

Canada's 10th geological World Heritage Site - Mistaken Point

The ancient rugged coastline of Mistaken Point on Newfoundland's Avalon Peninsula faces the winds and waves of the Atlantic Ocean. It can be a difficult place to work, but nevertheless it has been a mecca for geologists for over several decades now, ever since 1967 when fossils were first found there by Shiva Balak Misra, a graduate geology student from Memorial University of Newfoundland.

Now Mistaken Point's 560-575 million year old fossils are world famous, so much so that the fossil sites have just been granted UNESCO World Heritage Site status, on July 17th, 2016. This makes Mistaken Point Ecological Reserve Canada's 10th geological World Heritage Site, and the second in Newfoundland (the ophiolite of Gros Morne National Park being the other).

The thousands of fossils preserved in the rock strata of Mistaken Point belong to what is known as the Ediacaran biota. The fossils preserve and record the early evolution of complex multicellular life in the oceans of Late Proterozoic time ~560 million years ago, and provide a window into the early colonization of the seafloor by clearly visible organisms. Importantly, these fossils provide insights into the early stages of animal evolution, and allow researchers to test hypotheses regarding the causes and consequences of animal evolution.

As one of the most intriguing puzzles of palaeontology today, the Ediacaran fossils are the subject of intense research around the world, nowhere more so than in the Department of Earth Science in the University of Cambridge. The Cambridge group, including Dr Jennifer Hoyal Cuthill, Dr Charlotte Kenchington, and Dr Emily Mitchell have been investigating aspects of growth, palaeoecology and sedimentology in the Ediacaran Period for several years, and they will soon be re-joined by Dr Alex Liu, a leading authority in this field, who will take up a Lectureship in Palaeobiology in October this year.

Dr Liu was a Research Fellow in Cambridge from 2011-2014, and wrote the Global Comparative Analysis report that formed the foundations of Mistaken Point's successful UNESCO bid while in Cambridge in 2012. He said: "The decision to inscribe Mistaken Point on the World Heritage List is a fantastic achievement for Canada, Newfoundland, and specifically the local communities around the site, but also for Ediacaran palaeontology. The fossils will now become more widely recognised for their evolutionary importance, and will also benefit from improved protective legislation that will enable them to be managed sustainably for future generations".

"Cambridge already has an excellent community of dynamic researchers exploring Ediacaran fossils and environments, but I hope that in the coming years we will be able to develop and expand this group to lead the world in this important field".



From seabed to seabed - the Ediacaran age strata of Newfoundland's Mistaken Point were originally deposited on the seabed some 565 million years ago and are now being worn away by Atlantic waves (photo Dr Emily Mitchell).