



Species and epilimnion/hypolimnion-related differences in size at larval settlement and metamorphosis in *Dreissena* (Bivalvia)

Martel, André L., Brad S. Baldwin, Ronald M. Dermott, Richard A. Lutz

Limnol. Oceanogr., 46(3), 2001, 707-713 | DOI: 10.4319/lo.2001.46.3.0707

ABSTRACT: Recently settled postlarval quagga mussels (*Dreissena bugensis*) and zebra mussels (*D. polymorpha*) were examined using optic microscopy to determine planktonic shell growth and size at settlement and metamorphosis from two habitats in Eastern Lake Erie: nearshore epilimnion and offshore hypolimnion. Postlarvae (shell length ~400-2000 μm) were collected from various substrates between 1992 and 1995. Planktonic shell growth and size at settlement and metamorphosis were determined by measuring height of the prodissoconch I (PI) and prodissoconch II (PII) on right valves. Mean PI height was 79.07 (SD = 4.64) and 79.62 μm (SD = 4.28) for the quagga and zebra mussel, respectively, and did not differ between species or across habitats. There was, however, a distinct between-species difference in size at settlement and metamorphosis (PII size), with larvae of the quagga mussel settling at significantly larger sizes than those of the zebra mussel (nearshore/epilimnion data: quagga PII means, 256-284 μm ; zebra PII means, 236-249 μm). In addition, quagga mussel larvae settled at a greater size in the offshore hypolimnion habitat (PII mean = 313.64 μm , SD = 24.69, n = 320) compared to nearshore epilimnion habitat (mean = 261.89 μm , SD = 19.41, n = 207). The additional 28% of larval shell (PII) secreted by offshore hypolimnion quagga mussels may be linked to several factors, including a prolonged planktonic period. This study is the first to document the relationship between offshore distance and size at settlement in a bivalve.

Article Links

[Download Full-text PDF](#)

[Return to Table of Contents](#)

Please Note

Articles in L&O appear in PDF format. Open access articles may be freely downloaded by anyone. Other articles are available for download to subscribers only, or may be purchased for \$10 per article. All L&O articles are moved into Open Access after three years.

