



Apr 6th, 6:30 PM - 8:00 PM

Shell Mineralogy as a Potential Indicator of Developmental Stages in Several Marine Gastropod Species

Todd L. Mathus
Illinois Wesleyan University

Gail Lima, Faculty Advisor
Illinois Wesleyan University

Follow this and additional works at: <https://digitalcommons.iwu.edu/jwprc>

Mathus, Todd L. and Lima, Faculty Advisor, Gail, "Shell Mineralogy as a Potential Indicator of Developmental Stages in Several Marine Gastropod Species" (1990). *John Wesley Powell Student Research Conference*. 12.

<https://digitalcommons.iwu.edu/jwprc/1990/posters/12>

This Event is protected by copyright and/or related rights. It has been brought to you by Digital Commons @ IWU with permission from the rights-holder(s). You are free to use this material in any way that is permitted by the copyright and related rights legislation that applies to your use. For other uses you need to obtain permission from the rights-holder(s) directly, unless additional rights are indicated by a Creative Commons license in the record and/ or on the work itself. This material has been accepted for inclusion by faculty at Illinois Wesleyan University. For more information, please contact digitalcommons@iwu.edu.

©Copyright is owned by the author of this document.

SHELL MINERALOGY AS A POTENTIAL INDICATOR OF DEVELOPMENTAL STAGES IN SEVERAL MARINE GASTROPOD SPECIES

Todd L. Matus, Dept. of Biology, IWU, Gail Lima*

Gastropod shell mineralogy of preserved specimens of planktotrophic species, *Crepidula plana* and *Crepidula fornicata*, and a nonplanktotrophic species, *Busycon canaliculatum*, were analyzed by differential staining with Feigl's stain. Feigl's stain provides evidence for distinct differences between aragonite and calcite, two polymorphs of CaCO_3 , that comprise the framework for shell deposition. Previous studies have shown that larval bivalve shells are primarily composed of aragonite, whereas juvenile and adult shells are calcitic. Therefore, a change from aragonite to calcite would indicate metamorphosis from the veliger to the juvenile. Preliminary results indicate similar shell mineralogy patterns in gastropods, thus supporting the previous bivalve studies. Additionally, the results show that the amount of time necessary for Feigl's staining varies according to the shell composition; more specifically, completely aragonitic shells stain at a much faster rate than do shells with a combination of calcite and aragonite. I anticipate subsequent work using scanning electron microscopy and X-ray diffraction analysis will verify these preliminary results.