Gregor Mendel

Important Facts

Monk
Founder of Genetics
“Father of Genetics”
Mendelian Genetics

But first, let’s introduce a few terms

– Mendelian factors are now called **genes**
– **Alleles** are different versions of the same gene
– An individual with two identical alleles is termed **homozygous**
– An individual with two different alleles, is termed **heterozygous**
– **Genotype** refers to the specific allelic composition of an individual
– **Phenotype** refers to the outward appearance of an individual
Monohybrid Crosses and Mendel’s Principle of Segregation

- Terminology used in breeding experiments:
  - Parental generation is the P generation.
  - Progeny of P generation is the first filial generation, designated F1.
  - When F1 interbreed or are “selfed”, the second filial generation, F2, is produced.
  - F2 is always F1 x F1
  - Subsequent interbreeding produces F3, F4, and F5 generations.
Monohybrid Crosses and Mendel’s Principle of Segregation

- When Mendel had conducted experiments for the seven different traits in garden peas (Table 2-1), he made these conclusions:
  1. Results of reciprocal crosses are always the same.
  2. The F1 resembled only one of the parents.
  3. The trait missing in the F1 reappeared in about 1/4 of the F2 individuals.
Question

If Mendel had a homozygous tall plant what would the genotype look like from this individual?

1) tall
2) short
3) TT
4) Tt