



Colorado Scientific Society

Past President's Lecture

Thursday, September 10, 2020; Online event

Rise of the Mammals: Exceptional Continental Record of Biotic Recovery after the Cretaceous–Paleogene Mass Extinction



Tyler Lyson and Ian Miller, Denver Museum of Nature and Science

Abstract: In 2016, a team from the Denver Museum of Nature & Science (DMNS) led by Drs. Tyler Lyson and Ian Miller made an extraordinary discovery of fossils in rocks that date to immediately after the Mesozoic Era, just to the east of Colorado Springs, CO. These fossils reveal in striking detail how the world and life recovered after the catastrophic asteroid impact that wiped out the dinosaurs 66 million years ago. The unprecedented find described in the Nov. 2019 issue of *Science Magazine* includes thousands of exceptionally preserved animal and plant fossils from the critical first million years after the catastrophe and shines a revelatory light on how life emerged from Earth's darkest hour. The fossil-bearing outcrops in the Denver Basin add powerful evidence to the idea that the recovery and evolution of plants and animals were intricately linked. Combining a remarkable fossil plant record with the discovery of the fossil mammals has allowed the team to link millennia-long warming spells to global events, including massive amounts of volcanism on the Indian subcontinent. These events may have shaped the ecosystems half a world away.

Tyler Lyson is a vertebrate paleontologist who studies the extinction of dinosaurs, the rise of mammals, and the evolution of reptiles, particularly turtles. He has conducted fieldwork throughout the American West and has active field sites in North Dakota, Montana, and Colorado. Born in North Dakota, Tyler has been doing paleontology fieldwork since he was in middle school. He received his BA from Swarthmore College in 2006 and his PhD from Yale University in 2012. He completed a postdoc at the Smithsonian Institution before joining the DMNS in 2016 as Associate Curator of Vertebrate Paleontology.



Ian Miller is a paleobotanist whose primary interests are fossil leaves and the ways they inform us of ancient ecosystems and climate. Ian discovered geology and paleontology while scavenging mine tailings for fool's gold and pulling Miocene clams out of road cuts as a youth in Washington State. He attended The Colorado College and did his first paleobotanical work at the DMNS as a hopeful intern. After two years as a field geologist in New Mexico, Ian went to Yale University where he studied paleobotany and tectonics and earned a PhD in 2007. Ian returned to Denver and the Museum in 2006 where he is now Associate Curator of Paleobotany.



More information about the discovery can be found at:

PBS Video: "Rise of the Mammals" www.pbs.org/video/rise-of-the-mammals-zuzg8t/

DMNS Exhibit: "After the Asteroid: Earth's Comeback story"

DMNS website: <https://coloradosprings.dmns.org/>

*Web link to attend is available at <https://coloscisoc.org/special-lectures/>

