

III. A Closer Look at Natural Selection

A. Natural selection, adaptation, and evolution

B. Patterns of natural selection

1. Directional selection

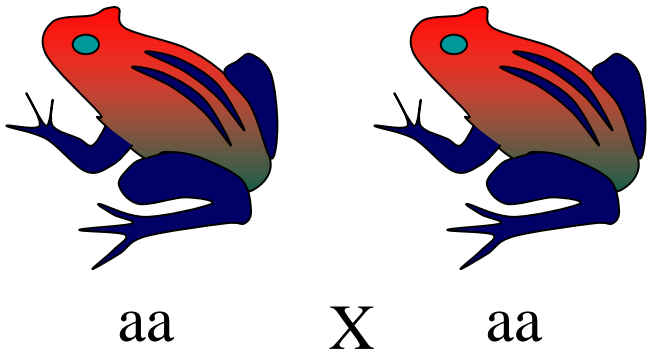
2. Stabilizing selection

3. Diversifying selection

C. Effects of selection on the distribution of phenotypes

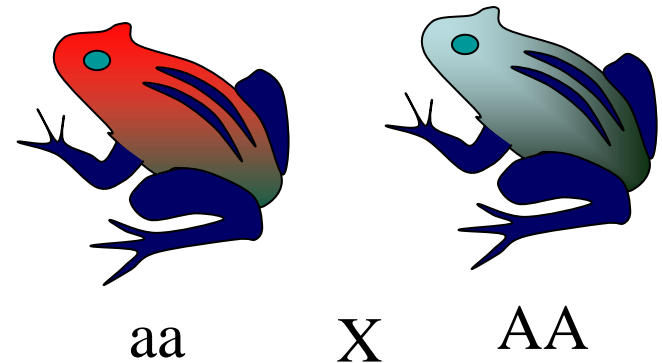
Non-random mating affects the frequency of genotypes in a population, but does not change allele frequency

Positive assortative
mating



All offspring
homozygous

Negative assortative
mating



All offspring
heterozygous

Biston betularia - the peppered moth



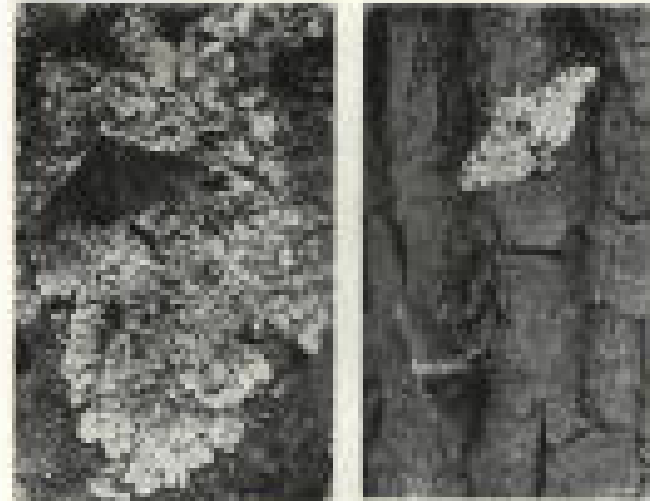
Dark morph on sooty tree



Grey moth on lichen



Each morph on the “wrong” tree



Industrial Melanism in the peppered moth

Released in rural woodland

	grey	melanic
# released	496	473
# recaptured	62	30
% recaptured	12.5	6.3

Released in industrial region

	grey	melanic
# released	137	447
# recaptured	18	123
% recaptured	13.1	27.5

Fig. 23. 12

