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Amit Bose* (abose@math.carleton.ca), School of Mathematics and Statistics, Carleton University, 1125 Colonel By Drive, Ottawa, Ontario K1S 5B6, Canada, and **Ingemar Kaj** (ikaj@math.uu.se), Department of Mathematics, Uppsala University, Box 480, S-751 06 Uppsala, Sweden. *A Scaling Limit Process for the Age-dependent structure in a Markov Population.*

We introduce a model for a reproducing Markov population, set within the terms of a fairly general Markovian framework and with arbitrary offspring mechanism, to study the time evolution of the joint empirical distribution of age and reproduction numbers. The objective is to apply a diffusion approximation scaling as the population size grows so that the limit process is a non-degenerate measure-valued Markov process. In general, the limit process is not a superprocess. However, it may be characterized by its log-Laplace function which the unique solution of a nonlinear integral equation. Under additional assumptions, the limit process is recognized as a superprocess and its martingale characterization is obtained. (Received October 01, 2000)