1003-92-1157   **J. M. Cushing*** (`cushing@math.arizona.edu`), Department of Mathematics, 617 N Santa Rita, University of Arizona, Tucson, AZ 85721, and **Sheree LeVarge**, Program in Applied Mathematics, 617 N Santa Rita, University of Arizona, Tucson, AZ 85721. *Competition Models for Juvenile/Adult Structured Species.* Preliminary report.

We study equilibrium and periodic cycle coexistence attractors for models of competition between juvenile/adult structured species. These investigations are motivated by data from Thomas Park's classic competition experiments utilizing two species of flour beetle populations. Simulations of a high dimensional model for Park's experiments predict the possibility of cyclic coexistence under unexpected circumstances. We investigate the mechanisms responsible for this possibility by considering some lower dimensional "toy" models. (Received October 04, 2004)