



THE GESTATIONAL CYCLE OF THE RED TAIL GOODEID, *Xenotoca eiseni*

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ABSTRACT

The gestational cycle of the Red Tail Goodeid, *Xenotoca eiseni* was studied in aquaria. The age at first birth ranged between 97 and 191 days, averaging 142 days. The mean brood interval, within a summer temperature range of 26° C. to 28° C., was 43 days, but ranged between 33-49 days. During the winter months, when the temperature range was lower (between 20° C. to 24° C.), the mean brood interval was considerably longer. It averaged 60 days and ranged between 45 through 99 days. To study fecundity, we introduce the term “birth fecundity,” a derivation from “batch fecundity” used to estimate the number of eggs produced by externally fertilizing fishes per spawn. Birth fecundity is defined as the number of developing embryos or the number of babies born to females. It is related to standard length (SL) size stages that are erected for a given species. Nine SL size ranges were established for *Xenotoca eiseni* (<29mm, 30-33 mm, 34-37 mm, 38-41 mm, 42-45 mm, 46-49 mm, 50-53 mm, 54-57 mm and >58 mm). The data set consists of 100 birth fecundity observations for those size ranges in bold type. *Xenotoca* <29 mm were considered to be giving birth for the first time, i. e., size at reproduction, and birth fecundity ranged between 5 and 7 babies. The largest females, >58 mm SL, had birth fecundities between 26 to 68 babies. The record birth fecundity was to a 56 mm SL female who had 98 babies! New born *Xenotoca eiseni* babies averaged 10-13 mm SL and weighed between 0.019- 0.025 gms. To study the development of oocytes, dissections revealed that at birth there were no observed vitellogenic (yolked) oocytes present in the ovary. These are clearly distinguished under a dissecting microscope as having clear, fluid, yellow yolk, typical of all Atherinomorpha: yolk is fluid from the beginning of vitellogenesis. One early ovulation was observed on day 4 post-birth. However, females had oocytes that were judged to be late secondary growth or full-grown by day 5 post-birth and ovulation occurred in all females examined on day 6 post-birth.