



FIGURE 23.26. Separate sexes can evolve from an initially hermaphroditic population through the fixation of two mutations. First, a recessive allele M^s arises that causes male sterility when homozygous ($M^s M^s$), hence producing females. The other genotypes ($M^s M^F$, $M^F M^F$) remain as hermaphrodites, and so a polymorphic gynodioecious population is formed. Next, a dominant female sterility mutation, F^s , arises at a linked locus. Now, individuals homozygous for $M^s F^f$ (top right) are female, and those heterozygous for $M^s F^f / M^F F^s$ are male. There is strong selection for tighter linkage between the two loci, because recombinant genotypes such as $M^s F^s / M^s F^f$ are completely sterile.

23.36, modified from Chadwick D. et al. *The Genetics and Biology of Sex Determination*, p. 211, © 2002. J. Wiley