MUTATION CONTROLS

If you want to ask what happens to a mutation once it occurs in a large population, you don't need to enable the *Mutation* checkbox in the *Experiment Parameters* panel. You can set up the initial population with the *Enter Genotype Numbers*. E.g., 1000 in the *Population Size* box and in the *Enter Genotype* boxes enter values of *AA = 0*, *AB = 1* and *BB = 9999*.

To experiment with mutation itself, you must click the *Mutation* checkbox and set the initial allele frequency of one allele to 0.0. Next, enter mutation rates for each allele. Realistic values are extremely small, on the order of 0.000001–0.0000000001, i.e., 1/1,000,000 = $1x10^{-6}$ to 1/1,000,000,000 = $1x10^{-9}$.

Such realistic values need to run for large numbers of generations. If you are studying mutation alone, then the ratios of the mutation rates are what is most important, so you may first try unrealistically large mutation rates. E.g., try values of *A to B* = 0.01 and *A to B* = 0.001 to get a quick idea of what to expect. Then try rates of 0.00000001 and 0.000000001 with very large numbers of generations.