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Examining Reproductive Strategies in an Asexually Reproducing Rotifer (Class Bdelloidea)

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Poster Presentation 45

**EXAMINING REPRODUCTIVE STRATEGIES IN AN ASEXUALLY
REPRODUCING ROTIFER (CLASS BDELLOIDEA)**

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Nearly all multicelled organisms exhibit sexual reproduction. Rotifers of the class Bdelloidea, however, seem to be a notable exception to this pattern. No male bdelloid individuals have ever been observed and females apparently reproduce entirely through parthenogenesis. In this study, *Philodina* sp. was examined with the intent of addressing the following: 1) are bdelloids truly completely asexual? 2) if so, does their reproductive cycle differ significantly from sexually reproducing rotifers (Class Monogononta)? 3) do any such differences suggest an adaptation to an asexual existence? To answer these questions, sibling individuals (clones) were raised with equal food amounts at 20°C and 30°C. Newly hatched offspring produced by these individuals were counted and removed every 12 hours until the parent died. Individuals exhibiting unusual characteristics were isolated as possible males and raised for closer examination. No males were positively identified. However, temperature greatly effected reproduction rates. At 30°C, individuals had a significantly greater rate of reproduction ($Q_{10} = 2.34$) and produced more offspring than those at 20°C. Furthermore, age at the start of reproduction was significantly earlier at 30°C than at 20°C. Analysis of rotifer lifespan, reproductive period, and reproduction rate indicate that there is no correlation between lifespan and rate of reproduction, and there is also no significant difference between the duration of the reproductive period in *Philodina* sp. in the different temperatures. These results are in contrast with previously reported results by Snell and King (1977) for *Asplanchna brightwelli* (Class Monogononta) which indicate an inverse relationship between lifespan and reproduction.