Apr 12th, 9:00 AM - 10:00 AM

Variation in Rates of Asexual Reproduction By *Convolutriloba Retrogemma*

Sara Rahim
Illinois Wesleyan University

William Jaeckle, Faculty Advisor
Illinois Wesleyan University

Poster Presentation P33

VARIATION IN RATES OF ASEXUAL REPRODUCTION BY *CONVOLUTRILOBA RETROGEMMA*

Sara Rahim and William Jaeckle*
Department of Biology, Illinois Wesleyan University

Convolutriloba retrogemma, an acoel turbellarian (phylum Platyhelminthes), engages in an obligate symbiotic relationship with unicellular algae. This species reproduces asexually by budding from the posterior end of the parent individual. The rate of reproduction of 24 newly budded flatworms of various sizes was studied over a period of six weeks. Flatworms were individually placed into 6 mL of 0.2 μm filtered seawater of 33.2 ppt salinity in each of the 6 wells of a multiwell plate. All plates were placed into an incubator set at a constant temperature of 25° C with invariable light conditions (12D:12L light cycle). Reproduction reached a peak during the third and fourth weeks when each flatworm produced an average of four clones. The average overall rate of reproduction was one clone every four to five days. However, observations of the budding process revealed a positive relationship between the size of the parent to the size of the clone and the number of clones produced, which may explain the substantial amount of variability in the rate of reproduction among individual flatworms. The results of this study suggest that the nature of the symbiotic relationship between the algae and the flatworm is mutualistic. Since budding proceeded without access to prey, the environmental conditions were adequate to promote photosynthesis by the algal symbionts resulting in sufficient energy for the flatworm to reproduce. The flatworm, in return, provides shelter and potentially nutrients to the algae.