1086-35-2030        **Thomas Nagylaki** and **Linlin Su\*** (`lsu@wpi.edu`), Department of Mathematical Sciences, Worcester Polytechnic Institute, 100 Institute Road, Worcester, MA 01609, and **Kai Zeng**. *Clines With Partial Panmixia: Environmental Pockets And Complete Dominance.* Preliminary report.

In geographically structured populations, global panmixia (i.e., random mating) can be regarded as the limiting case of long-distance migration. The effect of incorporating partial panmixia into diallelic single-locus clines maintained by migration and selection is investigated in two cases: (i) an isotropic environmental pocket in $n$ dimensions and (ii) complete dominance in an unbounded unidimensional habitat. Migration and selection are both weak. The former is homogeneous and isotropic; the latter is directional. In case (i), if the scaled panmictic rate $\beta \geq 1$, then the allele favored in the pocket is ultimately lost. For $\beta < 1$, a cline is maintained if and only if the radius $a$ of the pocket exceeds a critical value $a_n$. In case (ii), a cline always exists if $\alpha = 1$, where $\alpha$ denotes the ratio of the selection coefficient favoring the dominant allele to that favoring the recessive. For a step-environment and $\alpha \neq 1$, a unique cline exists if and only if $\beta$ is less than a critical value. If $\alpha > 1$ and $\beta > 0$, a smaller, unique unstable equilibrium also exists whenever the cline does. If $\beta > 0$, some genetic variation is maintained even infinitely far from the center of the cline. (Received September 24, 2012)