended further reading, mostly about coal deposits of the Wapiti Formation.

The end of the middle toe was broken, from which protruded a smooth object with a broken oval end (Figure 1, “A”). Because of its location in the toe, I thought it might have been a metatarsal bone surrounded by the skin impressions of a fossilized foot.

It turned out to be fossilized wood, as determined with magnification by **Rich McCrea**. The wood just happened to find its way into the track as the natural cast was forming. I had also puzzled over protrusions from the middle toe, until Rich explained that they were formed by invertebrate burrows under the fresh cast.

Charles Helm and Rich McCrea secured help from an oil company to bring the large slab to the research station at Tumbler Ridge, where it has joined a rapidly growing collection of fossil specimens. □

On the Cover

The original of the specimen shown on this issue’s cover was found by Judy and Al Taylor along the Sheep River in southern Alberta. It consists of Paskapoo Formation (Paleocene) sandstone.

The plastic cast photographed here was prepared by the Geological Survey of Canada (Calgary) and donated to the APS.

Regarding the tracks on the slab, **Richard McCrea** (APS member, Peace Region Palaeontology Research Centre, Tumbler Ridge, BC) writes to APS Curator Ron Fortier:

“From looking at these photos I would say the

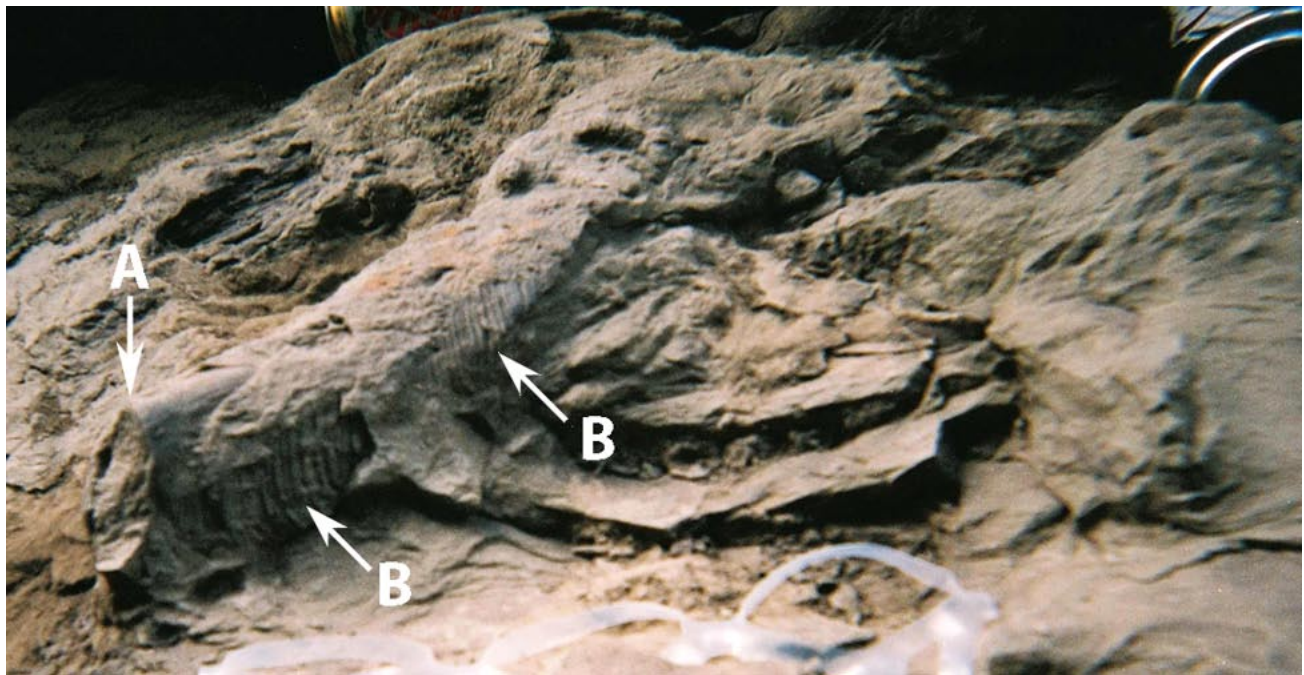


Figure 1. The heel of the convex natural cast is at the top of the photo. The broken end of the middle toe (A) is at the bottom left. The fine parallel grooves (B) are skin impressions corresponding to the side of that middle toe. The skin impressions were preserved when sediments filled the track, and later fossilized to form the natural cast. Photo by the author. [The six-pack rings included in the foreground for scale held cans of Canada Dry ginger ale, and the author is sticking to this story. –ed.]

trackmaker looks like an arthropod, probably a horseshoe crab or something similar. There appears to be a central drag mark in the main trackway that could have been made by a telson (tail spine). The tracks do not look like those of a vertebrate to me and I have seen a similar specimen in collections at the [University of Alberta] which is also from the Paskapoo Fm. The ichnotaxon most similar to these tracks is *Kouphichnium* ichnosp. (Nopcsa, 1923).

There was a paper in the journal *Palaeontology* which discussed a similar track find (Romano and Whyte, 2003. The first record of xiphosurid (arthropod) trackways from the Saltwick Formation, Middle Jurassic of the Cleveland Basin, Yorkshire. *Palaeontology*, vol. 46, no. 2, p. 257–270.” □

Review

by Keith Mychaluk

Sweetgrass Hills: A Natural and Cultural History by Johan F. Dormaar

Occasional Paper No. 38, June 2003, Lethbridge Historical Society (Chapter of Historical Society of Alberta) P.O. Box 974, Lethbridge, AB, T1J 4A2.

Anyone familiar with southern Alberta (and northern Montana) undoubtedly has noticed the Sweetgrass Hills. In a landscape dominated by classic prairie grasslands and plains, the Sweetgrass Hills appear, almost magically, on the horizon. Although mainly located on the Montana side of the international border between Canada and the U.S., the Hills have left a significant impact on Alberta, both on its geology and people.

Why a review of a book with little mention of palaeontology within its covers? Anyone who has spent time stomping around the landscape of southern Alberta, whether they are fossil hunters, ranchers

or oil field workers, are usually drawn to these wonderful creations. Of course, they are excellent landmarks in the featureless plains, and most realize they have significant geologic importance. However, after reading *Sweetgrass Hills: A Natural and Cultural History*, even I was surprised at the incredibly rich history associated with the Hills. I believe that understanding this history will help or inspire those working on the more detailed aspects, such as palaeontology, by providing a diverse perspective on the area.

Johan Dormaar, a well-known Alberta archaeologist, has put together a comprehensive picture of the geology, ecology, wildlife and people (through time) of the Hills. There is a section for everyone: a respectable geologic summary of the Hills' complex formation; detailed flora and fauna descriptions, stories of Montana lawmen trying to bring peace to a wild gold mining camp; native myths, vision quests and rock art involving the Hills; C.M. Russell, the famous western painter, and so on. This is a scientific publication however, and is very well referenced, attesting to the tremendous amount of research the author must have conducted.

Fair “airplay” has been given to both the U.S. and Canadian histories of the Sweetgrass Hills, as well as the native populations who did not divide this part of the continent along the 49th parallel.

For anyone who has been drawn, one way or another, to the Sweetgrass Hills, this is an indispensable, up-to-date guide to their secrets. □



Sweetgrass Hills seen from Writing-on-Stone Provincial Park, Alberta. Photo by Howard Allen.

Fossils in the News

Various sources, March 24, 2005

T. rex soft tissue preserved?

MONTANA—Numerous articles appeared in a number of scientific and news sources. In addition to the print media, the summary below is also based on interviews on local (Calgary) radio station QR 77 and CBC's *Quirks and Quarks* by the radio hosts with Dr. John Horner from the Museum of the Rockies in Bozeman, Montana.

The discovery happened as palaeontologists were excavating and collecting a partial skeleton of a *Tyrannosaurus rex* from the Hell Creek Fm. The skeleton was found on the Charles Russell Wildlife preserve in Montana. To reduce the weight for air lift, the plaster jacket had to be cut. During this process the femur was opened. This was unfortunate and fortunate at the same time because the marrow cavity normally concealed within the bone became exposed. The material was scooped out and protected so it could be studied later.

Study of the material was led by Mary Schweitzer of North Carolina State University. Soft tissue is not usually preserved, making this a very rare find. By putting bone in vinegar, minerals are removed leaving only protein—the bone can then be bent. In removing minerals from the sample, what was left was a bendable matrix of flexible material that looked like vessels. These were transparent tubes that could hold water and they look very much like the soft tissue that is found in ostrich bone.

If this is soft tissue that has been preserved, then it changes the concept of fossilization. Scientists may be able to find original dinosaur proteins and get the proteins out. (The makings of *Jurassic Park*).

The team's next step is to see if they can identify DNA in their samples. Photos of the alleged soft tissues can be seen at <http://www.cbc.ca/story/science/national/2005/03/24/t-rex050324.html>

—Vaclav Marsovsky

CNN.com, March 31, 2005

Fossil found of termite-eating mammal

FRUITA, Colorado—Palaeontologists have found the remains of an insect-eating mammal that resembled but was unrelated to armadillos and anteaters.

Fruitafossor windscheffella had hollow, tube-like

teeth—similar to modern armadillos—and four-toed limbs specialized for digging. It was about the size of a rat, and lived during the Late Jurassic. But despite these similarities to modern ant-eating mammals, *Fruitafossor* had other features that showed it was unrelated to the modern animals, an example of convergent evolution, in which unrelated animals evolve similar strategies to exploit similar ecological niches.

The fossil was described by Zhe-Xi Luo and John Wible of Pittsburgh's Carnegie Museum in the journal *Science*. Its generic name was given for Fruta, Colorado and "fossor" meaning "digger"; the species name honours Wally Windscheffel, who discovered the type specimen.

The National Post, April 15, 2005

Team finds eggs inside dinosaur fossil

GANZHOU, China—Canadian researchers Tamaki Sato and Xiao-chun Wu of the Canadian Museum of Nature (Ottawa) and Darla Zelenitsky of the University of Calgary, along with colleagues from Taiwan, have discovered the first-ever specimen of a dinosaur with eggs inside its body.

Writing in the journal *Science*, the team described two large eggs found in the pelvic region of a partial skeleton of an oviraptorosaurian dinosaur from Upper Cretaceous rocks of the eastern Chinese province of Jiangxi.

Hailed as another piece of evidence that birds are descended from dinosaurs, the two eggs indicate that the dinosaur had two ovaries, and laid eggs in pairs. Modern birds have only one ovary, but lay their eggs one-at-a-time, unlike reptiles such as crocodiles and turtles, which lay many eggs all at once.

Calgary Herald, May 5, 2005

Discovery billed as missing link in dinosaur history

GREEN RIVER, Utah—A pang of conscience from a fossil poacher resulted in the discovery of a new "missing link" dinosaur named *Falcarius utahensis*. The man led Utah palaeontologist James Kirkland to the site, a mass-kill bonebed. *Falcarius* was an Early Cretaceous therizinosaur, about 1.5 m tall, with large, sickle-clawed forelimbs like those of its meat-eating ancestors, but tiny leaf-shaped teeth for eating plants. For the full story and pictures, see <http://www.ugs.state.ut.us/whatsnew/news/new0505.htm> □

[Thanks to Les Adler and Phil Benham –ed.]

APS PALEO RANGER

A Newsletter Just For Kids

Created by Ron Fortier — Alberta Palaeontological Society

Volume 2005-2

What's New?

Are you going on the field trip July 23, 2005? Let Dan Quinsey (247-3022, dinodan@shaw.ca) or Ron Fortier (285-8041, rmfortier@shaw.ca) know if you are planning on coming before too long, OK? Any member of the APS under the age of 18 is welcome to come along with a guardian. Grandchildren of APS members are also welcome, as long as the grandparent (APS Member) will be the guardian. We will have a meeting some time before the trip (July 9) to go over what you should bring and the right way to collect fossils.

If you are on the computer and looking for something to do, try surfing freepapertoys.com or rain.org/~philfear/download-a-dinosaur.html. I never put that **www** thing in front any more and I still get to where I'm going. If you have any good sites you like, let me know and we could share them. —Ron

I wish I was a dinosaur.
They were so big and strong.
I'm still a little person.
Why does growing take so long?

My mom says, "Eat your vegetables,
And don't forget your meat."
I wonder if the dinosaur
Had a mother who said, "EAT!"

Find the Dinosaurs!

CARNOSAURS
CERATOPSIDS
DIPLODOCIDS
HADROSAURIDS
IGUANODONTIDS
PROSAUROPODS
SAUROPODS
STEGOSAURIDS
THEROPODS

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| U | E | U | Q | P | A | Y | N | U | E | E | H | X | V | R |
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Vancouver Paleontological Society Speaker & Field Trip Schedule

Meetings are held monthly (except August) at the Vancouver Museum/Planetarium. For membership information, contact Ken Naumann (604-323-5239, knaumann@langara.bc.ca) or Heidi Henderson (604-351-4693, henderson_heidi@lilly.com)

June 20: Dr. Rufus Churcher—Elephant Evolution. **June 25–26:** Field trip, Olympic Peninsula, WA
July 1–7: Field trip, Cranbrook, BC. **July 18:** Dr. Ted Danner—Fossils & Geology of the South Pacific.
August 25–30: Sixth BC Paleontological Symposium, Prince George, BC; includes field trips.

ALBERTA PALAEOLOGICAL SOCIETY

Calgary, Alberta

Operating Statement for 2004 (Audited)

January 1, 2004 to December 31, 2004

| Revenues | | Expenses | |
|--|----------------|---|----------------|
| Memberships | \$2740.00 | Bulletin printing | \$857.84 |
| US\$ Exchange | 8.68 | Bulletin postage | 600.37 |
| T-shirts | 75.00 | Speaker expenses | 0.00 |
| Pins | 6.00 | P.O. box rental | 111.28 |
| Field trip guides | 118.00 | Membership printing | 0.00 |
| Abstract volumes | 50.00 | Membership postage | 2.62 |
| CD-ROM | 0.00 | Field trip expenses | 191.53 |
| Postage for sales | 3.00 | Workshop expenses | 378.57 |
| Misc. sales | 20.50 | Symposium speaker | 1082.88 |
| Refreshments | 70.22 | Symposium abstract printing | 325.11 |
| Field trip fees | 455.00 | Postage for sales | 0.00 |
| Workshop fees | 520.00 | Website expenses | 384.60 |
| Donations | 47.04 | Refreshments | 25.78 |
| Symposium abstract sales | 490.00 | Bank charges | 81.60 |
| Symposium donations | 0.00 | Lawyer and insurance | 0.00 |
| Fund Raising | 1216.25 | Miscellaneous | 70.60 |
| | | Special projects | 17.32 |
| Subtotal Revenues | 5819.69 | Subtotal Expenses | 4130.10 |
| Plus revenue received in 2003 for 2004 | | Plus expenses paid in 2003 for 2004 | |
| 2004 membership fees | 885.00 | P.O. box rental for 2004 | 104.86 |
| Symposium donation 2003 | 532.29 | | |
| Subtract revenue received in 2004 for 2005 | | Minus expenses paid in 2004 for 2005 | |
| 2005 memberships fees | 1200.00 | P.O. box rental | 111.28 |
| Fund raising proceeds | 1216.25 | Special projects | 17.32 |
| Total Revenues | 4820.73 | Total Expenses | 4106.36 |
| Excess of revenues over expenses = \$714.37 | | For years 2002 & 2003 & 2004 | |
| Inventory sale value | 1009.00 | Total fund raising proceeds | 3161.75 |
| Values current to December 31, 2004 | | Total fund raising costs | 168.86 |
| | | Net fund raising | 2992.89 |

Treasurer: Mona Marsovsky. Audited by Norine Fortier and Howard Allen

DINOSAUR PARK SYMPOSIUM

at the **Royal Tyrrell Museum**

Drumheller, Alberta

Sept. 24-25, 2005



Dinosaur Provincial Park is a unique palaeontological treasure that has yielded 100s of dinosaurs and other fossils

Celebrate historical/scientific achievements and activities, and help us explore new research-related opportunities with renowned palaeontologists

Events:

Keynote presentations
Two-day technical program
Friday night ice-breaker & specimen viewing
Saturday night B-B-Q
Monday field trip to DPP

Speakers:

Philip Currie
Scott Sampson
Dale Russell
John Acorn
Special guest, Canadian author
David Spalding

for registration and other information visit:

www.tyrrellmuseum.com

attendance is limited to 250

