



## Alberta Palaeontological Society

### **Canada's Maritime Mastodons: New Ecological Insight from ~75,000 Year-Old Dung**

Main Speaker: Scott Cocker, Permafrost Archives Science Laboratory, University of Alberta, Edmonton.

### **Fossil aroid leaves from the late Paleocene Paskapoo Formation**

Brief Speaker: Georgia L. Hoffman, P. Geol.,

*Location: Webinar On-line Presentation*

*Time: January 21, 2022, 7:30 pm MST*

#### Abstracts:

#### **Canada's Maritime Mastodons: New Ecological Insight from ~75,000 Year-Old Dung:**

Representing two of the last known mastodons to roam the Canadian Maritimes, a 22-year-old adult and 6-year-old juvenile recovered from the Milford Gypsum Quarry provide unique ecological insight into Nova Scotia ~75,000 years ago. In addition to mastodon skeletons, turtles, frogs, insects and dung were also recovered from the site. Analysis of dung associated with the juvenile skeleton provided dietary and environmental reconstructions due to preservation of a diverse assemblage of pollen, non-pollen palynomorphs, plant macrofossils, and macroinvertebrates. The dung contents indicated that the mastodons lived in a spruce-dominated mixed coniferous-deciduous forest interspersed with wetlands. When we think of what dung represents, we may assume that the contents reflect only what was purposefully consumed, which is particularly true for modern day humans. However, in the case of our mastodon, an apparently messy eater, it is the accidental portion of material consumed that provides the most unique insight into Nova Scotia ~75,000 years ago. Freshwater sponges, beetles, and algae were among some of the most unexpected finds. This talk will cover a brief history of the East Milford mastodons, herpetological remains also recovered from the site and finally, the results of our multiproxy analysis of the exceptionally preserved dung.

#### **Fossil aroid leaves from the late Paleocene Paskapoo Formation**

Fossil leaves like those of the extant aroid *Lysichiton* (skunk cabbage or swamp lanterns) have been identified from the Paskapoo Formation (late Paleocene, ca. 60 Ma). The geologic setting and associated fossils indicate that, like *Lysichiton*, which grows in British Columbia today, the plants that produced these leaves lived in a permanently wet area at the margin of a floodplain



lake. This talk will describe the geologic setting, the leaves, and the associated flowers and seeds, as well as the process of identifying them.

### Biographies:

Scott Cocker (he/him) is a PhD student in the Permafrost Archives Science Laboratory at the University of Alberta. Scott received a BSc in Geology and Physical Geography from the University of Edinburgh in 2014, with an undergraduate thesis on late glacial beetle fossils from north England. He then moved to Canada to complete a MSc in Quaternary Palynology at Brock University with Dr. Michael Pisaric, developing new proxies for reconstructing the presence of megafauna from lake sediments in central Yukon Territory. In 2020, Scott moved to the University of Alberta to complete his PhD under the supervision of Dr. Duane Froese. Scott's current research applies new techniques in the field of ancient DNA to understand the factors that drove the collapse of the mammoth steppe ecosystem ~13,000 years ago. This research makes use of the exceptional preservation of organic material from permafrost in Yukon Territory and Alaska. Scott has been awarded several scholarships to support his research at both Brock University and the University of Alberta in addition to recognition of his community service as a co-founder of Scientific QUEERies, a seminar series dedicated to highlighting the work and experiences of LGBTQ2S+ individuals in STEM.

Georgia Hoffman received her Bachelor's degree in geology from the University of Pennsylvania in 1970 and then came to western Canada where she has worked in exploration, primarily for coal and oil sands. She became interested in plant fossils while working in the coal industry. In 1995, she earned an M.Sc. from the University of Alberta for her work on a late Paleocene fossil flora from the Paskapoo Formation.

### Information:

This event is presented jointly by the Alberta Palaeontological Society, the Department of Earth and Environmental Sciences at Mount Royal University, and the Palaeontology Division of the Canadian Society of Petroleum Geologists. For details or to present a talk in the future, please contact CSPG Palaeontology Division Chair Jon Noad at [jonnoad@hotmail.com](mailto:jonnoad@hotmail.com) or APS Coordinator Harold Whittaker at 403-286-0349 or contact [programs1@albertapaleo.org](mailto:programs1@albertapaleo.org). Visit the APS website for confirmation of event times and upcoming speakers: <http://www.albertapaleo.org/>.