

Showcase of Nova Scotia Fossils & Geology – Carboniferous Vertebrate Fossils from Nova Scotia with Dr. Hillary Maddin

Dr. Hillary Maddin, Carleton University. Original seminar recorded on May 21, 2020.
Host: Tim Fedak, Nova Scotia Museum and Co-Host: Luke Allen, Citadel High School

Introduction

- 1:50 Introductions: Tim Fedak, Luke Allen and Dr. Hillary Maddin.

Presentation Introduction – Carboniferous Vertebrates from NS

- 1:50 – 9:17 Vertebrate overview: diversification, origins, major evolutionary events
- 9:17– 11:02 Nova Scotia in the Carboniferous: paleogeography, climate/ environment
- 11:02 – 15:01 Importance: vertebrate preservation, geology, fossil record
- 15:01 – 17:17 Vertebrate family tree, early tetrapods, “Embolomeres”, *Dendrerpeton* – first vertebrate fossil named in Canada
- 17:17 – 23:44 Origin of Amniotes, non-amniote vs. amniote egg, first amniote- *Hylonomus lyelli*, synapsids vs. reptiles, earliest synapsids - *Protoclepsydraps* and *Asaphestera*
- 23:44 – 25:22 ‘Microsaurs’ - controversial group
- 25:22 – 28:02 New research, new Embolomere
- 28:02 – 30:13 3D *Dendrerpeton*, juvenile *Dendrerpeton* and a new species of early tetrapod
- 30:13 – 39:49 New stump discovery, *Dendromaia* – oldest evidence of parental care, largest Carboniferous Synapsid, possibly new herbivore, new large ‘microsaur’- unique dentition
- 39:49 – 41:23 Summary: Importance of Nova Scotia in understanding the evolution of early land animals, new things being learned

Discussion and Questions

- 41:23 – 43:25 Nova Scotia fossils are inconspicuous and need a trained eye to find
- 43:25 – 44:19 Value of museum collections, historical significance and implications for future research
- 44:19 – 45:46 How does synapsid diversification compare to that of reptiles during the Carboniferous? “The picture is very muddy at this exact moment”
- 45:46 – 47:14 Diverse Joggins amniote fauna – How far back do you think amniote origins actually went?
- 47:14 – 41:20 How did you get interested in palaeontology? “I don’t know because my memory does not go back that far”
- 50:01 Joggins Fossil Institute, fossil protection in Nova Scotia, goodbyes