

HEREDITY AND EVOLUTION

- **Heredity** – Transfer of characters from one generation to another.
- **Variations** – Some changes due to environment or habitat changes.

Gregor Johann Mendel (father of genetics) conducted the following crosses :

Monohybrid cross: Cross-between 2 pea plants with one pair of contrasting characters Tall/short.

Parents

Tall plant TT X Short plant tt
↓

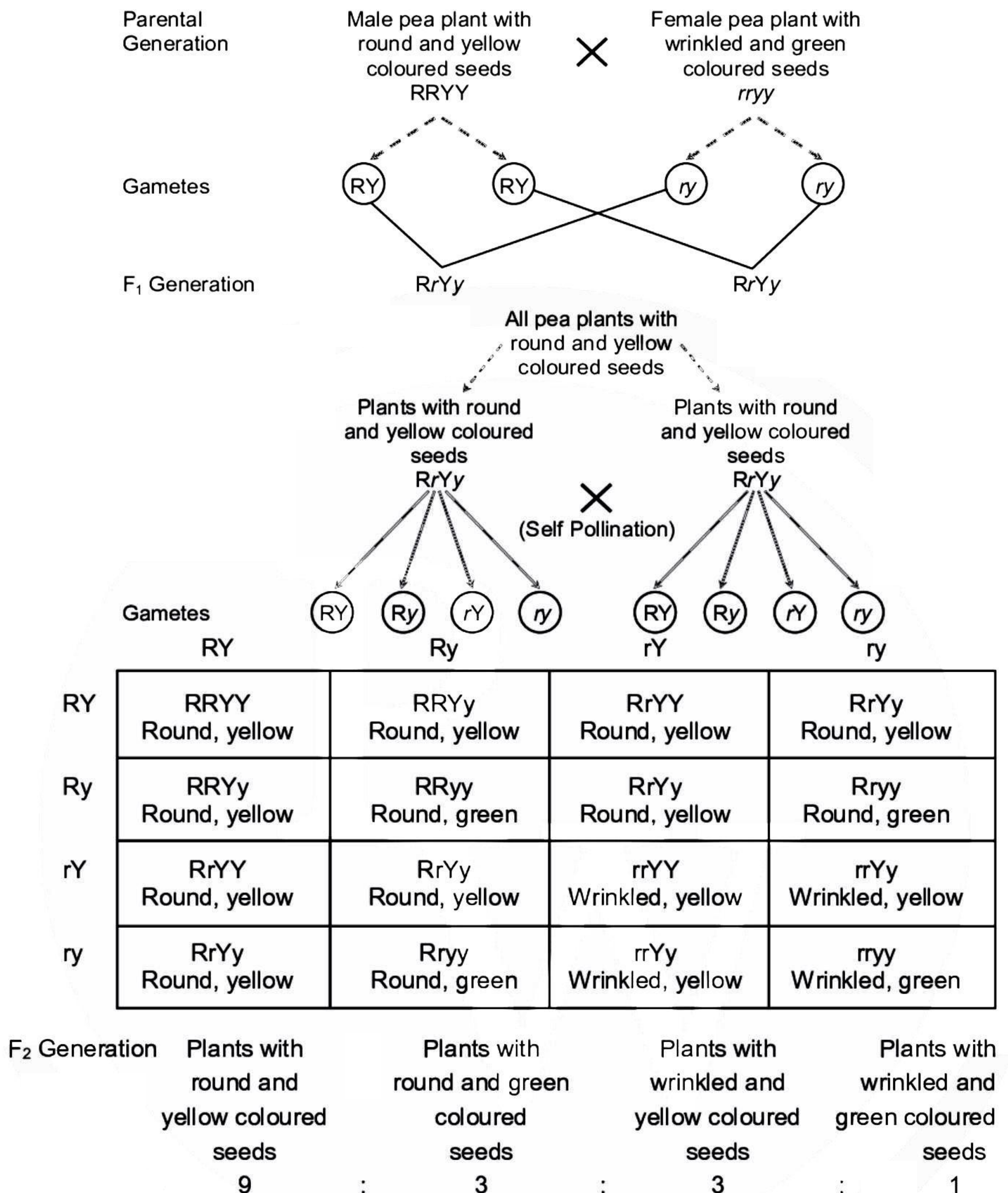
F₁ generation

All Tall plants
 Tt
Self pollination
X

F₂ generation

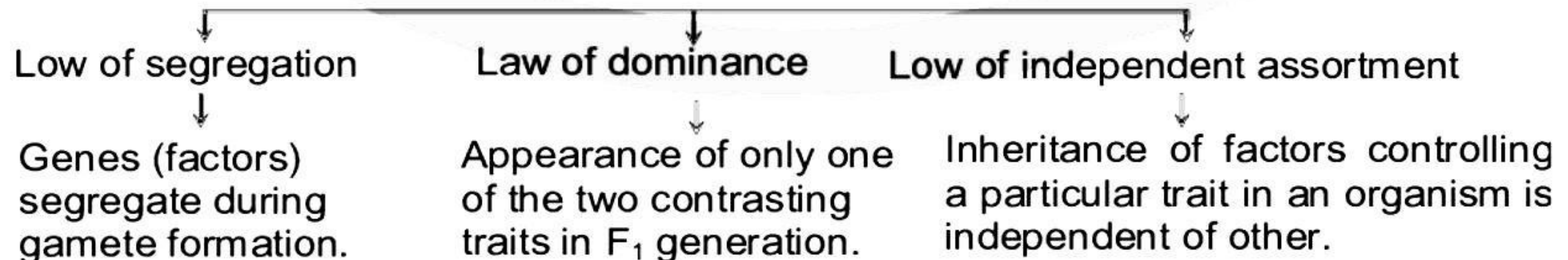
Tt Tt
 F_1 F_1
↓ ↓ ↓ ↓
 TT Tt Tt tt
Tall Tall Tall Short

Dihybrid cross: A breeding experiment dealing with two characters at the same time.



Mendel's Interpretation

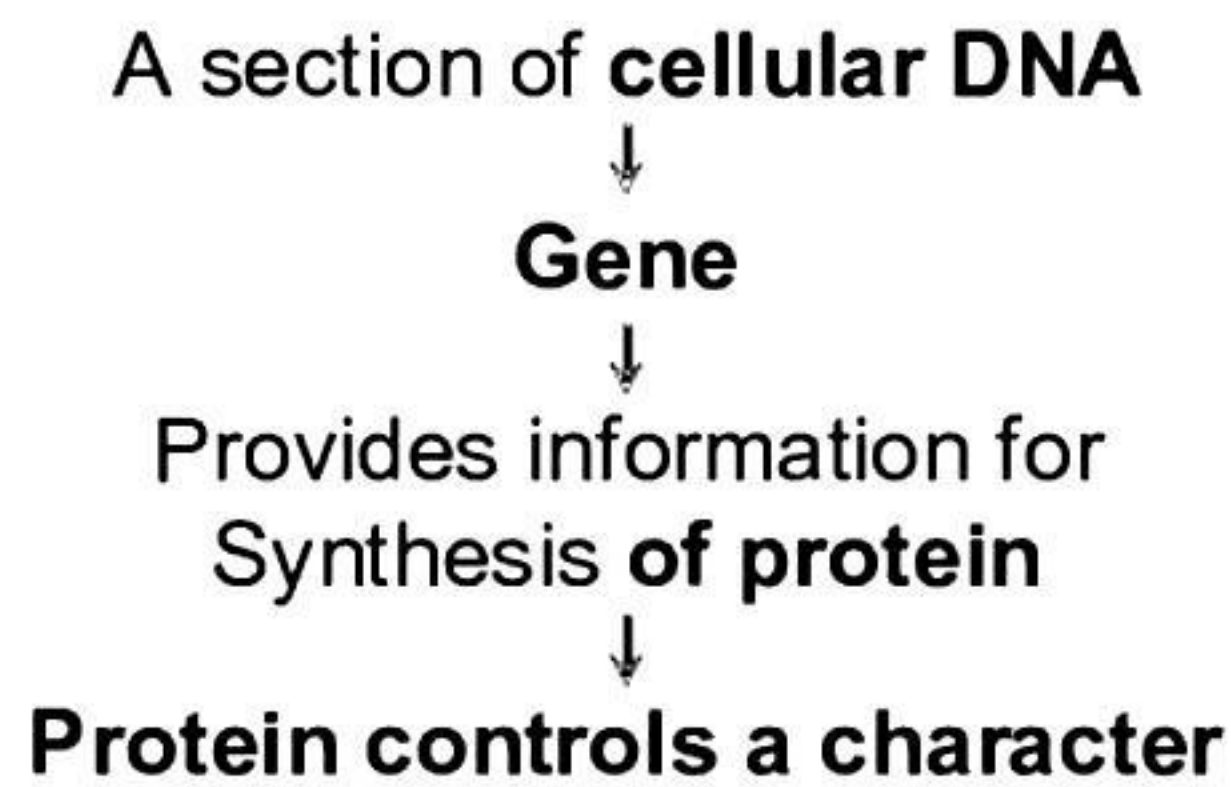
On the basis of monohybrid and dihybrid crosses, Mendel postulated :



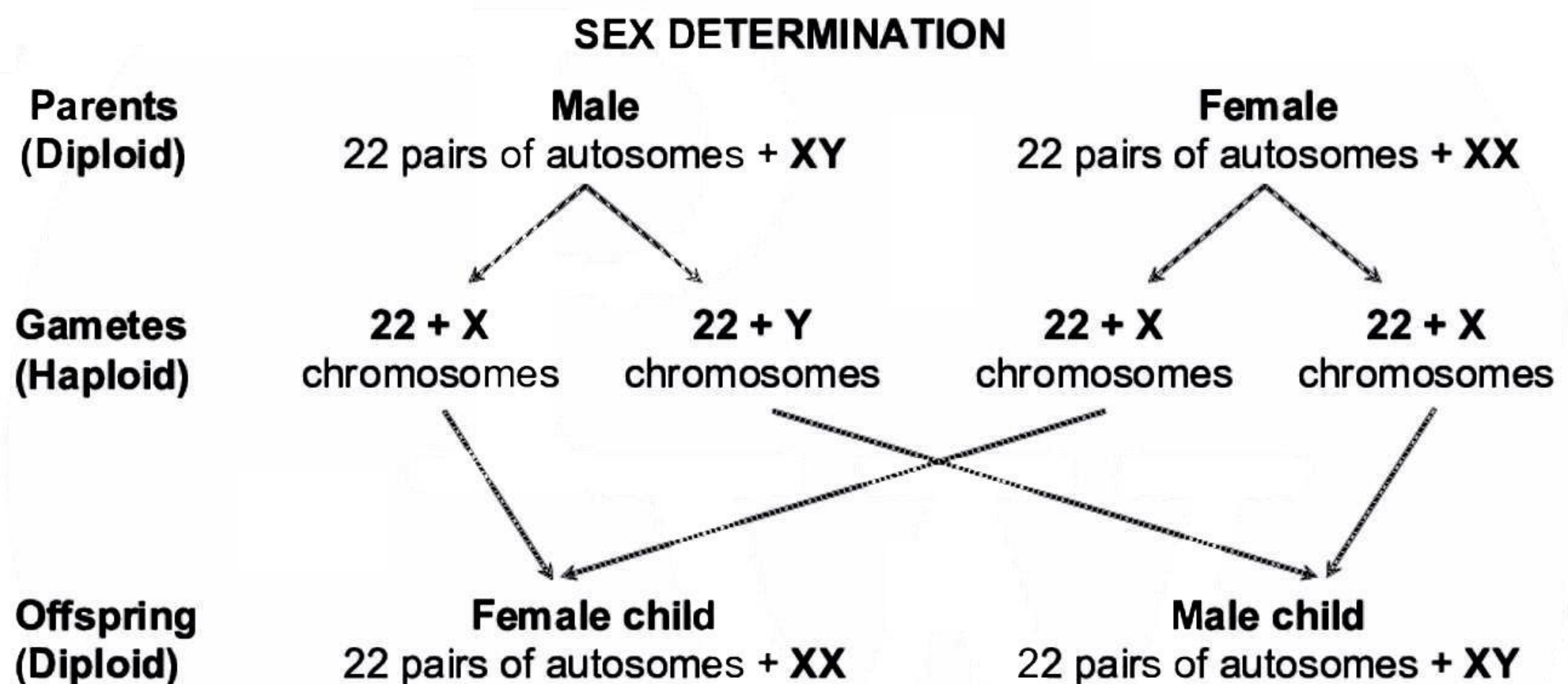
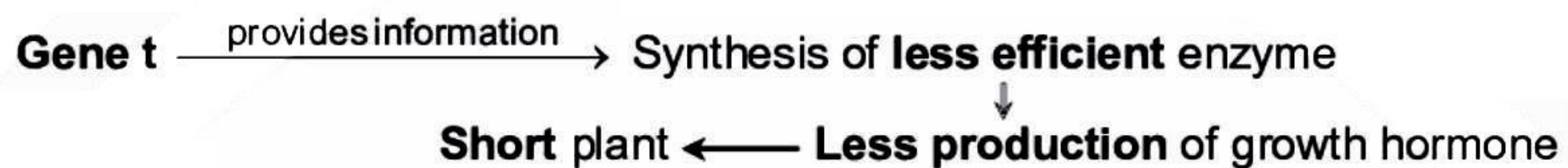
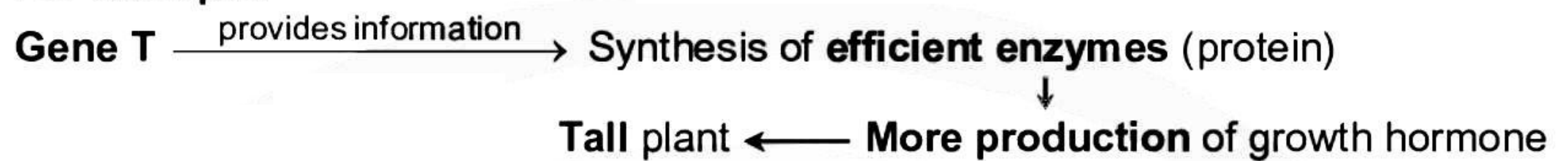
MECHANISM OF HEREDITY

Genes control characters or traits of an organism. Let's understand the mechanism of

heredity:



For example:



Evolution: Formation of new species from pre-existed organisms which might be quite different in their physiology, nutrition, habitat etc.