

Bulletin of the MPE

July 20, 2025

20th anniversary
of the laboratory
2005 - 2025



Bulletin of the MPE

Laboratory for Conservation and Research - MPE 20 years and counting!

For over twenty years now, our workspace, informally known as the "Laboratory for Conservation and Research - MPE" has been the site of numerous projects. The need for a place to house the MPE's fossil collections for conservation, as well as a venue for our Board of Directors meetings and other events, was becoming increasingly imperative.

Never, when this space was originally built, would we have thought that institutions like the Geological Survey of Canada or Concordia University would give us paleontological collections to be preserved in this place, that university students would work there during the summer or during internships, that researchers would visit the laboratory as part of their research projects, and finally that type specimens of fossils belonging to new species would be housed there.

(M. C.)



Michel Chartier (left) and Martin Dubreuil (right), both founding members of the MPE, are busy cataloguing the MPE's first fossil collections. Among other things, they designed the structure of the database that is still in use today. January 2005.



MPE Laboratory - 20 years and counting!

Initial construction

Construction of the laboratory began in late 2003. Slowly, the wall structures, electrical circuits, and insulation were installed, followed by the drywall and paint during 2004. In December 2004, the installation of furniture obtained from the now-defunct Geology Department of the University of Montreal was completed. The laboratory was finally ready to run.

Initially, the available space for the laboratory was very modest (about 30 m²), but over time another 30 m² was added. With this limited footprint, we still managed to make the space functional. Three areas were planned: an office, including the research library; a preparation room where fossils are cleaned; and a conservation room where fossils are stored. With the expansion, the size of the office, but especially that of the conservation room, was increased. The preparation room remained the same size because we had abandoned the idea of doing intensive preparation work on site as it would produce too much dust. We eventually decided to have the preparation done outside, by competent people with the appropriate equipment and the talent required to do this type of delicate work. (M. C.)



The birth of the laboratory, with only the floor, walls, and ceiling structure in place. It was far from being possible to imagine what these future premises would look like once construction was completed. On the shelves, you can see the fossil collection that Nathalie Daoust and Mario Cournoyer had donated to the MPE when the laboratory was established. Spring 2004.



Above: The office and its first computer (iMac) on which the cataloging was carried out.

Bottom left: The preparation room.

Bottom right: The conservation area with the Nathalie Daoust and Mario Cournoyer collection, which includes tens of thousands of fossil specimens. December 2004.



MPE Laboratory - 20 years and counting!

The first cataloged fossil

There's a beginning to everything. In the case of cataloging the MPE collections, it was decided in early January 2005 that the first fossil donation that would be cataloged was Jean-Claude Breton's collection. Jean-Claude, a longtime friend of Martin Dubreuil and a member of the paleontology section of the Club de minéralogie de Montréal (CMM), had collected his fossils during field trips organized by the MMC during the 1980s alongside Martin.



Nearly complete trilobite of the species *Failleana indeterminata*
Lagacé Quarry, Laval, Québec, Canada. Scale in mm.
Specimen MPEP1.1 cataloged on January 20, 2005.

The Jean-Claude Breton collection includes 477 fossils, most of which were found in quarries or natural outcrops in Montreal and the surrounding region. This collection was subdivided into small groups of specimens that represented one collection during one field trip. This gave a date and a location, which are minimally essential data for research. "Location" includes, if possible, the stratigraphic position, formation, and geological age. In cases where some fossil collections lacked details regarding dates or collection locations, Michel Chartier, Martin Dubreuil, and Mario Cournoyer assigned a site to the specimens they recognized based on rock type or identified species. Without realizing it, the trio of Michel, Martin, and Mario were establishing a working method that would be used when it came time to catalog other collections.

On January 20, 2005, the first specimen to be cataloged in the laboratory was the almost complete imprint of a trilobite (*Failleana* sp.) found by Jean-Claude Breton on April 28, 1985, in the former Lagacé quarry in Laval, Québec, Canada. This quarry (now flooded) was renowned for its superb Middle Ordovician fossils of trilobites and echinoderms (crinoids, starfish). To put the rarity of this type of fossil into perspective, only thirteen complete specimens of this species are present in the MPE's collections, which currently hold over 80,000 specimens.

The specimen number assigned to this fossil is MPEP1.1. The first three letters, "MPE," represent the Museum's acronym. The fourth letter, the "P," represents a paleontological specimen. In other cases, it can represent a reproduction (R), a sedimentological sample (S), or a modern or zoological specimen (Z). The first number (before the dot) is the accession number (an accession represents a group of specimens cataloged at the same time), and finally, the number following the dot is the specimen number. This system is central to the architecture of the database where information about each specimen is stored. (M. C.)



MPE Laboratory - 20 years and counting!

An essential database

The structure of the database (DB) was inspired mainly by two models, that of the Miguasha Park and that of the Royal Saskatchewan Museum. Our system consists of three interrelated DBs: 1) the ACCESSIONS registry, which groups a set of specimens; 2) the LOCALITIES registry, which locates the provenance of the specimens; 3) the SAMPLES registry, which identifies and provides various details for each specimen (see image below). We have used the FILEMAKER PRO software since our beginnings. Robust and reliable, it has never caused us any problems. In addition, we use the services of the Montreal-based firm [NUAGE BORÉAL](#) for hosting the DB and for software maintenance. This DB is essential to the sustainability of our collection, thanks to the safeguard of scientific information concerning each of the fossils. (M. C.)

Musée de paléontologie et de l'évolution

Registre des échantillons Registre des accessions Registre des sites

MPEP 658.1

Acronyme No d'accession No d'échantillon
 MPEP 658 1
 MPER
 MPES
 MPEZ
 MPEA

Lieu d'entreposage
Cabinet Ord-09, tiroir A

Identification

Genre
Pliomerops

Espèce

Catégorie taxonomique supérieure
Arthropoda, Trilobita, Phacopida, Pliomeridae

Identificateur taxonomique

Date d'identification taxonomique

Identification anatomique

Identificateur anatomique

Date d'identification anatomique

Description de l'accession MPEP 658 [Détails](#)

Dix spécimens. Les formes représentées sont des trilobites, des crinoïdes et des brachiopodes.

Source de l'acquisition
 Normand Pineault



Description / Préservation de l'échantillon
 Un morceau de roche préservant un individu partiel (céphalon et thorax).

Composition du lot

Nombre de spécimens
 1

Localisation [Détails](#)

Nom de localité
 Carrière Turnbull

Nom du site
 Sommet de la carrière

Numéro de localité/site MPEL 13 . 1

Province / Pays Québec; Canada

Comté / Région Lanaudière

Système / Etage Ordovien; Sandbien 2

Groupe / Formation Trenton; Deschambault

Conservation Terrain Observations Age-Localité Autres infos

Date de collecte
 1994

Collectionneur
 Normand Pineault

Notes de terrain
 Equipe de terrain : Mario Cournoyer, Nathalie Daoust, Danièle Houle et Normand Pineault.

Contexte stratigraphique
 Trouvé in situ sur le plancher (sommet de la carrière) dans la partie sud de la carrière.

Contexte taphonomique

Compilateur
 Jean-Marc Ethier et Mario Cournoyer

Date de compilation
 19 avril 2014

Remarques

Pour visiteurs/exposition
 Oui Non

Nombre de fossiles total
 30089

An overview of the environment in which cataloging is done. In this case, we can see the data entry page for the SAMPLES REGISTRY. The main sections in this registry are: - the sample number; - its taxonomic identification; - a description of the sample; - the site from where it came; - details on the collecting, its preservation/preparation, various observations; and finally the person who did the cataloging and the date the record was created.



MPE Laboratory - 20 years and counting! Help with cataloging the collection

Cataloging a collection is a long and arduous task. It's arduous because it requires patience, discipline, and courage. 1) Patience is required: it's meticulous, thoughtful work that must not be rushed. There's no question of cutting corners. 2) Discipline is required: maintaining the same level of quality throughout the cataloging process. 3) Courage is required: not throwing in the towel once you've realized the amount of work still ahead of you. You catalog one specimen at a time, and in the end, you'll have a well-organized and well-documented collection.

But to do this, we needed help, and for several years (from 2010 to 2017), the MPE hired university students during the summer as part of the Canada Summer Jobs program. Thanks to their invaluable assistance, more than 20,000 specimens were cataloged. Over the years, several volunteers have lent a hand to this long-term project; here are their names: Michel Chartier, Martin Dubreuil, Jean-Marc Ethier, Jean-Pierre Guilbault, Huda Algaed, Jérémy Trudeau, Victoria Cournoyer, Marc Haensel, Sidney Segura and Simon La Charité. In almost all cases, Mario Cournoyer supervised them during this work. Today, we have more than 81,000 specimens cataloged. (M. C.)



Left: Alexandre Guertin-Pasquier unpacks samples collected by Allen Petryk on Anticosti Island during the 1970s. Samples donated by the Geological Survey of Canada. Summer 2012.

Right: Lyna Lapointe-Elmrabti cleans more samples collected by Allen Petryk on Anticosti Island during the 1970s. New samples also donated by the Geological Survey of Canada. Summer 2016.



Top left: Karine B. Fortin restoring bones belonging to the Daveluyville whale. Summer 2016.

Top right: Fannie Dubois and Fanny Morland preparing the inventory of the Daveluyville whale bones. Summer 2011.

Bottom left: Emeline Raguin cataloging fossils from Anticosti Island collected by Nathalie Daoust and Mario Cournoyer. Summer 2010.

Bottom right: Léa Peter attempting to identify ammonite fossils from France. A gift from the late Pierre Gonin. Summer 2015.



MPE Laboratory - 20 years and counting! A necessary expansion

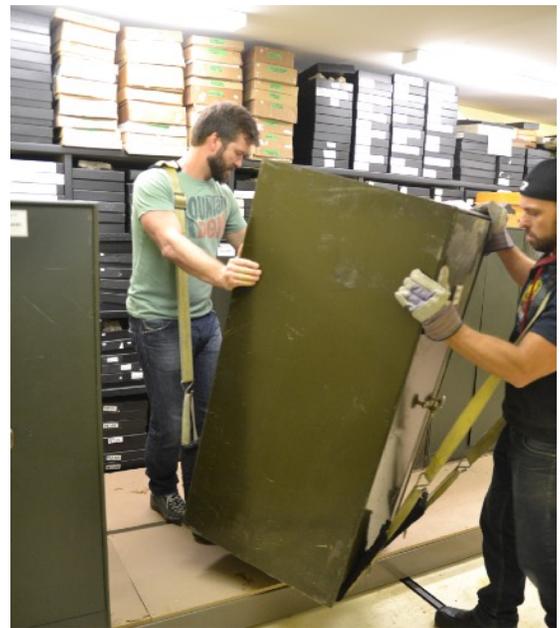
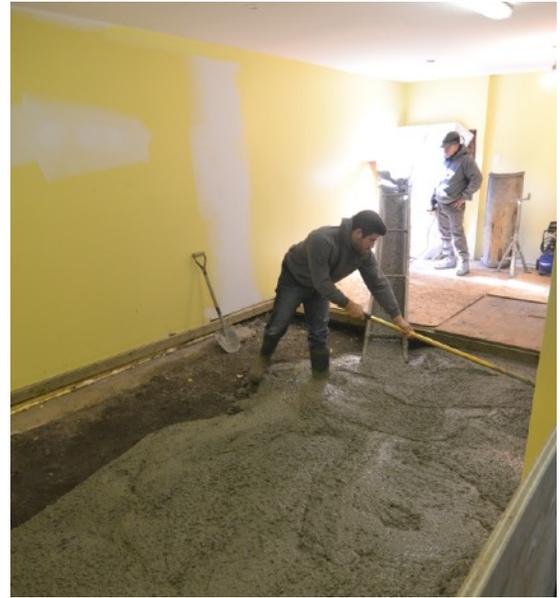
With the donation of Allen Petryk's samples from Anticosti Island (nearly 2 tons of rocks!), the donation of private collections from Daniel Saint-Laurent (Anticosti and other locations), Pierre Gonin (fossils from around the world), Maurice Gratton (fossils from the St. Lawrence Valley), and Christine Cadoux (fossils from France), as well as the arrival of the Concordia University paleontological collection, an expansion of the laboratory became more than necessary.

In the new part of the laboratory, the space was going to be dedicated entirely to conservation. The 26 metal cabinets donated to the MPE by the Canadian Museum of Nature in 2010 were installed there. They were installed on a rail-mounted compaction system to maximize the new space. A section of the new part was reserved for Concordia University's paleontological collection (which includes over 11,000 specimens). A row of seven cabinets was installed along a wall. Above and beside this row, sturdy shelves were installed to accommodate oversized specimens and surplus collections. A fundraising campaign was organized to cover the costs of the expansion, the purchase of the compaction system, and a temperature control and humidity monitoring systems. In total, the campaign raised \$24,562 thanks to the generosity of our members and friends. (M. C.)



Left: Alexandre Guertin-Pasquier working on the floor structure of the new part of the laboratory. Summer 2015.

Right: David Beaudriault, with the assistance of Didier Thomas, came to lend a hand with the wall assembly. Fall 2015.



Top left: Christophe Hellman and Ha-Loan Phan, all smiles, along with several friends of the museum, are busy removing the old floor.

Top right: Laying the new cement slab.

Middle left: The installers of the rail compaction system.

Above right: Patrick Thibault and Michel Deschênes installing the cabinets on the new rail compaction system.

Bottom left: Anne Brochard, Jean-Marc Ethier, and Nathalie Daoust transferring the drawers containing the fossils into the cabinets.



MPE Laboratory - 20 years and counting!

Important visits

After cataloging a good portion of our fossil collection, it was time to get the research side of things underway at the MPE laboratory. More than half of the collection (approximately 40,000 specimens) was collected in the field by several of our members and friends over the years, from the mid-1980s to the present day. When a fossil is collected in the field, no one other than the discoverer had ever seen it before. This statement may seem obvious, but it's nonetheless true. If this "discovery" is well documented (location of discovery, where and how the fossil was collected, etc.), this specimen becomes much more important, as scientific information will now follow it into the collections, provided this data is not lost over time. This fossil may one day be used for research, or at least become a reference specimen.

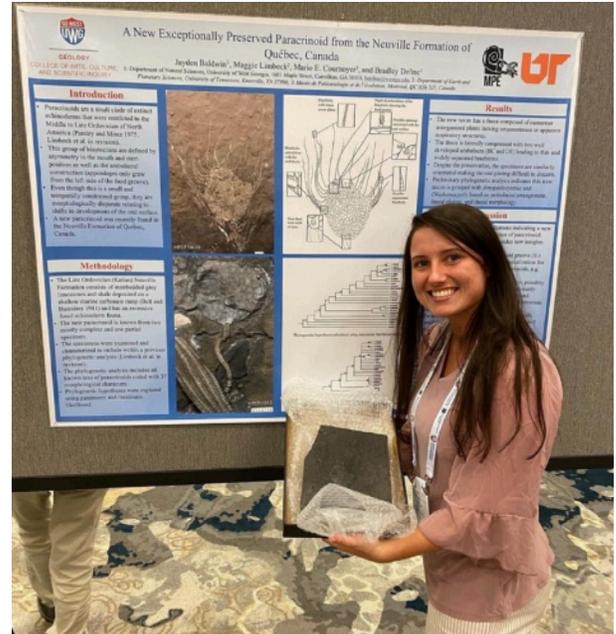
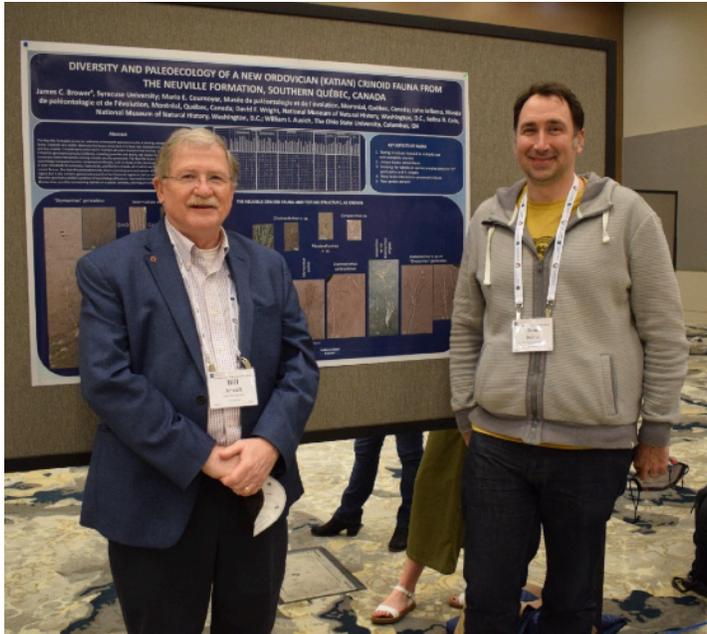
Around 2012, Mario Cournoyer initiated an approach with the North American paleontology community to see if anyone would be interested in working on our Ordovician and Silurian invertebrate fossils (450 to 430 million years old) from Québec. Indeed, several of our fossils deserved to be studied more closely. Some could represent new fossil species, others would provide new knowledge about their lifestyle (paleoecology), or about the geographical and temporal distribution of certain fossil groups. The response was positive and even enthusiastic! The result was the publication of a dozen articles in reputable, peer-reviewed scientific journals, as well as thirteen oral or poster presentations at Canadian and American scientific conferences. Here are some photos of our visitors over the years.

(M. C.)



Left: Kraig Derstler of the University of New Orleans, examining carpodid fossils from the Québec City area. October 2012

Right: Maoyan Zhu (Nanjing Institute of Geology and Paleontology, China) on the left and Heyo Van Iten (Hanover College, Indiana, USA) at right discuss the ecology of conularids. July 2017



Top left: William I. Ausich (Ohio State University, USA) on the left, in front of his poster presentation on [crinoids from the Québec City area](#). He is accompanied by Brad Deline (University of West Georgia, USA), on the right, who is Jayden Baldwin's master's advisor (see photo at right). Geological Society of America Meeting, Cincinnati, Ohio. April 2022

Top right: Jayden Baldwin, Master's student at West Georgia University, USA, presenting her research findings on a new genus of Ordovician paracrinoid from the Québec City area. Geological Society of America Symposium. April 2022

Bottom left: Robert Feranec (New York State Museum, USA) sampling a fossil whale vertebra for carbon-14 dating. Results were published in [a paper on new carbon-14 dating](#). November 2016

Bottom right: Andrew Milner (St. George Dinosaur Discovery Site, Utah, USA) consulting our Quaternary fossil collections. December 2015



MPE Laboratory - 20 years and counting!

Interns and MSc students

In addition to the contribution of researchers from outside Québec on research projects, we have been fortunate to welcome university students for introductory research internships, MSc students, and even classes of students who have come to the laboratory to conduct group work.

In 2015, three students (Auréanne Loïselle, Simon La Charité-Harbec, and Émilie Housego) from Christopher Cameron's laboratory (Department of Biology at the Université de Montréal) came to do an introductory research internship lasting 12 to 15 weeks (8 hours/week). In all three cases, the work was on Ordovician echinoderm fossils from the Neuville Formation, located in the Québec City region. In the end, two detailed written reports and a poster presentation came out of this work. (M. C.)



Top left: Auréanne Loïselle conducting a comparative study on the nutritional mechanisms of the crinoid species *Ectenocrinus simplex* from Québec with those from the United States. The result was a poster presentation in the fall of 2015.

Top right: Émilie Housego focused on the ontogeny and description of a cystoid fossil species (cf. *Cheirocystis* sp.) from the Neuville Formation (Upper Ordovician) in the Québec City area. She produced a written report. 2015

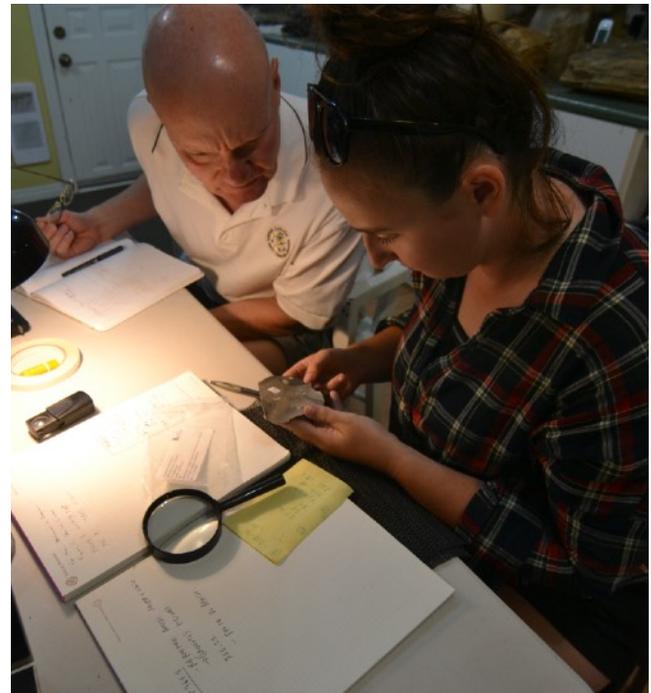
Above: Simon La Charité-Harbec studied the ontogeny and described the crinoid species *Ectenocrinus simplex* from the Québec City area. The final result was a written report.



MPE Laboratory - 20 years and counting!

Interns and MSc students (continued)

In 2016, Laurence Gagnon, a student in Christopher Cameron's lab (UdeM, Department of Biology), completed an introductory research internship in our lab. Her work was to study the possibility that Ordovician conularid fossils from Ontario (animals with pyramid-shaped shells that are cousins of jellyfish) were attached to brachiopod shells. She was accompanied by researcher Heyo van Iten from Hanover College (Indiana, USA), a specialist in conularids (and other related fossils). During her stay, Laurence measured all the available material and produced a written report. In the following years, Professor Van Iten returned to the lab to continue this project, inviting Laurence to contribute to a future article on the subject. The article is still unpublished but is one of our priorities. (M. C.)



Left: Heyo Van Iten (left), a professor at Hanover College (Indiana, USA), explains what Laurence Gagnon, a student in the Cameron lab (Biology Department, UdeM), should be measuring on shale slabs from Ontario. These slabs contain fossils of conularids (extinct animals, relatives of jellyfish) attached to brachiopod shells (small bivalved animals superficially resembling clams). The goal is to document the associations by measuring lengths and angles of arrangement, and to create an inventory of occurrences on these rocks. All of this will be used in a future article. The project is still ongoing. July 2016

Right: Heyo Van Iten (left) assisting Laurence Gagnon during a subsequent visit in the summer of 2017. Laurence's non-internship and volunteer assistance contributed to an [oral presentation](#) (given by Heyo) at a Geological Society of America conference in Pittsburgh on March 21, 2017. Her work will be included in a paper that is still pending.



MPE Laboratory - 20 years and counting!

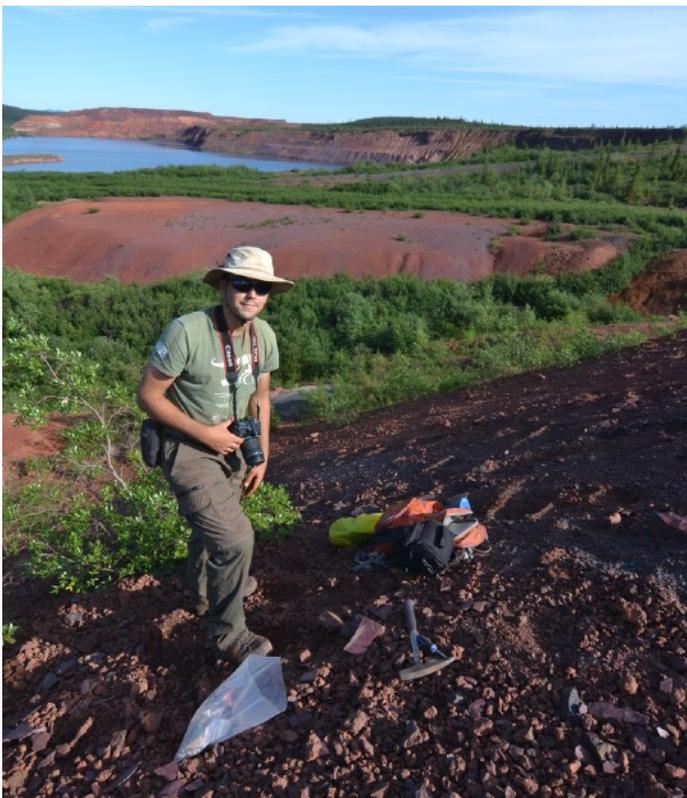
Interns and MSc students (continued)

In the fall of 2017, we received a request from Alexandre Demers-Potvin, a MSc student in the Department of Biology at McGill University, to work on our Cretaceous (dinosaur-era) plant and insect fossils from the Redmond Formation near Schefferville, Québec, Canada. This was at the suggestion of his MSc advisor, Hans C.E. Larsson (McGill U), who suggested Alexandre contact us, knowing that we had sampled the Redmond Formation near Schefferville in 2013.

His MSc project consisted of 1) producing an updated analysis of the prevailing climate in Québec/Labrador during the Late Cretaceous (Cenomanian stage, approximately 100 million years ago), based on the flora of the Redmond Formation, and 2) increasing the known biodiversity of this geological formation by describing new insect species. Additionally, as part of his MSc project, Alexandre organized an expedition to the Redmond 1 mine in August 2018, hoping to find more material (which was the case). This expedition was funded by a National Geographic Early Career Grant and Polar Knowledge Canada's Northern Scientific Training Program (POLAIRE).

Two articles were published: the first on the [flora of the Redmond Formation](#), and the second describing a [new species of cicada](#) from the same formation. During his master's degree, Alexandre gave five oral and/or poster presentations at conferences in Québec, Canada, and even internationally. Finally, he published another article in 2021, describing a [new species of praying mantis](#), also from the Redmond Formation. The fossils of the Redmond Formation on the Québec/Labrador border continue to amaze us.

Alexandre's contribution to the research on fossils from the Redmond Formation in Schefferville (a site that was forgotten by researchers for more than sixty years) is of great importance for deepening knowledge of a little-known period in northeastern North America. (M. C.)



Alexandre Demers-Potvin sampling mine debris resulting from the operations of the Redmond 1 mine during the 1950s (the iron ore mine can be seen behind Alexandre). This debris contains a mixture of different rock types (clays, argillites, iron ore), and it is in the red argillite that plant and insect fossils dating back to the time of the dinosaurs (approximately 100 million years ago) are found. This argillite represents the sediments of an ancient lake. August 2018

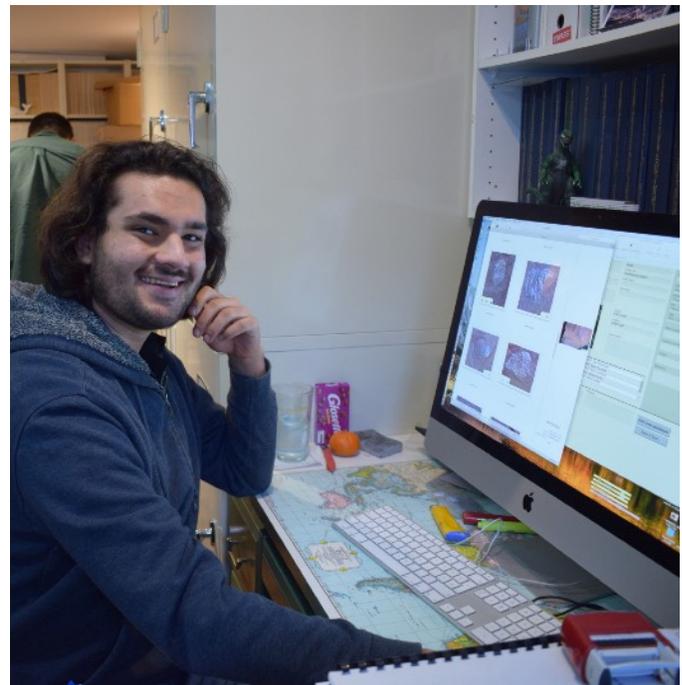


MPE Laboratory - 20 years and counting!

Interns and MSc students (end)

In 2018, we were approached by Professor Christopher B. Cameron of the Department of Biology at the Université de Montréal to work on a set of fossils we were holding in the lab, but whose affinity was unknown. These fossils showed soft-bodied preservation, something that is very rare in the fossil record. Normally, we find the remains just of hard parts of animals, like shells or carapaces. One of his students, Huda Alghaled, was going to study them as part of her MSc degree. The result of her thesis offered a first draft of an answer for these enigmatic fossils, the conclusion being that we were dealing with a type of coral living in a soft tube. These fossils show a series of tentacles adorning the upper part of a tube, in which a digestive canal can be seen. Among these fossils, we find individuals alone, or in groups, gathered at the base of their tubes. The results of his work have not yet been published, but recently (March 2025), an article was submitted to the Journal of Paleontology. We are awaiting requests for revisions and hope to see this article published soon.

In February 2025, André Mueller, a MSc student in the Department of Biology at McGill University, borrowed several Late Cretaceous cockroach fossils found near Schefferville, Québec, Canada. These cockroach fossils are among the 300 insect specimens (partial or nearly complete) collected during our two excavation campaigns in 2013 and 2018, and represent nearly 20% of the fossil insects found in these deposits. André's main MSc project will instead focus on the description of a new ceratopsian skull from the Late Cretaceous (Campanian stage), found at Dinosaur Provincial Park in Alberta, Canada. He will still study and, most likely, publish on our cockroach fossils, which are also Late Cretaceous in age. Furthermore, in 2024, André published on [new species of mayfly nymphs](#), which had been found in Schefferville during our field campaigns. The holotype of one of these newly described species is a fossil deposited in the MPE's collection. (M. C.)



Left: Huda Alghaled (left) during her dissertation defense in the Department of Biology at the Université de Montréal. Christopher B. Cameron (right) was her MSc supervisor. 2019

Right: André Mueller, in the MPE laboratory, selecting cockroach fossils from Schefferville (Québec, Canada). February 2025.



MPE Laboratory - 20 years and counting!

The research library

At the MPE laboratory, you can consult numerous books and documents concerning Earth sciences, but also biological sciences and everything related, directly or indirectly, to paleontology. Initially, in 2010, Martin Dubreuil, along with Nathalie Daoust and Mario Cournoyer, donated their personal libraries, including more than 300 books on human evolution, dinosaurs, and paleontology in general. Also in 2010, we received a large donation of documents (1,246 documents, to be exact!) from Professor Michel A. Bouchard of the Université de Montréal. This donation consisted of his personal research library, but it also included many works belonging to Professors John A. Elson (McGill) and Peter P. David (UdeM). This was a good start for our library. Subsequently, we received important collections from the Geological Survey of Canada (GSC) in Ottawa and the GSC store in Vancouver (bulletins, memoirs, reports). Another important donation was the personal research library of Professor T.H. Clark, who was director of the Redpath Museum and a professor at McGill University for over 30 years. Many offprints and monographs dating from the 1930s to the 1970s were signed by the original authors. A historical treasure in itself, in addition to being relevant documents for our research since they concern the geology and paleontology related to our fossils found in the St. Lawrence Lowlands. We have received many other donations since 2010 and we would like to thank all these donors. Today our library contains nearly 6,000 documents! (M. C.)



Top left: Our library of journals. We have complete (or almost complete) sets of the Canadian Journal of Earth Sciences, the Journal of Paleontology, and Géographie physique et Quaternaire.

Top right: Old volumes obtained from Normand Pineault, a specialist in old and new science books. These include Pictet's Treatise on Paleontology, and books by Georges Cuvier and Charles Darwin.

Bottom left: The T.H. Clark collection (McGill), comprising 1,464 offprints and monographs on Ordovician fossils of North America, many of them autographed by the authors.

Bottom right: A selection of books donated by Martin Dubreuil and Nathalie Daoust/Mario Cournoyer on paleontology in general.



MPE Laboratory - 20 years and counting!

Other activities in the laboratory

The laboratory is the MPE's *pied-à-terre*, often serving as an office for work meetings, Board of Directors meetings, and our Annual General Meetings of members of the MPE. At other times, we have hosted visits of people from the field of museum science or in other cases, politicians. We have also organized icebreaker evenings on a few occasions where participants of an upcoming conference were invited to the laboratory to spend the evening with their colleagues. Finally, there have been a few recordings for TV shows made at the laboratory, featuring our collections. We invite you to look at the following photos recounting some of these moments. (M.C.)



Top left: Participants at the Annual General Meeting of Members on October 13, 2023.

Top right: Our President, Ha-Loan Phan, and our Secretary, Charles Gagnon, Chair of the 2023 Annual General Meeting of Members.

Bottom left: One of the many Board meetings held at the laboratory, this one in 2015.

Bottom right: Annual General Meeting of Members on April 8, 2018.



Photo 1: Visit by Espace pour la Vie leaders in 2015. From left to right: Rachel Léger, Charles-Mathieu Brunelle, Sergio Major, Mario Cournoyer, Karine Boivin-Roy, Pierre Lacombe, Jacques Lachance, and Jean-Pierre Guilbault (front).

Photo 2: Visit by City of Montreal councillors in 2014. From left to right: Chantal Rouleau, Manon Gauthier, Chantal Rossi, and Alexandre Guertin-Pasquier.

Photo 3: Visit by Mayor Denis Coderre and two of his colleagues in 2016. From left to right: Alexandre Guertin-Pasquier, Diane de Courcy, Denis Coderre, Nathalie Daoust, Mario Cournoyer, Karine Boivin-Roy, and Jacques Lachance.

Photo 4: Filming an episode of *Le Code Chasténay* (Télé Québec), in 2014. Pascal Forget, sitting at the lab computer, consulting our database.

Photos 5 and 6: Ice-Breaker evening before the 2014 Canadian Paleontology Conference. Photo 6, from left to right, Alison M. Murray, Hans Larsson (seen from the back), Mike W. Caldwell, David C. Evans (also seen from the back). In the background, Robert Sensenstein



MPE Laboratory - 20 years and counting!

The collection

Over the years, the Museum of Paleontology and Evolution's collection has grown and diversified. Specimens come from a multitude of sources, primarily private collectors as well as academic and government institutions. It is composed mainly of fossils, but also of zoological, sedimentological, and archaeological specimens, as well as reproductions. Today, there are more than 81,380 specimens cataloged in the database. In addition, it is estimated that approximately 20,000 to 30,000 uncataloged specimens remains to be added to the database. The table below lists the donors and the contents of their collections. (M. C.)

People and institutions who have contributed to the MPE collection

- **Nathalie Daoust / Mario Cournoyer:** These two founding members donated their personal collections to the MPE, comprising tens of thousands of fossils, primarily from Québec, but also from elsewhere in North America.
- **Michel Chartier:** A founding member of the MPE, he donated his Ordovician and Quaternary fossils from the St. Lawrence Lowlands. These are very well documented and entirely collected by himself.
- **Martin Dubreuil:** A founding member of the MPE. A well-documented collection of Ordovician and Quaternary fossils from Québec, collected by himself.
- **Jean-Marc Morin:** A collection of Quaternary fossils from the Saint-Césaire sandpit, Québec, Canada, a site now depleted.
- **Normand Pineault:** A diverse collection with a focus on Québec.
- **Jean-Claude Breton:** Suite of fossils mainly from Québec, collected during the 1980s.
- **Yvon Globensky:** Collection of Ordovician fossils representative of the St. Lawrence Lowlands, assembled by Dr. Globensky, paleontologist for the Québec Ministry of Natural Resources.
- **Allen Petryk:** Important collection of Ordovician and Silurian fossils from Anticosti Island, made by Dr. Allen Petryk during the 1970s and 1980s while he was working for the Québec Ministry of Natural Resources.
- **Frank Habets:** Large collection of Ordovician trilobites from Ontario and Québec. Several remarkable specimens.
- **Louis Habets:** Uncle of Frank Habets. Collection of fossils from around the world, bequeathed upon his death.
- **Albert Cornu:** Over 1200 specimens coming mainly from the province of Québec, but also from around the world.
- **Michel Montpetit:** Several hundred fossils of various origins.
- **David Sangster:** Fossils from around the world. Beautiful exhibition specimens.
- **Maurice Gratton:** Collection of Ordovician and Quaternary fossils from Québec and Ontario.
- **Pierre Gonin:** Collector and dealer in fossils and minerals. He donated several thousand fossils of very diverse origins.
- **Christine Cadoux:** Several thousand fossils from France, including Jurassic-age fish.
- **Daniel Saint-Laurent:** Collector and owner of a private museum in the Gaspé Peninsula. He closed his museum and donated his collection, of very diverse origins, which includes beautiful exhibition specimens.
- **Pierre Groulx:** Collector and dealer in fossils and minerals. Upon his death, he bequeathed his collection to us, which includes fossils from around the world, a large collection of Cambrian trace fossils from the Montérégie region, casts, and reproductions.
- **Concordia University:** A collection of several thousand fossils representing all biological groups and from all ages and origins.
- **Michel Jébrak:** Collection of fossils of all ages from France.
- **Dr. Alfred Lenz:** Following his retirement, Dr. Lenz of Western University in Ontario bequeathed his research collection, which consists primarily of several thousand Silurian and Devonian graptolite fossils from Québec, the Yukon, and the Northwest Territories.
- **Iannick Tessier:** Private collector focusing on Quaternary megafauna. He donated several hundred Ice Age mammal fossils, including mammoth tusks and large bones.



MPE Laboratory - 20 years and counting!

Conservation spaces

Although the laboratory has limited space for conservation and other activities, we are able to preserve our 80,000 specimens on site. Installing a rail-mounted compaction system for our cabinets saved a lot of floor space. This system was entirely funded by generous donations from our members and friends! Placed on this rail system were the metal "banker's cabinets." Although they were not perfectly fireproof, they still allowed us to preserve the most important specimens, whether rare, beautiful, or for reference (we will return to the subject of fire protection in the next section). We feel it is necessary to remind you that the Canadian Museum of Nature, Canada's national museum of natural history, donated 26 of these cabinets to us about fifteen years ago. This was an extremely important donation for the MPE, solidifying our commitment to properly preserving our fossil collections for future generations. (M. C.)



Top left: Overview of the conservation room with the metal "banker's cabinets" donated by the Canadian Museum of Nature.

Above: The Concordia University collection and its cabinets. During the laboratory expansion, a conservation space was reserved for this collection, which contains 11,280 specimens.

Bottom left: A row of cabinets (the one on the right) that has been compacted to allow access to the fixed cabinets (those on the left). The compaction system rails are barely visible.



The Concordia University Collection

Top left: The top drawer contains crinoid fossils, and the bottom contains sea urchin fossils.

Top right: A drawer with fossil trilobites. Bottom left: Fossil corals.

Bottom right: Several drawers containing fossil ammonites.



The Christine Cadoux Collection

Top left: Several wooden boxes containing a vast collection of Eocene fossils from the Paris Basin. The Cadoux Collection includes 12,950 specimens of mollusks and other invertebrates that lived 50 million years ago in a warm sea located in the region surrounding present-day Paris.

Bottom left: A close-up view of one of the boxes, which contains gastropod fossils.

Right: We can see in this cabinet some of the Jurassic-age fossil fish that were included in the Cadoux collection. Also on display are a mammoth molar and Carboniferous plant fossils, all from France.



MPE Laboratory - 20 years and counting!

Type and figured specimens

Our collection includes some very important fossils: type or figured specimens. These are fossils that have been included in scientific publications either because they represent new species, or because they display unique characteristics or exceptional preservation. To date, the MPE holds 10 holotype specimens (unique and original specimens that serve as a reference for the description of a new species), 15 paratype specimens (secondary specimens that serve to complete the description of new species), and 38 figured specimens (specimens used as a visual reference in a publication to illustrate already known species). These type (and figured) fossils are considered by the scientific community to be the most important of all the fossils preserved in collections around the world. They must be preserved in the best possible conditions, away from fire and the risk of theft or damage.

In 2020 and 2021, a fundraising campaign was launched to enable the MPE to acquire two specialized fossil conservation cabinets, manufactured by Lane Science Equipment, based in New York State. The fundraising campaign was a success; we received \$21,120.00 in donations from our generous members and friends. Among these donations, we received two donations of \$5,000, the first from Mr. Gilles Renaud, a life member of the MPE, and the second from Ms. Chantal Rouleau, Member of Parliament for Pointe-aux-Trembles, Minister Delegate for Transport and Minister responsible for the Metropolis. The campaign having exceeded our objectives, it allowed us to acquire two more cabinets than expected! Finally, we will have adequate cabinets for the most important fossils in our collection: the type and figured specimens. (M. C.)



Lane Scientific Cabinets

The four conservation cabinets reserved for our type and figured specimens. The American company Lane Scientific has been supplying the world's greatest museums with their conservation needs for over 50 years. These cabinets are fireproof and feature sturdy metal drawers that can support heavy rocks.



Some of the type and figure specimens preserved in our Lane Scientific cabinets.

Top left:

Crinoid specimens (type and figure) from Anticosti Island (Québec, Canada) that were used for a [2019 publication in the Journal of Paleontology](#). This article updated knowledge on Anticosti crinoids since the publication of Ausich and Copper's monograph in 2010.

Center left:

Silurian macroalgal fossils from the Témiscamingue region. They were featured in an [article describing a new algal species](#) from the same site as these. These algal fossils of the species *Thalassocystis striata* are among the earliest Canadian occurrences, as this species was already known from Michigan (United States).

Bottom left:

Several Ordovician crinoid fossils from the Québec City region. These fossils, not yet described, will be the subject of two scientific publications: the first will describe the crinoid fauna of the Neuville Formation, and the second will attempt to clarify the species belonging to the genera *Ectenocrinus* and *Drymocrinus*. Additionally, [several specimens show complete individuals, from root to calyx](#), as well as ecological interactions with other living groups, which is very rare in invertebrate paleontology.

Bottom right:

Some of the vertebrate fossils found in the Champlain Sea deposits, approximately 10,000 years old. Some of these specimens were featured in articles or guidebooks. [The majority of these fossils were carbon-14 \(14C\) dated for an article on the chronology of the colonization and ecological dynamics of marine mammals in the Champlain Sea.](#)





MPE Laboratory - 20 years and counting!

Ongoing activities

3D Digitization of MPE Figured Specimens

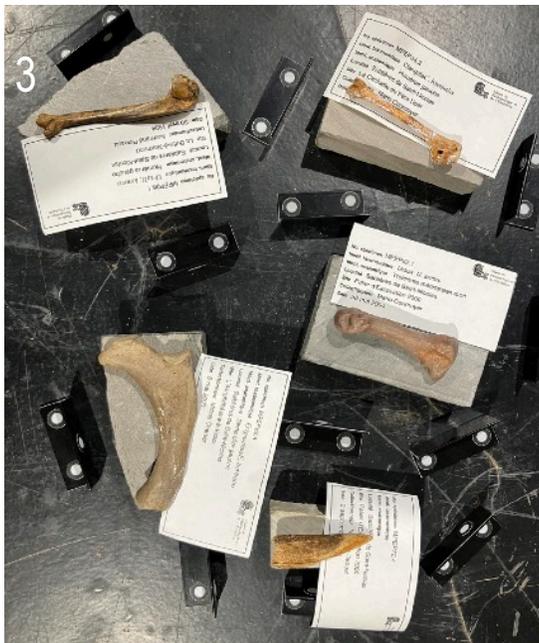
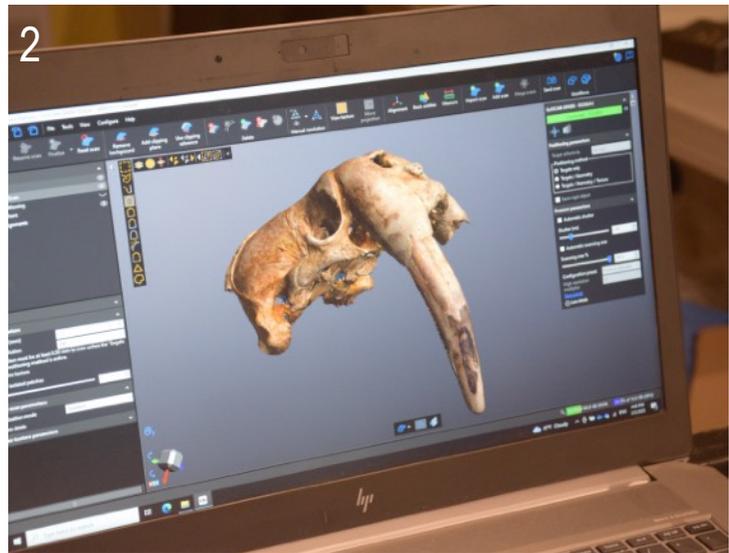
The 20th anniversary of the MPE laboratory is an opportune moment to integrate new techniques in virtual paleontology and collection preservation, in order to propel the MPE into the second quarter of the 21st century, which begins this year. Thus, in March 2025, a 3D digitization campaign of MPE specimens illustrated in scientific publications was launched. Eleven previously figured specimens, as well as a very recent addition to the MPE collection, were scanned by Alexandre Demers-Potvin, now a postdoctoral researcher at McGill University. To do this, Alexandre used a scanner emitting structured light, allowing the 3D surface of each specimen to be reconstructed (but not their interior, as is the case with X-ray CT scans). This cutting-edge device in scientific and industrial imaging technology belongs to the research laboratory of Professor Hans Larsson (McGill University) and is distributed by the company Creiform, based in Lévis.

Eleven of the twelve scanned specimens represent vertebrate remains from the Québec Quaternary. The Saint-Nicolas Sandpits are particularly well represented in this initial virtual collection, including one of only two walrus skulls known from the entire Champlain Sea (MPEP577.1), a brown bear metatarsus (MPEP82.1), very rare in eastern North America, as well as two seabird humeri (MPEP34.2 and MPEP36.1). The only unpublished specimen that completes this collection, MPEP1732.1, is a remarkably well-preserved seal skeleton, discovered near Ragueneau (on the North Shore) in June 2022, in clay deposits of the Goldthwait Sea. The "puzzle" that all the bones of this seal constitute will eventually be assembled using 3D modeling software, in order to reconstruct the skeleton as part of its scientific description. We offer our sincere thanks to Jimmy Durand and Mariane Chamberland, who discovered and carefully cleaned this precious skeleton and who offered it to the MPE, as well as to Mathieu Tremblay (*Le Naturaliste du Lac*), who acted as an intermediary between the donors and the MPE and who subsequently transported it to Montréal.

The 3D models produced using this scanner achieve a maximum resolution of 200 microns (0.2 mm) per voxel, creating extremely faithful replicas of the original specimens. They are an invaluable asset for the conservation of the collection, as they can be disseminated much more easily than physical specimens. The original scans are all currently being processed in the Larsson laboratory to produce refined versions that can be easily stored (in the MPE's digital archive) and shared online with scientific collaborators.

Beyond the MPE, this scanner also made it possible to create a 3D model of the only known Mastodon tooth from mainland Quebec. This remarkable specimen, which belongs to the Ilnu Museum of Mashteuiatsh, was scanned at McGill University in early May 2025 by Louis-Philippe Bateman, a MSc student in Hans Larsson's laboratory. Once again, Mathieu Tremblay ensured the round-trip transportation of the specimen between Mashteuiatsh and Montreal. The 3D model of the tooth will eventually be printed in multiple copies, which will be integrated into the educational program of the Ilnu Museum of Mashteuiatsh.

There are plans to create an online collection of MPE's digitized specimens, hosted in a database tailored to natural history collections. [MorphoSource](#) is an attractive candidate for this purpose, as it allows for regulated access to downloads and Creative Commons-type licenses that legally regulate the use of its collections. The maintenance of this site is funded by the NSF (National Science Foundation) in the United States. (A.D.-P.)



Digitization session of emblematic MPE specimens using a 3D structured light surface scanner.

Photo 1: [Walrus skull](#) (*Odobenus rosmarus*, MPEP577.1) from the Champlain Sea near Saint-Nicolas, scanned by Dr. Alexandre Demers-Potvin.

Photo 2: Overview of the preliminary 3D reconstruction of the walrus skull (MPEP577.1), where the surface color of the bones and teeth was recorded during the scan.

Photo 3: Various vertebrate bones from the Saint-Nicolas Sandpits, ready to be scanned. Clockwise from top left: [Thick-billed murre](#) (*Uria lomvia*, MPEP36.1) [humerus](#), [long-tailed duck](#) (*Clangula hyemalis*, MPEP34.2) [humerus](#), [brown bear](#) (*Ursus arctos*, MPEP82.1) [metatarsus](#), possible [antler tip](#) (MPEP72.4), and [incomplete bearded seal](#) (*Erignathus barbatus*, MPEP58.4) [rib](#).

Photo 4: This nearly complete rib cage represents only a small portion of the preserved bones of a Goldthwait Sea seal recently discovered in Ragueneau, North Shore (MPEP1732.1). A virtual 3D reconstruction of this skeleton is now underway to contribute to its scientific description.



MPE Laboratory - 20 years and counting!

The past traces the pathway of the future

It's been a long road to get to where we are today. It has been long, and progress has been uneven, driven by fossil donations, meetings with experts and collectors, and under fluctuating economic conditions. Has this resulted in nothing more than an accumulation of undoubtedly beautiful and well-preserved specimens? Rather, we believe that the work accomplished makes the MPE more than a fossil collection; it undeniably establishes it as an institution of scientific and educational value. To this end, we must consider not only what the MPE represents on a Québec scale but also on a broader geographical scale.

The exhibitions we've mounted and the group excursions we've organized have certainly made us known and expanded our experience in contact with the public, but it's our laboratory work that has contributed most to increasing our social value. This is evident when you consider the many students who have come to work with us, whether at the undergraduate, master's, or doctoral level. We are not talking here about the students we hired for several summers, particularly to document the collection. We are talking about all those who came because of the interest the collection represented for their academic research. In this regard, a most significant event was the bequest of part of the Alfred Lenz Collection from Western University in Ontario. Professor Lenz clearly requested that his graptolite collection be bequeathed to us because we were a new organization with the potential to grow. In fact, we had barely received it when someone in the United States was already asking us for information about it. This is a good example of scientific recognition.

Many other similar stories could be told where a kind of synergy effect manifests itself. A detailed reading of this Bulletin recounts several. It is normal for a natural science collection, having reached a certain level of diversity, to also reach a certain maturity that increases its attractiveness. The idea here is not to start going door to door to advertise our specimens, but to take advantage of opportunities that arise to expand our network of researchers and friendly institutions. The goal is not to catch more prey, like a spider, but to generate more studies that will make the MPE a repository of knowledge. We are almost at the point where we could constitute a kind of scientific institution. This is with a view to a name change that would indicate a change in structure: we would be an institute or institution and no longer a museum. As an organization engaged in specimen-based research, we would always have our collection in perpetual growth. We wouldn't have an exhibition hall with the capital investment it requires, but we could retain the possibility of organizing traveling exhibitions, if time and funding permit.

It's a fact that we haven't increased our activity in recent years. This is in part because a number of very dedicated members had to stop their volunteer contributions, leaving Mario Cournoyer alone to carry out work partly decided by others (the Board of Directors), and to some extent imposed by the arrival of donations that had to be processed immediately due to their genuine importance for the MPE. The visibility of this work is indeed rather low. Currently, we have more than enough members on the Board of Directors. What's missing are active volunteer members in the lab willing and able to carry out museum tasks, even if it's just writing text. The fact remains that the exhibitions, while exciting to organize, haven't brought us any significant attention in the scientific world. On the other hand, our laboratory activities, whether in research or education, have had a significant impact. The renewal of our website should be an opportunity to present to the world this improved face, that of a research institution active in its field.

(J.-P. G.)





Specimen descriptive sheet

Specimen No.: MPEI558.1 Found by: John Iellamo
Genus and species: *Ceraurus pleurexanthemus* and *Cheirocystis anatifomis* Locality : Québec City, Québec
Âge : Upper Ordovician, Trenton Group, Neuville Formation ~450 Ma

This block shows about 70 specimens of *Ceraurus pleurexanthemus* and two echinoderms of the class Rhombifera: *Cheirocystis anatifomis*. Both species are common enough that finding one specimen is not an event and rare enough that one would be proud to find one or two during a day of digging. But finding so many—in good state of preservation—on a single limestone slab is an event! How could this assemblage have formed? These are not molts because molts leave exoskeletal parts open along suture lines, which is not the case here. Could this be an example of “mass mortality”? This is a common occurrence in the Trenton Limestone: a storm causes a sudden influx of suspended mud that settles, thus depriving the specimens of oxygen and killing them on the spot. Such conditions generally preserve all the organisms present *in situ*. However, the faunas of Trenton faunas are usually quite diverse, unlike what we see here. We can also think of a gathering for the purpose of mating; today, some species do this. The presence of the two echinoderms would be accidental. Or perhaps there was simply something good to eat there. Somebody has a better idea?



Membership

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

Editorial team

Mario Cournoyer (M.C.), Alexandre Demers-Potvin (A.D.-P.)
Jean-Pierre Guilbault (J.-P. G.) and specimen sheet

Reviewed by: Alexandre Demers-Potvin, Jean-Pierre Guilbault
and Pierre J.H. Richard

Photos: Mario Cournoyer (all)
except Alexandre Demers-Potvin (page 24)

Board of Directors

Ha-Loan Phan — President
Vincent Roy — Vice-president
Charles Gagnon — Secretary
Jacques Lachance — Treasurer
Michel Chartier — Advisor
Jean-Pierre Guilbault — Advisor
Jacques Kirouac — Advisor
Richard Labrie — Advisor
Samuel Lachance — Advisor
Mario Cournoyer — Director and Head of the
Laboratory for Conservation and Research - MPE

To reach us

Musée de paléontologie et de l'évolution
541 Congrégation Street
Montréal, Québec, Canada H3K 2J1
Tel. : 514-933-2422
Email : info@mpe-fossiles.net
Website : www.mpe-fossiles.net

[Facebook Page](#) [Facebook Group](#)