

## BACKGROUNDER

### New Burgess Shale Fossil Site in Kootenay National Park

In 1909, world-renowned paleontologist Charles Walcott spent a summer exploring Yoho National Park's mountainous topography in search of hidden treasures, only to stumble upon what he would later name the Burgess Shale on the final day of his field season on August 29. Similarly, in 2012, a Royal Ontario Museum (ROM) field expedition led by Dr. Jean-Bernard Caron spent part of their summer in search of the next big paleontological discovery.

Just like Walcott a century before, a hunch led Caron and his team to a rocky slope high in the Canadian Rockies. Along this rocky slope they found a startling variety of fossils that immediately caught their attention. The researchers then pinpointed the source of the fossils to higher up on the mountain slopes and began to excavate the fossils layer-by-layer.

In a short 15-day field season, the researchers collected thousands of specimens representing more than 50 animal species, several of which were new to science. Incredibly, many of the species previously known from Yoho are better preserved in Kootenay, retaining very fine, never-before-seen anatomical details that are important for understanding the shape of the animal 'family tree.'

The new site parallels Yoho in its spectacular richness of arthropods, a group that today represents more than 80% of all living animals, including insects, spiders and lobsters. Another similarity between Marble Canyon and the original discovery is that both sites would still be buried today if not for the dedicated exploratory work of scientists.

The original Burgess Shale site in Yoho National Park was recognized in 1980 as one of Canada's first UNESCO World Heritage Sites. Now protected under the larger Rocky Mountain Parks UNESCO World Heritage Site, the Burgess Shale attracts thousands of visitors to Yoho National Park each year for guided hikes to the restricted fossil beds from July to September. Both Parks Canada and the Burgess Shale Geoscience Foundation lead hikes to the fossils.

All the Burgess Shale fossil specimens in the Marble Canyon area of Kootenay National Park were collected under a Parks Canada Research and Collection Permit. The ROM holds the world's largest collection of Burgess Shale fossils, which are held in trust for Parks Canada.

To learn more about the Burgess Shale visit this award-winning website produced by the ROM and Parks Canada: [www.burgess-shale.rom.on.ca](http://www.burgess-shale.rom.on.ca). The website contains fossil photo galleries, animations and animal reconstructions, as well as the history of the early discoveries.

Dr. Jean-Bernard Caron is Curator of Invertebrate Palaeontology, Department of Natural History at the Royal Ontario Museum, and Associate Professor, Dept of Earth Sciences & Dept of Ecology and Evolutionary Biology, University of Toronto.



New arthropod ROM 62976 discovered at the Marble Canyon site. Photo by: Jean-Bernard Caron © ROM



Jean-Bernard Caron at the Marble Canyon site, summer 2013. © ROM

**About the ROM**

The Royal Ontario Museum is Canada's largest museum of natural history and world cultures. Opened to the public on March 19, 1914, today, the ROM is internationally renowned as a distinguished research institution. Now in its Centennial year, the Museum houses collections of approximately six million artifacts and specimens. Through its eight Centres of Discovery, the ROM invites its audience to access the ROM's encyclopaedic collections and curatorial expertise while enjoying engaging exhibitions, programming, lectures, school visits, and digital engagement. The ROM is an agency of the Government of Ontario. For 24-hour visitor information in English and French, please call 416.586.8000 or visit the ROM's web site. Tickets are available online at [www.rom.on.ca](http://www.rom.on.ca).

**About Pomona College**

Pomona has grown to be one of the nation's premier liberal arts colleges. Located in Claremont, Calif., on a campus where ivy and palm trees coexist under habitually sunny skies, Pomona offers an environment for intellectual development and personal growth that is second to none. Today, Pomona offers its approximately 1,600 students--evenly divided between men and women--a comprehensive curriculum in the arts, humanities, social sciences and natural sciences.

**About Parks Canada**

Parks Canada works to ensure that Canada's historic and natural heritage is presented and protected for the enjoyment, education and appreciation of all Canadians, today and in the future. Through a network of 44 national parks, 167 national historic sites and four national marine conservation areas, Parks Canada invites Canadians and people from around the world to experience Canada's treasured natural and historic places.

**About the University of Saskatchewan**

Established in 1907, the University of Saskatchewan has devoted its talents and resources to excellence in teaching, learning, discovery and service. Located in Saskatoon, Saskatchewan, the University of Saskatchewan is known for its beautiful campus and historic buildings, a very visible sign that this is an institution with a proud sense of traditions. For information about the university please see also: <http://usask.ca/> or <http://news.usask.ca/>.

**About the University of Toronto**

Established in 1827, the University of Toronto is Canada's largest university, recognized as a global leader in research and teaching. U of T's distinguished faculty, institutional record of groundbreaking scholarship and wealth of innovative academic opportunities continually attract outstanding students and academics from around the world. With over 80,000 students, 22,000 faculty and staff and 525,000 alumni worldwide; research funding of \$1.2 billion; over 700 undergraduate programs, 215 graduate programs, and 63 professional programs; nine fully affiliated hospitals; and library holdings of over 20 million, the University of Toronto's influence is felt in every area of human endeavour.

**About Uppsala University**

Uppsala University was founded in 1477 and is Sweden's first university. It is one of northern Europe's highest ranked academic institutions and consistently ranked top 100 in the world. Uppsala University is a full-scale university with nine faculties: Arts, Educational Sciences, Languages, Law, Medicine, Pharmacy, Science and Technology and Social Sciences.