Alliance of **Natural History Museums** of Canada

Alliance des **musées d'histoire naturelle** du Canada

ANHMC Newsletter | **Le Bulletin de l'AMHNC** August | Août 2011

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Dans ce volume, mises à jour…

First ANHMC Newsletter of 2011!

The first newsletter for the Alliance of Natural History Museums of Canada (ANHMC) is here! Inside you will find news, updates and successes of member museums. The next issue will be in October 2011. With 17 members across the country the updates are sure to be interesting!

The 17 Members of the Alliance are:

- Beaty Biodiversity Museum
- Canadian Museum of Nature | Musée canadien de la nature
- Espace pour la vie | Montréal Space for Life
- New Brunswick Museum | Le Musée du Nouveau-Brunswick
- Nova Scotia Museum of Natural History
- Prince of Wales Northern Heritage Centre | Centre du patrimoine septentrional du Prince de Galles
- Redpath Museum | Musée Redpath
- Royal Alberta Museum
- Royal British Columbia Museum
- Royal Ontario Museum | Musée royal de l'Ontario
- Royal Saskatchewan Museum
- Royal Tyrrell Museum of Palaeontology
- The Manitoba Museum | Le Musée du Manitoba
- The Rooms Provincial Museum Division
- Toronto Zoo
- Vancouver Aquarium
- Yukon Beringia Interpretive Centre | Centre d'interprétation de la Béringie du Yukon

This newsletter is prepared by the Alliance of Natural History Museums of Canada (ANHMC). If you have any questions or comments please email Jessica Freeborn at jfreeborn@mus-nature.ca.

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Sent Packing: The Royal BC Museum Aliens are on the Road!

Aliens Among Us, the Royal British Columbia Museum's exhibition on invasive species has hit the road visiting nine British Columbia communities in an effort to spread the word about alien species to all corners of the province. There are currently more than 4000 invasive species in British Columbia and that number is growing.

To accompany the travelling exhibition, a first-of-its-kind virtual exhibition has also been developed – check it out here: alienspecies.royalbcmuseum.bc.ca

Photo: Invasive species – House Sparrow.
Courtesy of Royal BC Museum

Biodiversity Monitoring at the Royal Alberta Museum

The Royal Alberta Museum (RAM) continues to support biodiversity monitoring in Alberta by serving as the specimen processing centre for the Alberta Biodiversity Monitoring Institute (ABMI). This has involved hiring and contracting taxonomic specialists and summer technicians to sort and identify specimens collected for the project.

In 2011, samples were obtained from 163 terrestrial and 166 aquatic sites. In addition to a number of year-round staff involved with the initiative, 46 summer technical staff were involved with sorting, processing and identifying the specimens.

Photo: ABMI summer staff sorting mosses and lichens
Courtesy of the RAM

Royal Saskatchewan Museum's New Exhibit

The Royal Saskatchewan Museum (RSM) has been very active in its travelling exhibit program, *Creatures of Saskatchewan's Ancient Seas,* which provides other Saskatchewan museums and interpretive centres with the opportunity to host exhibits featuring marine fossils at no charge. Currently two travelling exhibits are on the road, one featuring a 70 million year old tylosaur, and a smaller exhibit featuring the skull of "Scotty," our *Tyrannosaurus rex*. A second mount of the tylosaur is at the T-rex Discovery Centre in Eastend for the summer. In total, seven venues have benefited from this program.

Of special note is "Big Bert," a 20-foot-long, 90 million year old crocodile found in east central Saskatchewan, in the Pasquia Hills. The casting and mounting of the two skeletons of Big Bert were completed in the spring of this year. One mount has found a home in the Pasquia Regional Park Interpretive Centre, close to where the fossil was discovered. The other mount is part of the temporary display in the RSM's lobby, but will be dismantled in September to become the centre piece of a larger travelling exhibit. This travelling exhibit will be completed in time for the 2012 summer season.

Saskatchewan Famous T-Rex "Scotty" Completed

Twenty years after it was discovered, preparation of "Scotty" (Saskatchewan's most famous *Tyrannosaurus rex*) has been completed. This *T.rex* was discovered in 1991 near the town of Eastend in south-western Saskatchewan. Excavation began in 1994 and continued off and on until 2003. The fight to get the skeleton out of the rock and cleaned was literally that, a fight. The challenges were twofold: 1) the matrix surrounding the skeleton was rock hard (pun intended) and 2) the skeleton was deposited by a fast flowing river and the bones were scattered across a large area. In the words of Tom Tokaryk (RSM Curator of Palaeontology), "…the skeleton was not posed like a 40-foot chicken lying on its side in a bed of soft sand!"

Scotty's remains were discovered in the Frenchman Formation, within 30 metres of the K/T boundary. This location means that Scotty was alive in the latest Cretaceous Period (65 million years ago), just before the extinction of dinosaurs. With a nearly complete skull, and about 65% of the bones recovered, Scotty is one of the more complete *T.rex* skeletons in the world. Interestingly, some of Scotty's bones are the largest ever measured from a *T.rex*, while other bones are not of the same proportions. This suggests that Scotty may not be the tallest *T.rex* ever found, but it might be the most robust. And because you were all wondering, Scotty got his name from a bottle of single-malt Scotch.

Photo: Big Bert skeleton in the RSM lobby
Courtesy of the RSM

Royal Tyrrell Museum Preparing to Study Preserved Ankylosaur Found Near Fort McMurray

In March of 2011, Royal Tyrrell Museum (RTM) staff spent some time at the Suncor mine near Fort McMurray to investigate an unusually textured section of rock. Expecting to find a marine reptile, they were amazed to discover one of the most exquisitely preserved ankylosaurs ever found. After three weeks of careful excavation, the well-protected remains of this armoured dinosaur were transported back to Drumheller. Sections of the find are currently being readied for research and display in the preparation lab.

A link related to the find can be found here:

Suncor Ankylosaur – Royal Tyrrell Museum
http://www.youtube.com/watch?v=dzppbAG99uE

Photo: Shawn and Mike with the newly discovered Ankylosaur
Courtesy of the RTM

What's New at The Manitoba Museum?

An in-house temporary exhibit explores the role of conservators in preserving and protecting museum artefacts. *Museum 911: Conservators Protecting Our Treasures* explains what the Museum's conservators do and why, and what this can mean for the public's precious objects. This exhibit runs until October 16th.

The Manitoba Museum offered free behind-the-scenes tours to the public this summer. Participants had the opportunity to see how dioramas are put together and visited one of the collections vaults. This is the second summer that the Museum has made these tours available to its visitors, and they are always hit.

The Manitoba Museum's *Titanic* exhibit focuses on the passengers aboard the *RMS Titanic* who were known to have a connection to Manitoba. Members of the public were invited to contribute their personal stories and artefacts, and the response was overwhelming, as over 60 emails and over 20 artefacts flooded in. A school program and a summer public tour have been developed around this in-house exhibit.

Amazing Arctic Plants at the Canadian Museum of Nature!

Botanists from the Canadian Museum of Nature (CMN) are leading an ambitious five-year project that kicked off this spring, building on the museum's strength in Arctic research. The goal of the Arctic Flora Project is to consolidate known information about the Arctic vascular plants of Canada and Alaska, add new data from under-explored areas and create a "new standard" for flora guides that incorporate digital assets and web and database technologies. The project leaders, Dr. Lynn Gillespie and Dr. Jeff Saarela, chaired the first planning meeting in March, joining collaborators from a few Canadian universities and researchers from Alaska and Norway to map out the road ahead for fieldwork, data collection and critical timelines.

"Extreme" Summer for Museum Visitors

Some of the planet's largest, smallest and just plain weird mammals have found their way to the Canadian Museum of Nature this summer. They are the stars of *Extreme Mammals*, a blockbuster travelling exhibition from the American Museum of Natural History, on display until November 6. (Read more at: http://bit.ly/qAwVmV). A highlight is a recreation of *Puijila darwinii*, a missing-link, otter-like animal discovered in the High Arctic in 2007 by one of our palaeontologists, Dr. Natalia Rybczynski. The show is drawing visitors to the museum's renovated site in downtown Ottawa, which National Geographic magazine cited this summer as one of Ontario's Top 10 family destinations.

Next up in March 2012 is *Whales Tohora,* a large exhibition from the Te Papa Museum in New Zealand. Get ready for the CMN to delve into all things whale related!

Photo: Sculptural recreation (left) and 3D skeletal print (right) of *Puijila darwinii*
Courtesy of the CMN

Start of Another Academic Year at the Redpath Museum

Fall 2011 will see the start of another academic year! At the centre of McGill University, the Redpath Museum continues to maintain its dynamic role as a centre for research and teaching. Fourteen PhD and 13 MSc degrees were awarded in the last 18 months alone to students who had studied at the Museum. Major research initiatives on subjects as diverse as Prof. V. Millien's studies on rodent morphologies in Quebec and Prof. A. Hendry's work on eco-evolutionary dynamics of guppy populations in Trinidad continue to provide data for numerous publications.

Most recently Prof. H. Larsson and collaborators at the University of São Paulo have identified a new species of a 70-million-year-old crocodile with many dog-like features. Also of interest, three Egyptian human mummies and six bird mummies from the Redpath Museum collection were recently scanned at the Montreal Neurological Institute by researchers from the University of Western Ontario.

Recent donations to the Museum have included Pre-Columbian ceramics, Chinese export wares (13th-14th Century), and Borneo material culture (circa 1970) to the World Cultures Collections. A significant number of African mammals that will enhance both teaching and exhibits were donated to the Natural History Collections. All of the Museum's exhibits are planned in consideration of the role of the collections in undergraduate teaching and with the broader educational mission of the Museum as a community resource for Montreal in mind.

Photo: Theban male mummy from Redpath Museum collection on scanner bed at Montreal Neurological Institute, courtesy of Nicolas Morin

Research Now Contributes More to Animal Care at Vancouver Aquarium's Marine Mammal Rescue Centre

Urgent phone calls to rescue and rehabilitate stranded animals are received by the Vancouver Aquarium's Marine Mammal Rescue Centre more than 150 times a year. Through a network of partners and volunteers coast-wide, the Marine Mammal Rescue Centre responds to the immediate need of stranded marine mammals around-the-clock.

That's how many sick or stranded baby seals are brought in from all along British Columbia's vast coastline for care and rehabilitation at Canada's largest marine mammal rescue facility. In all, the centre receives up to 180 marine animals a year, but a vast majority are harbour seals. It's a far cry from 40 years ago when the Rescue Centre was established. The Centre has evolved into not only an internationally recognized facility for rehabilitations and releasing distressed animals, but also as a research base for scientists seeking new and better ways for caring for marine mammals.

As with all science, says the Vancouver Aquarium's staff veterinarian Dr. Martin Haulena, the basis of successful research is identifying and understanding the problem at hand. "Our objective is to restore an animal and release it back into its own environment so that it survives and poses no risk to the wild. But the bigger picture is education, conservation and research, and our program incorporates all three facets as an institution," says Dr. Haulena. The Rescue Centre, he explains, has developed into a facility where people come to learn skills and conduct research and that's driving the Centre to new heights of excellence. "A lot of research is aimed at enhancing our work," says Dr. Haulena. "For instance, we are currently involved in projects to look at specific pathogens that we've isolated in our animals, and also disease processes so that we can investigate them more thoroughly."

Some of those projects are led by veterinary students who have received grants from the Morris Animal Foundation, a leading North American funder of research into animal care. One of the students, Chelsea Anderson, completed a project last year for which she investigated the prevalence of a bacterium called *Clostridium difficile* that produces toxins and can cause severe enteritis. She wanted to know if the disease occurred naturally in harbour seals, or if they became infected through other means, such as treatment with antibiotics that predisposes them to the infection. This year, another Morris Animal Foundation grant student, Allison Peterson, is investigating neurologic disease in seals and the risk factors associated with it, such as exposure to thiaminase (an enzyme found in certain fishes).

Photo: Dr. Haulena examining a seal, courtesy of the Vancouver Aquarium

Some of the research work, says Dr. Haulena, has a very practical purpose and is applied on site to enhance the Rescue Centre's results. For example, graduate student Amelia Macrae researched and developed a new formula to feed harbour seal pups. "We used to lose a lot of seals early on because we just couldn't get them to adjust to the formula and gain weight. There were years we lost 50 to 60 percent of the animals that came through here, now we are looking to release 70 to 80 percent of them, and a big part of that improvement is diet and nutrition based on the new formula," says Dr. Haulena.

The large number of seals and other marine mammals that pass through the Rescue Centre provides an important source of research data to measure changes in the coastal marine environment as a whole – and is an opportunity for collaborations beyond the Aquarium. One important collaboration is between the Rescue Centre and the Provincial Animal Health Centre's (PAHC) pathologist Steven Rafferty to help supply researchers around the world with valuable tissue samples. Other researchers can also request extra blood to be taken during a routine exam or they can ask for tissue samples from animals.

A major collaborative research program with the PAHC, the National Institute of Health and the University of British Columbia, is investigating the spread of pathogens from the terrestrial to the marine environment. "We are looking in particular at different protozoa (single celled organisms) that are typically considered to be terrestrial pathogens, but which have now somehow been introduced into marine wildlife," says Dr. Haulena. He adds that while many of these pathogens occur around the world, they are particularly prevalent on the Pacific Northwest coast, which is a hotspot for diseases of terrestrial origin, such as sarcocystis (that infects reptiles, birds and mammals), toxoplasma (a parasite that infects most warm blooded animals, including humans), and a fungal disease called cryptococcosis that has killed people on Vancouver Island, and is also now being found in stranded harbour porpoises and dolphins. "There's also interesting information coming out about antibiotic resistant bacteria in seals that we believe is of human origin," says Dr. Haulena.

The message, he adds, is that people's actions and activities in the coastal cities and costal environments impact the wildlife that also lives within the environments that we share. "Rescuing, rehabilitating and releasing marine mammals in need of care is why the Aquarium's Rescue Centre was established, but it's by no means all we can do. It's our research that will help us discover and understand our relationship with the marine environment and what we can do to help protect and preserve it – and that's why I love my job," says Dr. Haulena.

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The next issue of the ANHMC Newsletter will be in October, 2011 so stay tuned!

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Le prochain numéro du Bulletin de l'AMHNC sera en Octobre 2011, alors restez branchés!

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