

## Crossing Over [Recombinations]

- Definitions → (i) Crossing over is a recombination of genes due to exchange of genetic material between two homologous chromosomes.
- (ii) Crossing over is the mutual exchange of segments of genetic material between non-sister chromatids of two homologous chromosomes, so as to produce recombinations or new combinations of genes.
- (iii) Tendency of genes to enter the gamete in new combinations which are quite different from those of the parents is called crossing over.

Crossing over term is given by Thomas Hunt Morgan and Castle in 1912.

### Site of Crossing over

Crossing over occurs in pachytene sub-stage of prophase - I of meiosis-I.

### Mechanism of crossing over

Chromosomes get replicated in S-phase of interphase. Therefore, leptotene chromosomes are double stranded though the