The evolution of slow dispersal rates: a reaction diffusion model. (English summary)


Summary: “We consider $n$ phenotypes of a species in a continuous but heterogeneous environment. It is assumed that the phenotypes differ only in their diffusion rates. With haploid genetics and a small rate of mutation, it is shown that the only nontrivial equilibrium is a population dominated by the slowest diffusing phenotype. We also prove that if there are only two possible phenotypes, then this equilibrium is a global attractor, and we conjecture that this is true in general. Numerical simulations supporting this conjecture and suggesting that this is a robust phenomenon are also discussed.”

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