

Burgess Shale

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[Animated ROM logo appears with sound sting]

[Jean-Bernard Caron standing in his office]

Hello, my name is Jean-Bernard Caron. I am the Associate Curator of Invertebrate Palaeontology at the Royal Ontario Museum *[view of numerous fossils and models on the table]* and my main duty here at the museum is to work on the Burgess Shale collection. So, what is the Burgess Shale? *[Video footage of Burgess Shale location including field research and fossil collections]* Well, the Burgess Shale is a site in British Columbia which is famous for its fossils. These fossils are about half a billion years old and represent the best window of animal life that we have for this time period. *[Close-up of three fossil slabs]* The Cambrian explosion is a very important period for the study of organisms and early animals on earth. *[View of Jean-Bernard Caron standing in front of table]* And the Burgess Shale, because of its exceptional biota, preserved in the rocks, offers a rare glimpse of this life.

[View of several models and fossils; Jean-Bernard pointing to the Sidneyia fossil, and two fossils of large arthropods] So, I'm presenting a few specimens here on this table that come from our collections. This is an animal called *Sidneyia*, and this is a reconstruction of the animal – it's a large arthropod. You have also a number of strange other arthropods, like this large anomalocarid, it's a predator. This is one of its claws. And we have a few reconstructions of this animal. *[Jean-Bernard Caron holding a reconstruction of the large anomalocarid coloured red and white, pointing to its claws, mouth and eyes]* One here was made in Japan, and this animal *[Video appears at bottom left of screen of animated animal]* is particularly terrifying because of its claws and also because of its mouth, which was circular. This animal has a pair of large eyes, *[video ends]* and we recognize a number of related forms *[Jean-Bernard points to a reconstruction of a brown and white Laggania]* such as this animal called *Laggania*, which also has similar features.

Among the most famous arthropods from the Burgess Shale, *[Jean-Bernard holds a small fossil of the Marrella]* *Marrella* is certainly the most famous. And this animal is absolutely wonderfully preserved with all the limbs, and even you can recognize the gut. We have thousands of these specimens in our collections.

[Jean-Bernard points to two small purple models of Wiwaxia; holds a small fossil of the sclerite and demonstrates how the fossil catches the light] Other strange creatures from the Burgess Shale are those with sclerites, this animal is called *Wiwaxia*, and the sclerites are particularly striking when you see them with direct light. This fossil is extremely reflective and shows wonderful details. This animal, *Wiwaxia*, is now related to the mollusc, thanks to our latest studies which were published in *Nature* a few months ago.

[Jean-Bernard holds a fossil slab with two trilobites, and a reconstruction of the small green, yellow and red creature, turning it upside-down to reveal a large number of

legs] We have more common fossils which are common in strata of this time, during, about 500 million years ago, and those animals are called trilobites and this is a very fine example of a trilobite with the appendages preserved. This is a reconstruction of this trilobite and this animal had numerous series of legs preserved.

[Jean-Bernard holds a model of a small, white worm-like creature called a Pikaia; he then holds the actual fossil] Our ancestor and putative ancestor is also found in the Burgess Shale, and it's called *Pikaia*, and this is a model of *Pikaia*. It doesn't look like me at all, but it's still related to us, to the chordates. And this is the actual specimen – very hard to see – but it's a fish-like form with two small tentacles on the head.

And, one of the most common arthropods from the Burgess Shale is called *Canadaspis*. This is a model of *Canadaspis*, and this is the actual animal. Like *Marrella*, *[Jean-Bernard holds a fossil of Canadaspis; points to a large model of the rust coloured creature]* *Canadaspis* is also very common in the Burgess Shale. *[Scan of all models and fossils in front of Jean-Bernard, end with a view of him]* This is a very brief overview of fossils from the Burgess Shale. We have hundreds of species in this biota. All of these animals were living in a marine environment at the time of the Burgess Shale, and the ROM has the largest collection of these animals on the planet. Thank you.

[Video ends with animated ROM logo and sound sting]