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Energy Consumption of Embryonic Stage in the Pond Snail *Physa* SP.

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Poster Presentation P19

**ENERGY CONSUMPTION OF EMBRYONIC STAGE IN THE
POND SNAIL *Physa* SP.**

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The pond snail *Physa* sp. lays its eggs in egg masses containing a variable number of egg capsules, each housing an individual embryo. The egg capsules have an average length of ca. 800 μ m. Development from a single cell to a juvenile hatchling is complete in 4-5 days at 25° C. The energy consumption of individual *Physa* sp. embryos was estimated by measuring the rate of oxygen consumption. Respiration was measured by placing an individual in a water-jacketed micro-respiration chamber; the floor of the chamber was a micro-cathode oxygen electrode. Respiration of each embryo was measured as the decrease in oxygen within the chamber. All measurements were made at 20° C. The rates of O₂ consumption by embryos at 2 different stages were measured. Rates of O₂ consumption were converted into rates of energy consumption using the appropriate oxyenthalpic equivalent. The rates of energy consumption were found to range from 300 to 1200 μ J per embryo per hour. Being able to calculate the rate at which energy is consumed in each stage of development by the same individual will have several significances, it will (1) allow for the comparison between individual stages, (2) allow for the total cost development to be estimated, and (3) provide further understanding in the area of metabolic energy cost in invertebrate development.