



Lecture No.:23

CORE CONCEPT OF
Group B - Genetics

Date: 28th May, 2020
SUB./GEN. - PART 1

LINKAGE - I

Linkage - It is defined as the tendency of genes to be passed on to the next generation in groups. In other words each linkage group contains many genes which are jointly responsible for a particular character.

A. The phenomenon of linkage was first discovered by Bateson and Punnet (1906) in Sweet Pea. They also discovered the phenomena of coupling and repulsion.

B. Morgan (1910) suggested that **coupling** and **repulsion** are the two important aspect of linkage.

Coupling - When the chromosomes remain intact, all the genes linearly located in them will always remain together and the linkage is said to be complete. Thus coupling is the tendency of dominant or recessive alleles to be inherited together.



Repulsion - However, sometimes the linked genes do separate during reduction division as a result of exchange of segments between a homologous chromosomal pair. Thus repulsion is the tendency of dominant or recessive alleles to repel each other.

Explanation - If the two alleles, such as A and B came from the same parent (AABB*aabb), they tend to enter the same gamete and transmitted together (coupling phase), and if the same alleles came from different parents (AAbb*aaBB) they tend to enter into different gametes (**repulsion phase**).