

B.Sc-I (Sub) 04.05.2020 |

Secondary growth or growth in thickness

↓  
Dicot stem

↓  
Dicot root

Secondary growth :->

Increase in thickness due to the activity of Cambium present in the stelar region and Cork Cambium present in the Extra stelar region is called secondary growth.

Secondary growth in dicot stem divided into-

- (a) Secondary growth in stelar region
- (b) Secondary growth in Extra stelar region.

~~(c)~~



(i) Secondary growth in stem region: →  
① In dicot stem V.C are conjoined collateral and open which are arranged in ring so in between xylem and phloem cambium present may called as fascicular cambium or intra-fascicular cambium.

② Some parenchymatous cells of medullary rays or pith rays in between two fascicular cambium become also meristematic called as inter-fascicular cambium.

③ Both fascicular and inter-fascicular cambium are joined together to form complete cambium ring.

④ Cambium ring having 2 types of cells.

(A) Fusiform initial (form secondary xylem or secondary phloem)

(B) Ray initial (form pith rays)

This cambium ring divide to form secondary xylem towards the inner sides and secondary phloem towards the outer side. So primary xylem pushes towards the centre and primary phloem pushes towards the periphery.

⑤ The amount of secondary xylem is more than the secondary phloem.

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B.Sc-I (Sub)



Topic - Bacteriophage

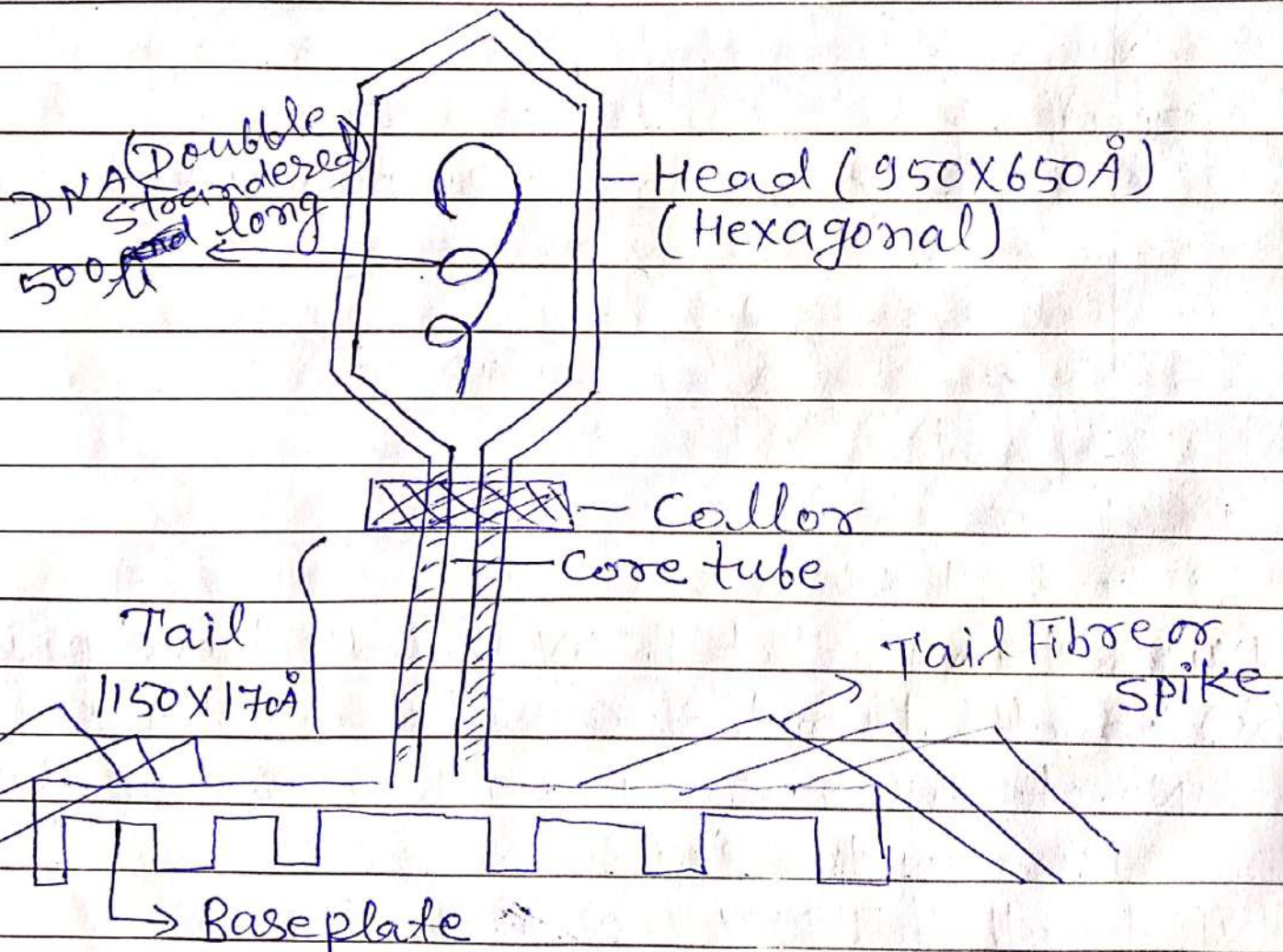
Structure of bacteriophage :-> (Bacteria eater)

First of all discovered by Twort (1915) and name, detailed studied by de Herelle (1917)

Chemical Nature of bacteriophage was given by Schleisinger (1933) and considered that it is made up of DNA and protein.

It is tadpole or sperm like. So divisible into (a) Head ->  $950 \times 650 \text{ \AA}$

(b) Tail ->  $1150 \times 170 \text{ \AA}$



(Hexagonal)

Structure of bacteriophage  
( $T_2, T_4, T_6$ )



- (iv) Head is hexagonal which is made up of protein.
- (v) Within head about 5000 long double stranded DNA present as genetic material.
- (vi) Below the head elongated core (कोर) tail present which is covered by proteinaceous tail sheath.
- (vii) Head and tail join together with the help (Coxes) proteinaceous "collar".
- (viii) At the base of tail hexagonal (षट्भुजाकार) proteinaceous Base plate present
- (ix) on Base plate about six tail Fibres or spike present which is also made up of protein and help in attachment of bacteriophage at the active site of bacterial cell wall. during adsorption.

### Reproduction or Multiplication :-> of Virus :->

(i) Virus multiply within the living suitable host cell by the utilization of host cell raw Material

(ii) Viruses are non motile (अचलमान) outside the host cell so they reaches diseased healthy either by direct contact or by any agent like aphides (मिट्टी) Fungis etc. Such process is called as transmission of Virus.

Time of virus multiplication vary. virus to virus.

(1) Bacteriophage → 20-30 Minute

(2) cyanophage → 12 hours

(3) Animal and human virus → several days to years.

*Ranky*  
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