

⇒ This theory of evolution involves five basic processes:—

(a) Mutation (b) Variations (c) Heredity  
(d) Natural selection (e) Isolation.

⇒ In addition, three accessory processes affect the working of these five basic processes.

Migration of individuals from one population to another as well as Hybridization between closely related species both increase the amount of genetic variability available to a population. The effects of chances acting on small populations, may alter the way in which natural selection guides the course of evolution (Stebbins 1971).

PHONES

4 SUNDAY

JULY														2000			
S	M	T	W	T	F	S	S	M	T	W	T	F	S				
						1	2	3	4	5	6	7	8				
9	10	11	12	13	14	15	16	17	18	19	20	21	22				
23	24	25	26	27	28	29	30	31									

## (A) Mutation:

- Alteration in the chemistry of gene (DNA) is able to change its phenotype (i.e. nature of polypeptide) is called point mutation or gene mutation.
- Mutation can produce drastic change or may remain insignificant.
- There are equal chances of a gene to mutate back to normal.
- Most of the mutant genes are recessive to normal gene and these are able to express phenotypically only in homozygous condition.
- Thus point mutations tend to produce variations in the offspring.

WORK TO DO

## (B) Variation (Recombination):-

- Besides mutation several other processes like genetic recombination, hybridization, genetic drift, migration e.t.c. also bring about variations.
- The nature of genetic variations caused by reshuffling of genes during sexual reproduction was very little known at the time of Darwin.
- Recombination - that is, new genotypes from already existing genes is of several kind:- 1. the production of gene combinations contained in the same individual two different alleles of the same gene.

PHONES

JUNE '2000

TUESDAY

6

APPOINTMENTS

2. the random mixing of chromosomes from two parents to produce a new individual (sexual reproduction),
3. the mixing of a particular allele with a series of genes not previously associated with it, by an exchange between chromosomal pairs during meiosis, called crossing over.