Instructions for the Fisher-Wright program

Two choices are available for the Fisher-Wright program

(1) Haploid versus Diploid

In the simplest version of the Fisher-Wright model, each gene is chosen independently, regardless of whether the genes are in the same individual or in different individuals. So there is little difference between the haploid and diploid models. If the diploid model is chosen, the number of homozygotes and heterozygotes can be displayed. However the haploid model is chosen by default since it allows more flexibility in the display (see Sorting below)

(2) Two alleles versus Multiple alleles

The default choice (the program starts this way) is for two alleles. This allows each genotype to be displayed. The multiple allele version of the program essentially corresponds to the model of an infinite number of alleles. Each gene and its descandants are shown in a different colour, except that there is a limited number of colours, and where the population size exceeds this value, the colours are repeated.

Running the simulation

To start the simulation, click the **Generate** button, or press the **Enter** key. The initial population will be displayed. After this, each time you click the button, a new generation will be displayed. There is a limit of 10 generations (all that can be fitted on the screen).

Showing the descent

By default, the simulation shows the descent of each gene as it is chosen. If this display slows down the simulation too much, you can turn this off from the **Don't show descent** button at the bottom of the screen.

Showing lines of descent

You can click on any individual gene to see its ancestry. You can also display, or hide, all lines at once from the menu items. A further option exists to show the ancerstry of just the largest family. The lines can be single or double thickness.

Sorting

When the numbers of generations and individuals are large, the display of lines will resemble a uninterpretable spaghetti. It becomes convenient to sort the genes into an order which makes the lines of descent easier to follow. Initially, the genes are displayed in the order in which they are chosen. Sorting puts them into order depending on their parental origin.

Each individual generation can be sorted using the arrow symbol shown at the left. The symbols are hidden after genes in any generation, and all of their ancestral genes, have been sorted. As a simpler alternative, all generations may be sorted in order from the **Sort** menu.