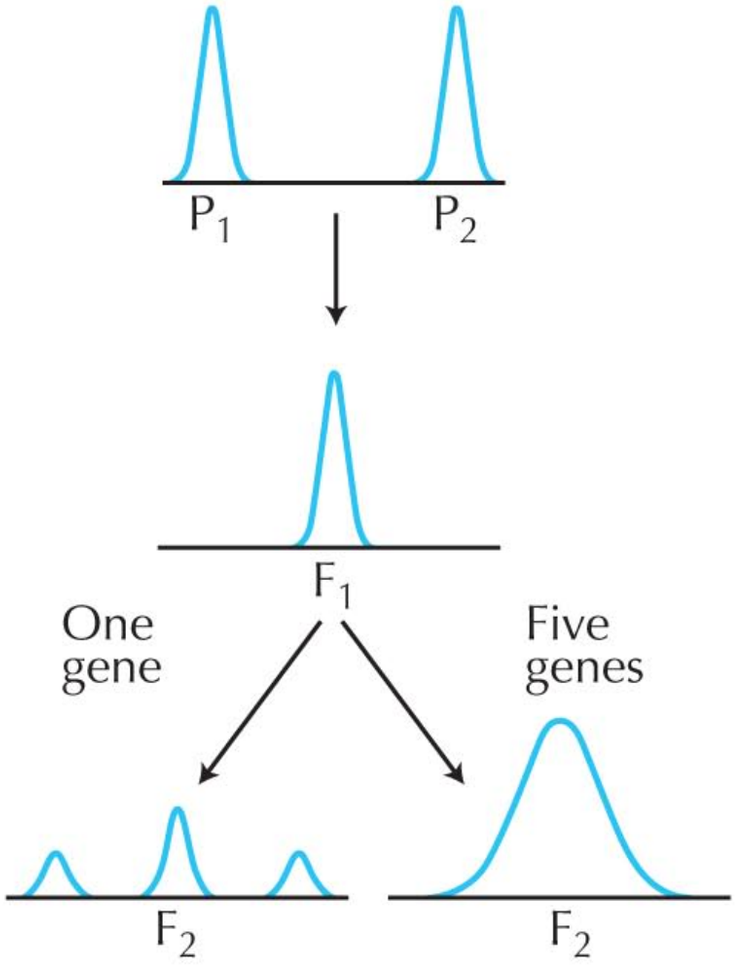

FIGURE 14.21. Estimating the number of genes from the variance of an F_2 cross. In the F_1 generation, all individuals have half their genes from one parent and half from the other. In the F_2, the distribution of the trait depends on the number of genes. If there is one gene, with intermediate heterozygote, then the distribution is broad (*lower left*). If there are five genes, the distribution is narrower and the parental genotypes only arise rarely (frequency $2^{-10} = 1/1024$; *lower right*). The number of genes involved is inversely proportional to the genetic variance in the F_2 relative to the difference between the parental lines.