

**Paleoecology Laboratory #3**  
Ordovician Solitary Rugose Coral Paleoecology  
(and Lab Report Assignment)  
September 3, 2019

**Goals:**

1. Learn how to make valuable qualitative paleoecological observations of fossils.
2. Deduce the communities and environments associated with a Late Ordovician rugose coral.
3. Meet bryozoans, borings and other *sclerobionts* (organisms living on or in hard substrates).
4. Have a simple introduction to paleontological photography (with your own phone!).
5. Begin to assemble and write your first lab report for this course.

**Exercise:**

*Materials needed --*      A large collection of solitary rugose coral specimens (Upper Ordovician, Indiana)  
Your cell phone camera  
Photographic scales (in the Imaging Lab)  
Your laptop computer or tablet

*Procedure --*

1. Choose one rugose coral from our collection and photograph it (with a scale) using your cell phone camera (or a borrowed one) in our Imaging Lab. Note that the coral is oriented with the calyx (wide end) up and dominant light from the upper left. This is the standard orientation. We will demonstrate in lab. Your image should look something like this --



2. Choose a number of specimens from our large collection of rugosans and examine their surfaces for encrusters and borings (*sclerobionts*). You will meet **bryozoans**, **heliolitid corals** (colonial), and the trace fossil *Trypanites* (a cylindrical boring). We will discuss these in our learning section.

*Questions about these rugose corals --*

1. Did the encrusters and borers infest living or dead corals? Or both living and dead? What is your evidence?
2. What was the likely *living position* (or *orientation*) of the rugose corals? What is your evidence?
3. What can you deduce about the taphonomy of the rugose corals?
4. What is the binomen (genus and species) of this particular rugose coral? (The web is your friend.)

You're now ready to write your first lab report. It is due by **noon on September 10** in your course Dropbox folder as a Word document (not pdf). The exact format is up to you, but you must have these items included:

- The identity of the rugose coral (genus and species).
- Your photograph of the coral.
- The location and stratigraphy (Whitewater Formation; Richmond, Indiana; C/W-148; Upper Ordovician).
- Your measurement methods.
- Your measurement results (the three graphs, with descriptive captions).
- Your interpretation of the ontogeny (growth and development) of this rugose coral species.
- What organisms lived on or in the coral skeleton? (General identification – not to the species!)
- Did the sclerobionts inhabit the skeletons before and/or after death? What is your evidence?
- What was the likely *living position* (or *orientation*) of these rugose corals? What is your evidence?
- What can you deduce about the taphonomy of these rugose corals?



A lot of rugose corals! (Whitewater Formation; Richmond, Indiana; C/W-148; Upper Ordovician).