Response to temperature differs among clones of pitcher plant rotifers

Evolution plays a key role in directly altering ecology in natural communities. As the environment changes rapidly, populations that are unable to acclimatize or move must evolve to avoid extinction. Genetic variation in responses to environmental change provide the fuel for natural selection to act. Here, I report on a high diversity in temperature response among clones of the Bdelloid rotifer *Habrotrocha rosa*, indicating the potential for rapid evolution in natural communities. *Habrotrocha rosa* live in the water filled leaves of the carnivorous purple pitcher plant (*Sarracenia purpurea*) and compete for resources primarily with other bacterivores, including ciliates in the genus *Tetrahymena*. To reproduce, *H. rosa* lay eggs that develop without fertilization via apomixis, a form of obligate parthenogenesis. Because this process lacks recombination, all offspring are full clones of their mother. The trait diversity of natural populations of *H. rosa* is unknown. In a temperature response experiment, clones of *H. rosa* isolated from field samples of leaf water were grown in microcosms at 25C and 30C for 42 days. Population growth rate and dry mass, both components of fitness and key traits in temperature response, were estimated for each clone. Rotifer clones had different growth rates in response to temperature, supporting the potential for rapid evolution in natural populations. A separate, ongoing evolution experiment will aim to investigate evolution-mediated indirect effects of temperature on competition between *H. rosa* and a natural competitor, genus *Tetrahymena.*