2023

The Fossils of Binghamton University

Albert Tan
Binghamton University--SUNY

The Fossils of Binghamton University

Albert Tan

Faculty Advisors: Dylan Horvath and Adriane Lam

BINGHAMTON UNIVERSITY
STATE UNIVERSITY OF NEW YORK

History

Approximately 419 to 358 million years ago, where you are standing right now was underwater. Coined as “The Age of Fishes” due to the abundance of sea creatures that swam throughout the ancient seas during that time, The Devonian Period was a time where 85% of the globe was covered with ocean water. North America, Greenland and Europe were united as a minor supercontinent during this time called Laurentia/Laurussia. Most of the North American continent including New York State would have been covered by a warm shallow sea where organisms such as Crinoids, Brachiopods, Tentaculites and many others would have gone about their daily lives.

Red Star = Binghamton / New York State Area

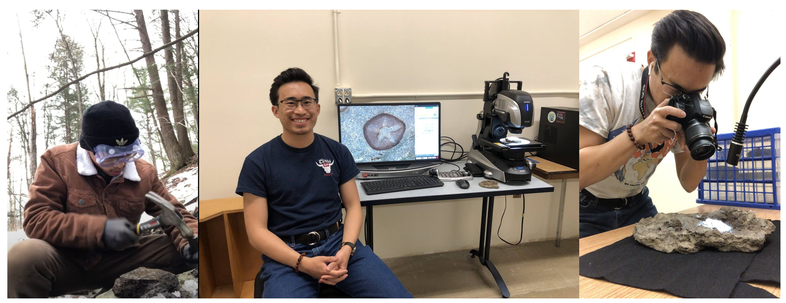
Methods

Using nothing more than a geologist hammer and chisel to collect these fossils, it is easy for anyone to get started in fossil hunting. Using tools you already have such as a hammer, chisel and your hands - you too can get started in the fossil hunting hobby. Not only is it fulfilling but interesting as you learn about our Earth’s geological past and the species that inhabited it during those times.

The areas of collection are accessible to the campus population: the Nature Preserve, Fuller Hollow Creek, and Stair Park.

Upon collection, the specimens are cleaned using water and hand soap in combination with a toothbrush to scrub the dirt off and enhance the specimen’s visibility.

Photographs were taken using a Canon camera in conjunction with a photo box and for smaller specimens, I used the VHX-E20 microscope to magnify + photograph the smaller fossils.



Crinoids

***Eutaxocrinus?* spp.**

Brachiopods

***Cyrtospirifer* sp.**

Cyrtospirifer chemungensis

Mucrospirifer sp.

***Orthospirifer* sp.**

Mucrospirifer mucronatus

Left*: Cupulorostrum* sp.
Right: Unknown Brachiopod

Tentaculites

***Tentaculites* spp.**

Miscellaneous

Burrow Trace Fossil

Woody Debris Fossil

How do Fossils Form?

Factors conducive to fossilization:

I. Hard parts
II. Multiple parts
III. Rapid burial

Upon death, animals and plants start to decay very quickly so in order for a fossil to form, sediment must cover the organism quickly to preserve it. Soft parts and whole organisms rarely preserve though extremely rapid burial in combination with the right conditions can achieve that.

Upon deposition, empty spaces of the organism can be filled with minerals from groundwater and harden, creating a **cast fossil**. Other times, the sediment surrounding the organism hardens into rock and the original remains dissolve leaving behind a **mold/imprint fossil**.

From here, you can go more in depth with other fossil types:

Identifying the species of fossils can sometimes be challenging as cast and mold fossils are altered throughout the preservation process. This altercation can cause changes in distinguishable characteristics which make it difficult to designate a species name to the specimen.

How Can I Get Started in Fossil Hunting?

The internet contains a treasure-trove of information about fossil hunting tips and areas to fossil hunt. Knowing the geological past of a site is crucial to differentiating areas that have fossils and those that don’t. Areas of erosion/transport will be your best bet for finding some fossils. The erosion of the outcrop can more likely expose fossils for you to find and the likelihood of finding fossils increases near streams of water like in Fuller Hollow Creek, Stair Park and the Nature Preserve.

Knowing what fossils are present in an area can assist you in knowing what to be looking out for when you are out in the field. Fossil forums and Facebook groups are great places to ask questions about fossils or if you are unsure of a fossil you have found.

Local paleontological clubs are great ways to network with fellow fossil enthusiasts and these clubs can sometimes go on cool fossil hunting trips or host local gem/mineral/fossil shows where vendors sell crystals and fossils.

The Binghamton Geology Club and the geology faculty are priceless resources on campus for fossil information and anything related to geology.

Get out there, get a little muddy and find yourself a piece of history!