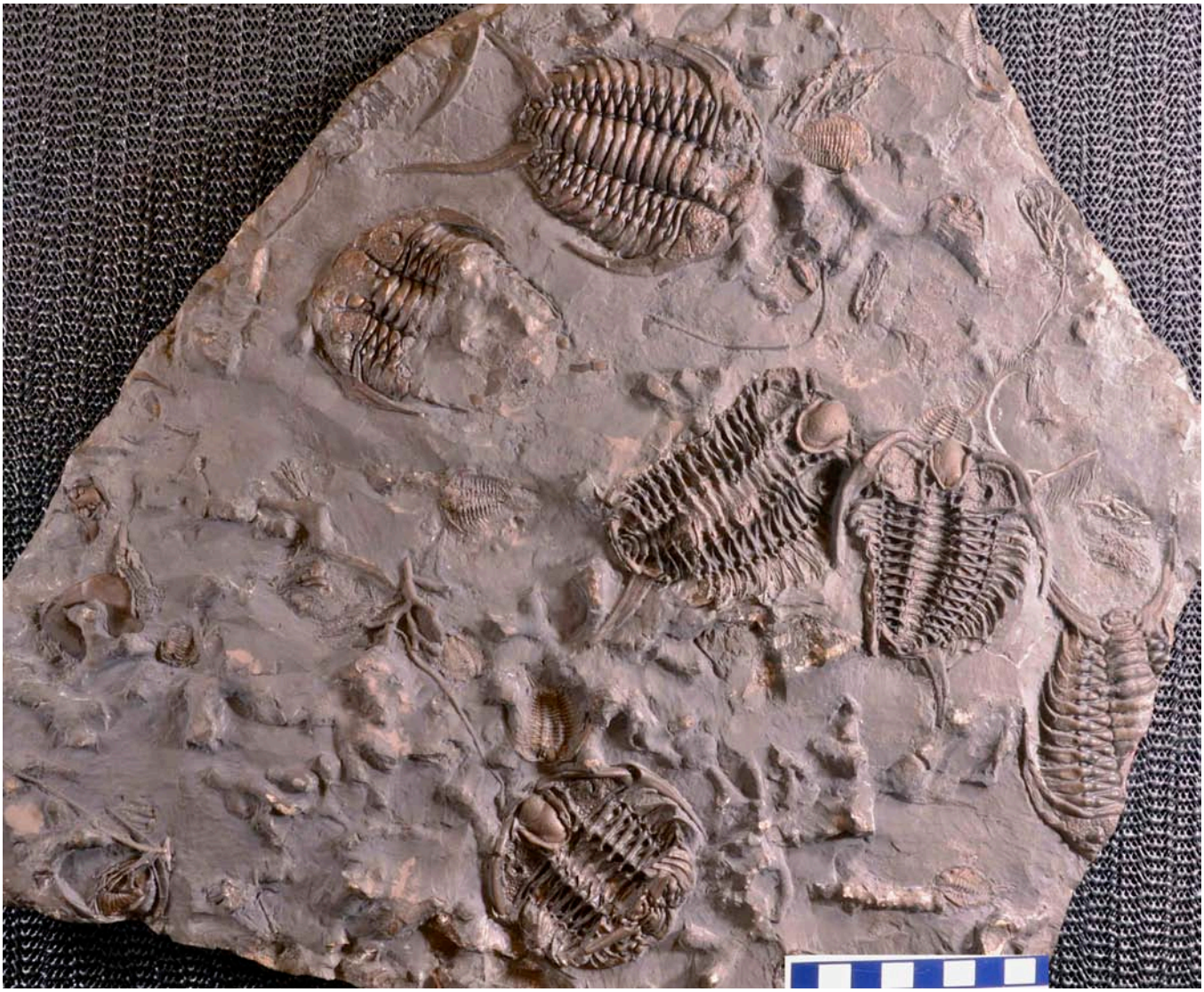
Bulletin of the MPE

Frank Habets trilobite collection donation

The year 2014 kicks off with one of the most important fossil donations since the inception of the Musée de paléontologie et de l'évolution: the Frank Habets trilobite collection.

(continued)



A slab of Upper Ordovician limestone filled with trilobite fossils from Ontario. There are six species of trilobites, the largest being *Gabriceraurus dentatus*. Among other trilobites, a few *Ceraurus*, *Raymondites*, *Flexicalymene* plus one *Bumastoides* and one *Isotelus* fragment can be recognized. There are also several partial bryozoan colonies and several beautiful crinoid calyxes.

Frank Habets trilobite collection donation (suite)

Frank Habets, a major fossil collector from the Ottawa area, over the years assembled an impressive collection of Ordovician trilobites, from both Ontario and Québec. Without a doubt, this collection of Canadian trilobites can easily be compared to those of major museums and other institutions in Canada. It has 167 specimens, almost all of them trilobites from the Ordovician of Ontario and Québec. There are also a dozen echinoderms and some trilobites from Morocco, which are spectacular! Frank built his collection in part through purchases and exchanges, but also by personal field work.

When you see the quality, diversity and rarity of the specimens, it becomes obvious that Frank has a thorough knowledge of trilobites, and built this collection with the specific purpose of safeguarding the Canadian fossil heritage. Not only do the specimens have all the necessary criteria of beauty and aesthetics to be excellent exhibit material, but better still, some may be new to records or even species unknown to science. A study by experts must be considered. In addition, some specimens come from sites that are no longer accessible today.

Magnificent specimen of the trilobite species *Isotelus latus*. Upper Ordovician, Cobourg Formation, found in Colborne, Ontario.

Photo above: A rare trilobite - *Hypodicranotus striatulus*. Upper Ordovician, Verulam Formation, found in Colborne, Ontario.
Photo at left: A trilobite belonging to the odontopleurid group - *Meadowtownella* sp. Because of its size and anatomical features, this trilobite could belong to a new species. Late Ordovician, Neuville Formation, Québec City area.

Frank Habets trilobite collection donation (suite)

Frank is part of a small community of Ontario collectors and researchers who, during the past three decades, have made significant contributions to the development of paleontology in this province. I personally really appreciate the importance of this collection. My experience of field collecting (dating back to 1992) and my consultations with researchers and their collections over the years makes me realize that we are in the presence of a unique collection. This is all thanks to Frank who had the insight to preserve it and the generosity to donate it to the Musée de paléontologie et de l'évolution for the benefit of all.

THANKS Franks for this fabulous gift! M. C.

Clockwise from upper left :
Cybeloides plana and *Flexicalymene* sp. (in the middle);
Nanillaenus latiaxiatus, Gamebridge, Ontario;
Amphilichas ottawaensis, Brechin, Ontario;
Erratencrinurus sp.;
Failleana indeterminata (on the right) and *Xylabion* sp. (on the left);
Hemiarges paulinus;
Bufocerauraus bispinosus.
In the centre : cf. *Boeadaspis* sp.
Unless otherwise indicated, all the trilobites come from Belleville, Ontario.

« Quebec : a sea of fossils » exhibition at Pointe-du-Buisson National Historic Site of Canada

We wanted to once again present the exhibition "Montreal: a sea of fossils" first shown at the Centre culturel Georges-Vanier, back in 2011. We did not need to look for a new location to exhibit our fossils : it appeared all by itself. Through a faithful friend of the Museum, Mr. Pierre Groulx, we were put in contact with the new director of the Musée québécois d'archéologie at Pointe-du-Buisson (Beauharnois), Ms. Caroline Nantel, who sought a way to diversify her museum's exhibitions. Never missing an opportunity to increase the visibility of the MPE, we quickly agreed on the subject and where to show it. The Pointe-du-Buisson archeology Museum has, on its premises, a building that is used for archeology interpretation, which was available. Part of it is used for traveling exhibitions. The space was ideal for an exhibition the size of "Montreal: a sea of fossils."

We therefore came to an agreement, which didn't involve any costs. We are presenting an improved version of "Montreal: a sea of fossils" in, what is called, the "interpretive pavilion", for 2½ years. The room is available, free of charge, and the Pointe-du-Buisson archeology museum will have nothing to pay for the expo. You can now visit this new exhibition which has been renamed "Québec: a sea of fossils." The inauguration took place on June 5, 2014 and the exhibition will remain open at least until the end of December 2015, with a probable extension until the end of December 2016. It is open from Tuesday to Sunday, including during winter, except in March-April, when access to the pavilion is not possible.

Overview of the sections on Anticosti fossils and trace fossils. You can see the "magic" touch of our designer, Annick Gaudreault, which greatly enhanced the appearance of the exhibition.

In what way is this exhibition improved? The 2011 version has often been criticized for being too complex, the texts too heavy and the presentation lacking a bit of color. So we called in the professionals. A museum professional (Geneviève Larouche) rewrote the texts to make them more accessible to the public and a designer (Annick Gaudreault) redesigned the panels and the lettering, and added color.

The *Isotelus rex* cast, acquired thanks to the generous donations from our 2013 fundraising campaign.

"Québec : a sea of fossils" (cont.)

Also, over the past 2 years we have received many donations of fossils that enhance the exhibition. In particular, the Frank Habets collection, consisting of Ordovician trilobites from Québec and Ontario (see previous article), is so relevant that we have dedicated a special area within the exhibition, where it can be seen under plexiglas cubes. After a few days the enthusiasm of visitors for the new exhibition was claerly apparent. Do not hesitate to go and visit and tell your friends about it.

For more details, go to: http://www.pointedubuisson.com

And especially to : http://www.pointedubuisson.com/calendrier-des-activites J.-P. G.

Photo at right: Introductory panels and, in the background, main entrance to the exhibition.

Photo below: Area reserved fot the Frank Habets fossil donation. Several fine specimens from this collection are displayed under plexiglas cubes. You can see in the back of the room, the section dedicated to the geology of the St. Lawrence Lowlands.

Conference « La paléontologie existe-t-elle encore? » at the 82nd Congress of ACFAS

ACFAS, known today as "Association francophone pour le savoir" is a fairly old Québec organization that presented its 82nd Annual Conference this spring. We had never attempted to organize a symposium there because the idea had never occurred to us. However, a member of our board of directors, Ha-Loan Phan, who is actually an employee of ACFAS, convinced us, I would even say enjoined us, to organize a symposium at the 82nd Congress, because it was a great opportunity to gain visibility. It seemed a challenge, given the size of the event, but Ha-Loan had convinced us that it would be easy, that the President would only have to endorse our participation and that everything would work out by itself. In fact, your President had to use fully the services of Bell and Sympatico. He contacted about 40 paleontologists and paleoenvironmentalists(1), and tried to convince them to come to Montreal during May 12 and 13 of this year, despite the $ 300 registration fees for the general public and $ 80 for students.

The response was very encouraging. About 29 people expressed interest, and of these, 21 actually registered. And, remarkably, all 21 actually came and presented their 20-minute communication.

The 82nd Congress was held on the campus of Concordia University, where we were assigned a classroom with projector and 41 seats. The conference lasted two days and the audience averaged 15 to 20 people. This is more than most of the many other symposia of this congress.

(1) You can use that word during your next game of Scrabble.

Professor Pierre JH Richard was the first, at the symposium, to give his presentation which was entitled: "Mount Royal from 13 000 to 9600 years before present: the Champlain Sea, tundra, trees, forest and beaver on a sea island and on an island in Lake Lampsilis."

Conference « La paléontologie existe-t-elle encore? » at the 82nd Congress of ACFAS (cont.)

The title of the symposium was "Does Paleontology still exist?" It is within the geological community in general that paleontology is not as widely present as before. Perhaps less widely, but there are now a variety of top specialists who make it a very diverse discipline. Paleontology has changed. We had a pretty good range of these specialists, including quaternarists, Precambrian people (I include here a specialist on Mars), a researcher on the Paleozoic, a paleoanthropologist, paleobotanists, vertebrates specialists, and pioneers on the use of CT Scan in the examination of fossils.

We would have liked if Richard Cloutier, from UQAR, had joined the others, but in the end, we did better: we presented a public lecture, that is to say, where access is free, and the highlight was, you guessed it: Richard Cloutier. As it should be, he entertained us talking about the appearance of tetrapods, in connection with the announcement of the discovery of a superb *Elpistostege* fossil from Miguasha, last year. The event was a success: there were about 35 spectators.

Will we repeat the experiment? Perhaps: the next ACFAS congress will be held in Rimouski, in May 2015. Meanwhile, there will be a Canadian Paleontology Conference in September at the Redpath, for which the MPE is co-organizer.

J.-P. G.

Public conference given by Professor Richard Cloutier entitled "In search of our distant origins ... 380 million years ago: the fish-tetrapod transition"

Some conference participants: from left to right, Dr. François Therrien, from the Royal Tyrrell Museum of Paleontology, Sergio Mayor, Secretary of the MPE and Chuck Billo, a member of the MPE.

The University of Montreal visits the MPE once again

The link between the Musée de paléontologie et de l'évolution and the academic world of Québec continues. Indeed, the MPE hosted, for the second consecutive year, a group of third year bachelor's students from the Geography department of the University of Montréal.

Students of the "GEO3132: Palaeogeography" course (given by our Vice President Alexandre Guertin-Pasquier) visited the premises of the MPE on January 27 and used our collections as part of their session work. They had the chance to work with our databases (which are available to all on request) and to provide additional data on the MPE's collections. Analyses by the students allowed them to go beyond the simple specimens and to better describe ecosystems and climatic conditions present at the time of fossilization.

The result of their hard work? A much better knowledge of the basic principles of paleontology, an introduction to systematics and websites showing distinct geological epochs based on fossils from the MPE. Hyperlinks to some of these sites are available at the end of the text.

The course has also been the subject of several conferences, including those of our longtime member and Professor at UQAM Anne de Vernal, and of Lyna Lapointe Elmrabti, master's student, also a member of the MPE and employed by the museum this summer. Lyna was also corrector on this course.

Links to some of the Web sites produced by the students of the course :
Team that worked on the Silurian : http://jeanseba.wix.com/silurien
Team that worked on the Ordovician : http://archamisa.wix.com/paleogeographie A. G.-P

Alex Guertin-Pasquier (seen from the back) explains the content of the paleogeography course to his students. The students enjoyed the visit to the *Laboratory for conservation and research — MPE*, where they had the opportunity to see and manipulate fossils from the collection.

Exhibition at the *Cosmodôme*

The MPE has been invited to produce an exhibition for the *Cosmodôme* in Laval, a city located north of Montréal. It would be up as soon as possible (which may still mean several months ahead) and would last for 5 years. The Laval Cosmodôme would pay an annual rent that would cover most of our costs. A small area, of about 250 to 300 square feet, located on a mezzanine, would be made available us. Despite its small size, the subject will be large: the history of life on Earth and the possibility of past life on Mars. We believe it is possible to cram such a large subject into such a small space. Considering the number of Martian fossils in our collection, the Martian part should not take too much space.

The structure of the exhibition is yet to be determined. Our attitude has often been to make historical exhibitions, following a timeline. This is perhaps is not ideal, especially for children. On the one hand, the terrestrial side is well documented except at the beginning, while on the other hand, there is little data on Mars, although the topography of very ancient times is probably better preserved than on Earth.

In our search for a solution, we had two opportunities. First, we obtained the collaboration of Dr. Richard Léveillé from McGill University, a geologist who is also member of the NASA team in charge of the robot Curiosity. Second, Professor Anne Bruneau, from the department of Biology, University of Montreal, and also a friend of the MPE, kindly helped us. She teaches a course, every winter, on natural history collections and their development. This winter, she proposed as a session project to one of her student teams to design our exhibition, given the limitations outlined above. On April 22, Marie-Pier Lavoie, Gaëlle Maze, Patrick Olivier Meunier, Chloe Serrÿn and Salma Naili produced a 37-page report which proposes a concept. This report proposes a non-chronological structure, which would fit well in cramped conditions and, very importantly, they offered a course to entertain the kids. We will analyze this proposal in the coming weeks in order to put up this exhibition. J.-P. G.

We recovered the rest of the Allen Petryk Collection

In June 2011, we proudly announced having recovered from Ottawa, the entire Petryk collection. Remember that Dr. Allen Petryk, formerly at the Ministry of Natural Resources of Québec, had sampled fossiliferous sediments on Anticosti Island in 1975-85 and that his collection, after passing through Laurentian University in Sudbury, ended up at the Geological Survey of Canada (GSC), in Ottawa. Since the samples lacked information on the sites sampled, the GSC didn't have a need for them. The MPE could not let this opportunity slip away. So we brought the entire collection to Montreal, which was more than a ton of rocks. Some fine examples are shown in our website under: Photo Galleries> The Allen Petryk collection.

The entire collection? The warehouse of the GSC in Ottawa is huge and while reviewing all its possessions (for a possible move), the curator realized that part of the Petryk collection was still there, hidden in bags on top of the cabinets (which are approx. 2.50 m high). Since we now have extra storage space, located in the Point-St-Charles Day Care Center, the main laboratory has more free space, which allows us to fill it again with new material. So we went back to the GSC (Mario Cournoyer, Jacques Letendre and myself), using Nathalie Daoust's Grand Caravan (whose suspension was put to the test) and in two trips, we brought back more than a ton of rocks that we have just begun to investigate.

I remind you that our friends at the GSC want us to do an exhibition about Anticosti, in Quebec. They hold in reserve a large number of fine specimens exactly for that purpose—this, you'll understand, in addition to the Petryk collection. When the exhibition happens, we will have a hard time deciding which specimens to choose. Meanwhile we need to find a location for the Museum ... J.-P. G.

Findings in the Neuville Formation : small crinoids as passengers on big crinoids.

James C. Brower[1], John Iellamo[2] et Mario Cournoyer[2]

Mario Cournoyer of the Musée de paléontologie et de l'évolution, John Iellamo, an engineer, and I are studying the crinoid faunas of the Upper Ordovician Neuville Formation in and around Québec City, located in the Province of Québec, Canada. The Formation consists of interbedded grey lime mudstones and calcareous shales which were deposited in relatively deep waters, mostly below storm wave base, on the outer shelf. Brachiopod dominated assemblages are common and suites of burrowing and winnowing trace fossils are also known. However, the beds with abundant fully articulated echinoderms, namely crinoids, cystoids, carpoids, and starfish, and trilobites are the most spectacular, and rarest, occurrences in the formation. Most of these fossils are found on limestone beds that are overlain by muds. The beds are interpreted as mudflows or turbidity currents generated by storms on the shallow parts of the shelf. These storms suspended the finer sediments in the water column which then flowed down the basin slope to rapidly bury the organisms at or near where they were living. The Neuville Formation of Québec roughly correlates with various Upper Trenton Group units in Ontario and New York which share similar faunas and depositional environments. The Neuville Formation is overlain by the oxygen deficient deep water graptolitic black shales of the Utica Shale. The first author thanks Kevin Brett for information about the Neuville Formation.

One of the most unique and ecologically informative examples of the Neuville crinoids is seen in the associated photographs (see next page). The large crown **(a)** with the long stem segment belongs to the disparid crinoid *Ectenocrinus geniculatus*. Two small juvenile camerate crinoids of an undescribed species of *Euptychocrinus* are also present, one immediately to the right **(b)** and the other further to the right of the crown of *E. geniculatu*s **(c)**. The juvenile camerates were clearly attached by wrapping their stems around the column of *E. geniculatus* **(d)**. This must have occurred while the *E. geniculatus* was alive and elevated well above the seafloor at the time of death and burial. This is evidenced by the fact that the specimens are all complete and the camerate stems are wrapped all the way around "and actually appear knotted or tied to" the stem of *E. geniculatus*. Although the stem of *E. geniculatus* is not complete, its preserved length would indicate that the base of the crown was located at least 120 mm above the seafloor.

A likely scenario follows. The juvenile *Euptychocrinus* n. sp. probably cemented their embryonic holdfasts to the stem of their host. During growth, the stem of typical Paleozoic crinoids becomes longer due to the addition of new plates and calcite accretion onto older ones. Hence the relationship between the host *E. geniculatus* and its residents, namely the two small crowns of *Euptychocrinus* n. sp., must have continued for an appreciable amount of time. The small camerates obviously benefited greatly from this partnership because attachment to the elevated stem of *E. geniculatus* would have raised them above the muddy seafloor along with the organisms living there. All Paleozoic crinoids were passive suspension feeders that used their tube feet to capture small swimming and floating micro-organisms from the surrounding water currents. Although the specimens of *Euptychocrinus* n. sp. and *E. geniculatus* were feeding at the same level, they probably did not compete for the same food supplies. *Euptychocrinus* n. sp. with its narrow food grooves and small closely spaced tube feet would have eaten a narrow range of very small food particles. *E. geniculatus* must have had wider food grooves along with larger gaps between adjacent tube feet which would have enabled it to capture a wider set of larger food items. Thus it seems unlikely that the specimen of *E. geniculatus* was harmed by its relationship with the two small individuals of *Euptychocrinus* n. sp.

This situation may not have been uncommon because another example of *E. geniculatus* with an attached small crown of *Euptychocrinus* n. sp. has also been found. Finally, a mature individual of *Euptychocrinus* n. sp., also discovered, but its stem is not complete. Consequently, the adult mode of life of this species remains, as of yet, unknown.

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2 : Musée de paléontologie et de l'évolution, 541, rue de la Congrégation, Montréal, Québec, H3K 2J1

The large crown (a) with the long stem segment belongs to the disparid crinoid Ectenocrinus geniculatus. Two small juvenile camerate crinoids of an undescribed species of Euptychocrinus are also present, one immediately to the right (b) and the other further to the right of the crown of E. geniculatus (c). The juvenile camerates were clearly attached by wrapping their stems around the column of E. geniculatus (d).

Additions to the Museum's Website list of articles

Until recently, the "publications" page of our website contained only publications related to the specific activities of the Museum. For example, we cited several articles reporting on our research at the St. Nicolas sandpit near Québec City. Sampling had been done during field work organized by the MPE and the identification and conservation work had been done in our lab. We continue to work on publications that correspond with that criteria. We also included in the list references to guidebooks or summaries of conferences to which we contributed.

However, in recent years, we have had the pleasure to see our membership enriched with scientists who have many scientific publications to their credit. Some are in domains closely related to the goals—the mission—of the Museum. We are now beginning to include these articles in our list of publications.

Recently, we added : :

• Guertin-Pasquier, A., Fortier, D. & Richard, P.J.H., 2012. Paleoecology and paleoclimatology of the Plio-Pleistocene Bylot Island fossil forest, Nunavut, Canada. Canadian Paleontology Conference 2012, Proceedings No. 10: 35-36.

• Hagadorn, J.W., Lacelle, M. & Groulx, P., 2012. Mirabel's ancient surfers: Insights from Cambrian trace fossils and sedimentology of the Potsdam Group, Québec. Canadian Paleontology Conference 2012, Proceedings No. 10: 37.

• Lacelle, M., Hagadorn, J.W. & Groulx, P., 2012. Prolific Potsdam *Protichnites*: Giant euthycarcinoid trackways from Beauharnois, Québec. Canadian Paleontology Conference 2012, Proceedings No. 10: 43.

• Richard, Pierre J.H. et Grondin, P., 2009. Histoire postglaciaire de la végétation, pp. 170-176, dans Chapitre 4, Saucier et al., « Écologie forestière », pp. 165-316, dans Ordre des ingénieurs forestiers du Québec, Manuel de foresterie, 2e édition, Ouvrage collectif, Éditions MultiMondes, Québec, 1510 p.

• Richard, Pierre J.H. and Occhietti, S., 2005. 14C chronology for ice retreat and inception of Champlain Sea in the St. Lawrence Lowlands, Canada. Quaternary Research, vol. 63 :353-358.

• Occhietti, S. et Richard, Pierre J.H., 2003. Effet réservoir sur les âges 14C de la Mer de Champlain à la transition Pléistocène-Holocène : révision de la chronologie de la déglaciation au Québec méridional. Géographie physique et Quaternaire, vol. 57 (2-3) : 115-138.

We also added online the program with abstracts of the symposium we organized at the 82nd ACFAS congress :

• Colloque « La paléontologie existe-t-elle encore? » Programme et résumés, Colloque No. 206 - 82e Congrès de l'ACFAS, Université Concordia, Montréal, Québec, Canada. 12 et 13 mai 2014. 30 p.

Finally, an article was published in the April issue of this year's *Canadian Journal of Earth Sciences* about one of our specimens: a fossil bone (metatarsal) of a brown bear (*Ursus arctos*), found in 2004 in the Saint-Nicolas sand pit, near Québec City. This is the first bear fossil found in the Champlain Sea sediments, and this is also the first fossil bone from Champlain Sea sediments to have been identified through DNA analysis. We also added to the list the abstract of an oral presentation given by Michel Chartier at a 2012 CPC meeting in Toronto.

• Harington, C.R., Cournoyer, M.E., Chartier, M.D., Fulton, T.L. & Shapiro, B., 2014. Brown bear (*Ursus arctos*) (9880 ± 35 BP) from late-glacial Champlain Sea deposits at Saint-Nicolas, Quebec, Canada, and the dispersal history of brown bears. Canadian Journal of Earth Sciences, vol. 51: 527-535.

• Chartier, M.D., Cournoyer, M.E., Harington, C.R., Fulton, T.L. & Shapiro, B., 2012. "I bet we'll find that bear": A case of perseverance and serendipity in the Champlain Sea. Canadian Paleontology Conference 2012, Proceedings No. 10: 25-26.

Have a good read ! J.-P. G

Descriptive card of the specimen

Specimen number:	MPER3.1
Identification :	Cast of a complete individual
Genus and species:	*Isotelus rex*
Age :	Upper Ordovician
Locality :	Churchill, Manitoba

In 1999, a joint team of Manitoba and Ontario paleontologists discovered in the Upper Ordovician of the Churchill, Manitoba, area a 72-cm long *Isotelus* that was and remains the largest complete trilobite ever found. It became the holotype of a new species: *Isotelus rex*. It was extracted from the rock and sent to Winnipeg, where a cast was made and sent to the ROM. We borrowed it for the 2011 exhibition on the St. Lawrence Lowland. Finally, last winter, we acquired our own cast from the Manitoba Museum: it was delivered (see photo) just in time for the new exhibition at Pointe-du-Buisson, where you can admire it.

The genus *Isotelus* belongs to the order Asaphidae. It is characterized by a total of 8 thoracic segments and the semicircular pygidium is very similar to the cephalon. It is said that it is an "isopyge" form, that is, that its ends are similar. However, there is no risk of confusion between front and rear. The segments of the thorax are slightly bent backwards and the eyes are clearly visible on the cephalon. The MPE has multiple *Isotelus* specimens belonging to different species, including a 25 cm *Isotelus latus* given by François Habets (see photo, page 2).

Memberships

Just as at the beginning of every year, we wish to inform you that your membership must be renewed. Attached to this newsletter, you will find a copy of the membership renewal form. Remember that you can also make a donation; the Museum is a charitable organization duly registered with the Canada Revenue Agency (No. 890282445RR0001) and therefore authorized to issue receipts for income tax purposes.

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