



FIGURE 20.31. Mating preferences generate linkage disequilibrium between genes for male trait and female preference. This diagram shows a simple life cycle in which haploid adults mate to produce diploid zygotes, which then go through meiosis to give the next generation of haploid offspring. Some males carry an allele T, which causes an attractive trait (bright plumage, say). Some females carry an allele P, which causes a preference for this trait. The diagram shows the alleles P and T at different genetic loci along the chromosome. Because of the mating preferences, P and T tend to find themselves within the same diploid zygote. If there is crossing over, then P and T will be brought together on the same chromosome. In the next generation, therefore, the combination PT will be in excess, or in other words, in linkage disequilibrium. This linkage disequilibrium allows selection on the trait T to cause indirect selection on the preference P.