



**FIGURE 16.9.** (A) If a population is so strongly subdivided that demes are fixed for different alleles (i.e.,  $F_{ST} = 1$ ), then as long as these demes survive, there can be no further change: Genetic variation is preserved indefinitely. (B) If demes sometimes go extinct (red  $\times$ s) and are recolonized from a surviving deme, then allele frequencies change. Demes are analogous to individuals that die and reproduce, and so the effective size of the whole metapopulation is close to the number of demes, rather than the number of individuals.