

HI

FROM

APPY

FIZZ

MAM





Hii

From



APPY FIZZ

MA'AM

-Mehwish





# VIRUSES

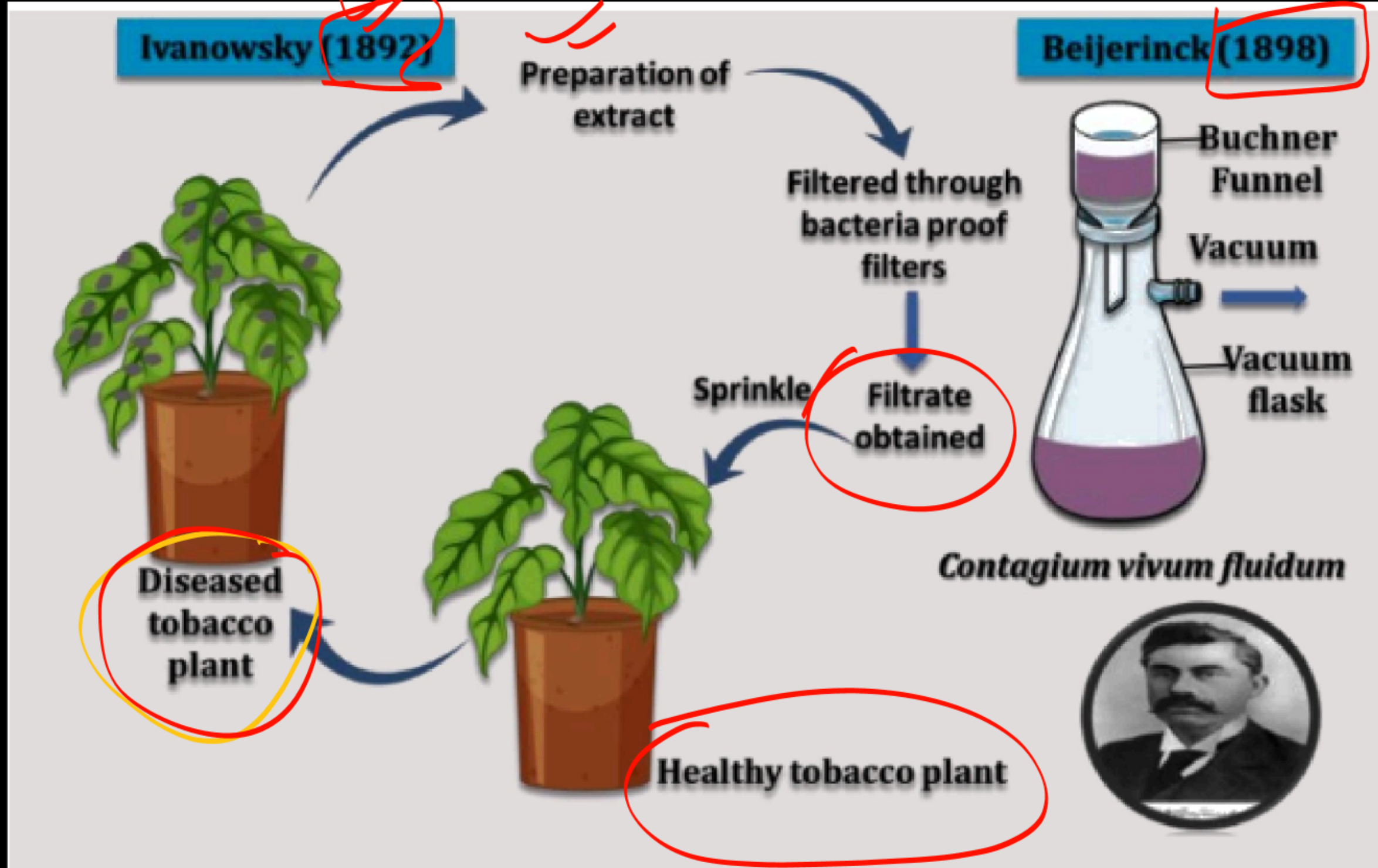
**Virus** : Latin word, which means "poisonous fluid" or "venom" or "secretion"



# HISTORY <sup>DT</sup>

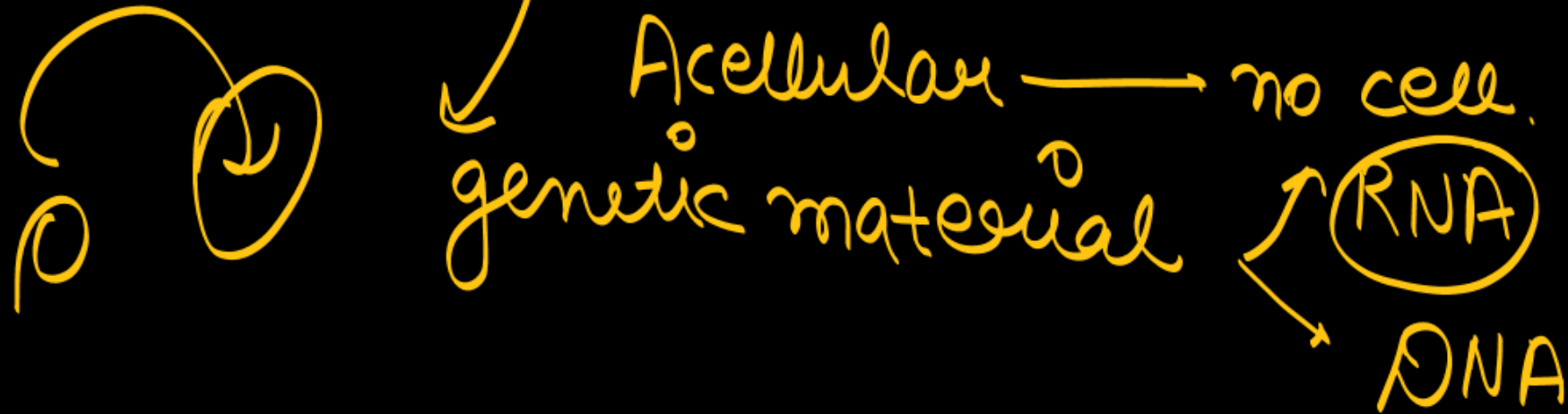
- ✱ • Ivanowsky separated a microorganism from the sap of infected tobacco plant and named 'TMV'. Tobacco mosaic virus
- ✱ • He reported that viruses are smaller than bacteria and they can pass through the bacterial proof filters.
- MW • Beijerinck demonstrated that the extract of the infected plants of tobacco could cause infection in healthy plants and called the fluid as "contagium vivum fluidum (Infectious living fluid)".
- WN • Stanley crystallized TMV first time and Nobel prize was awarded to him.







1. These are sub microscopic & non-cellular organisms.
2. They are obligate intracellular parasites.
3. They have either RNA or DNA. No virus contains both DNA and RNA.
4. They are inert outside their specific host cell in crystalline form.









Living Vs

(1) Genetic material

(2) Infectious (cause infection)

(3) Can be killed

Non-Living

(1) Acellular (no cell)

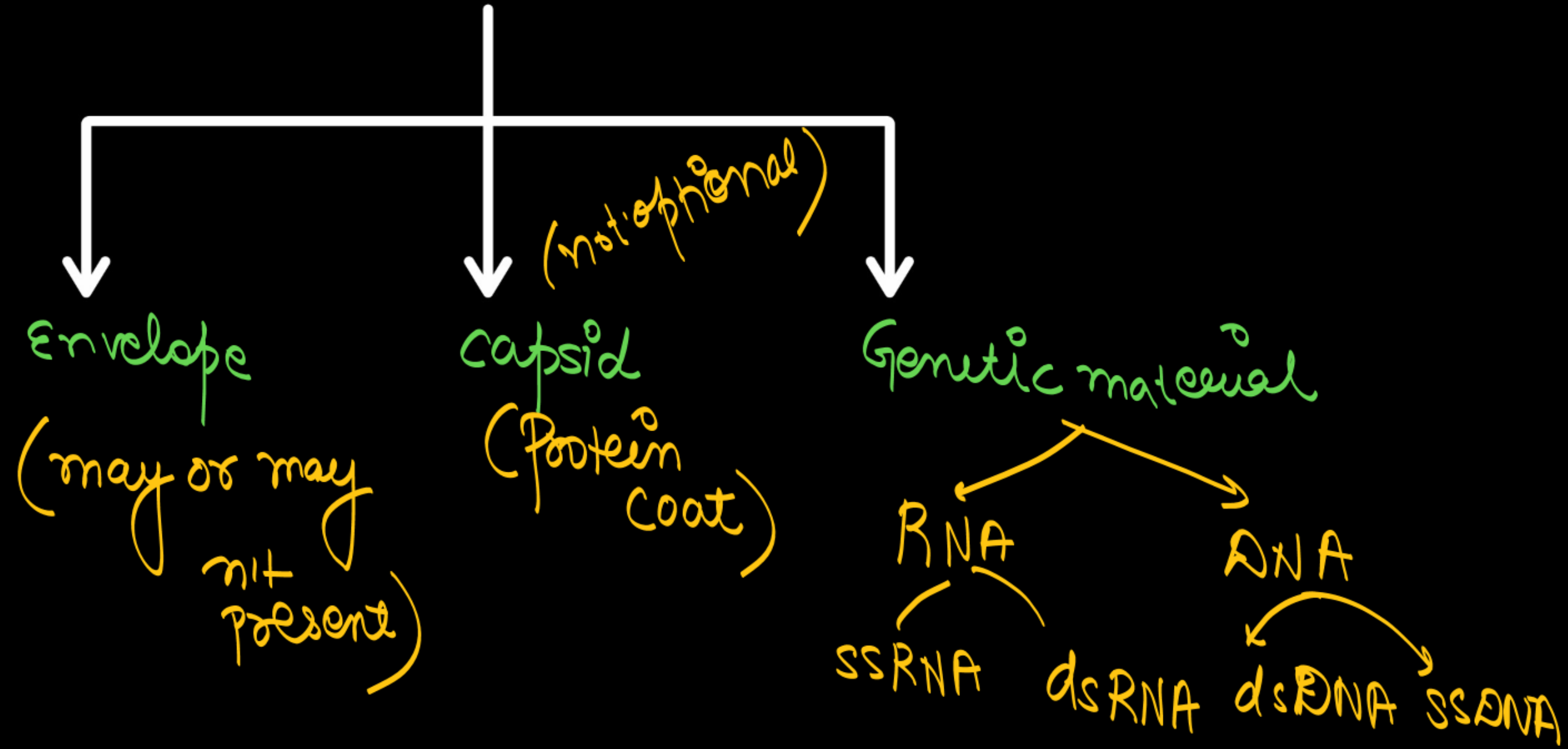
(2) Metabolism

(3) no growth & division.

It is a connecting link between living & non-living



# STRUCTURE OF VIRUSES

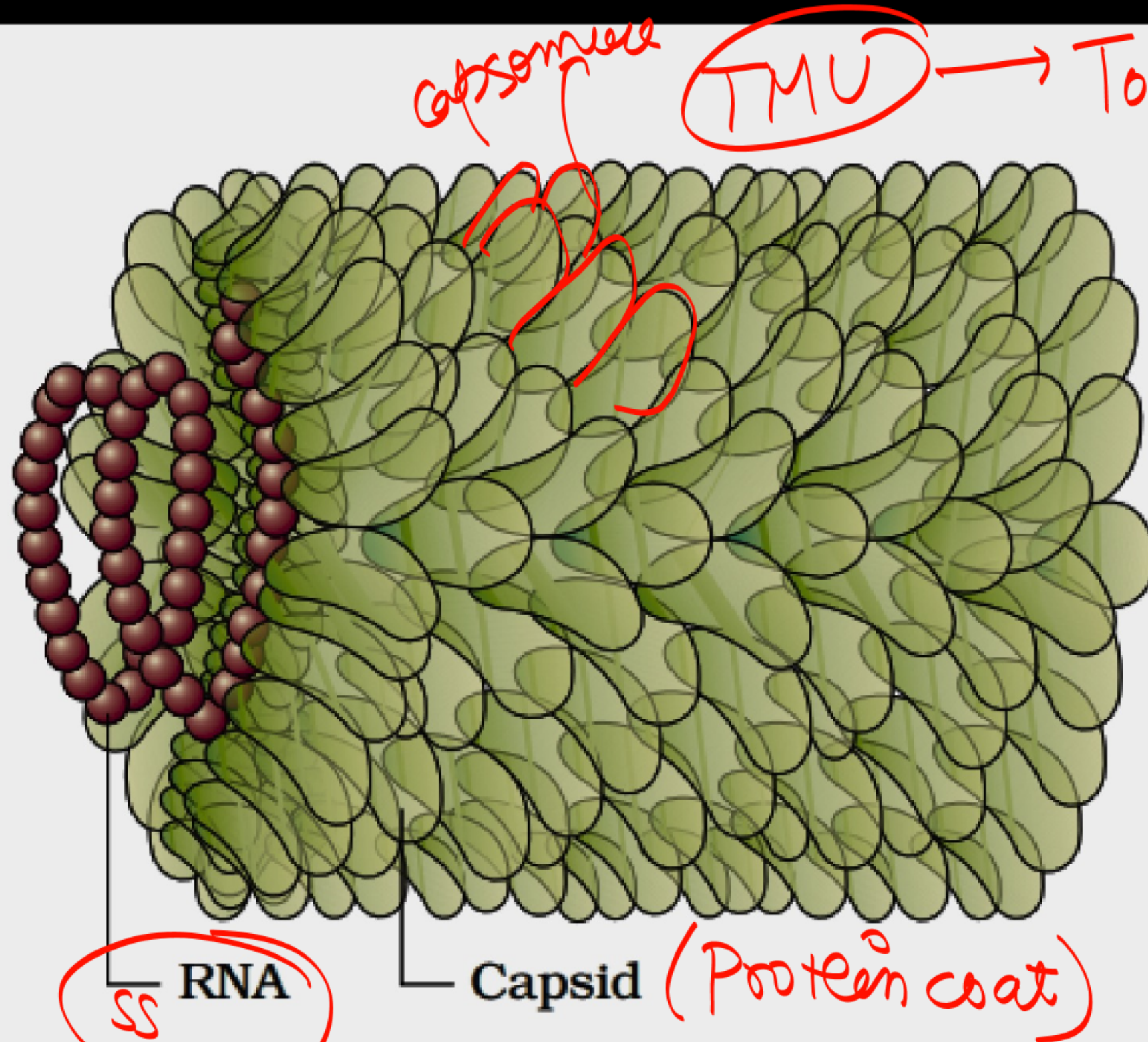




- viruses that infect plants have single stranded RNA
- viruses that infect animals have either single or double stranded RNA or double stranded DNA.
- Bacterial viruses or bacteriophages (viruses that infect the bacteria) are usually double stranded DNA viruses

dsDNA

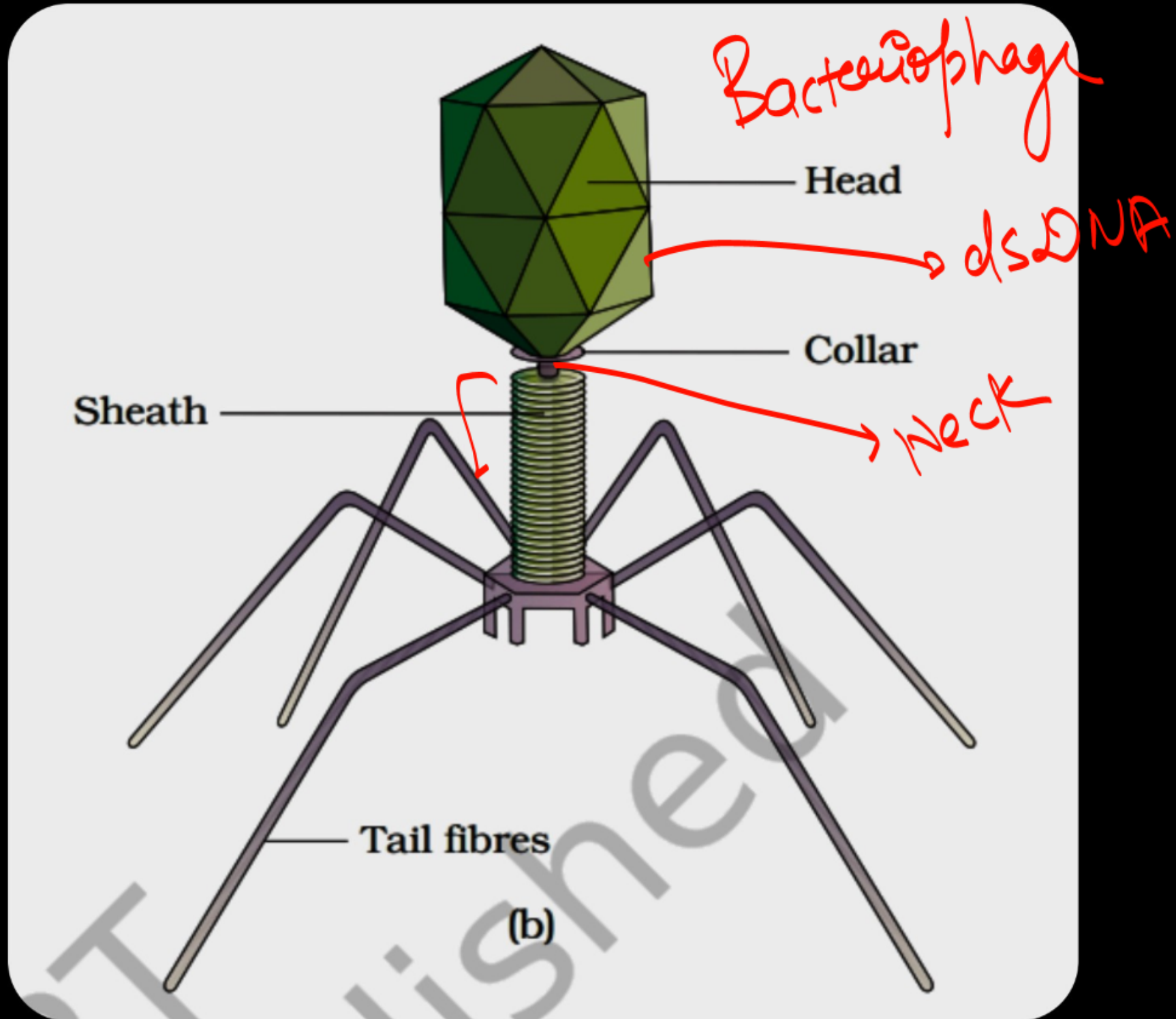




Tobacco mosaic virus

95% protein coat  
5% Genetic material







# HUMAN DISEASE CAUSED BY VIRUS: -

1. Influenza ✓
2. Mumps ✓
3. Small pox ✓
4. Herpes disease ✓
5. AIDS ✓

Human disease caused by virus: -

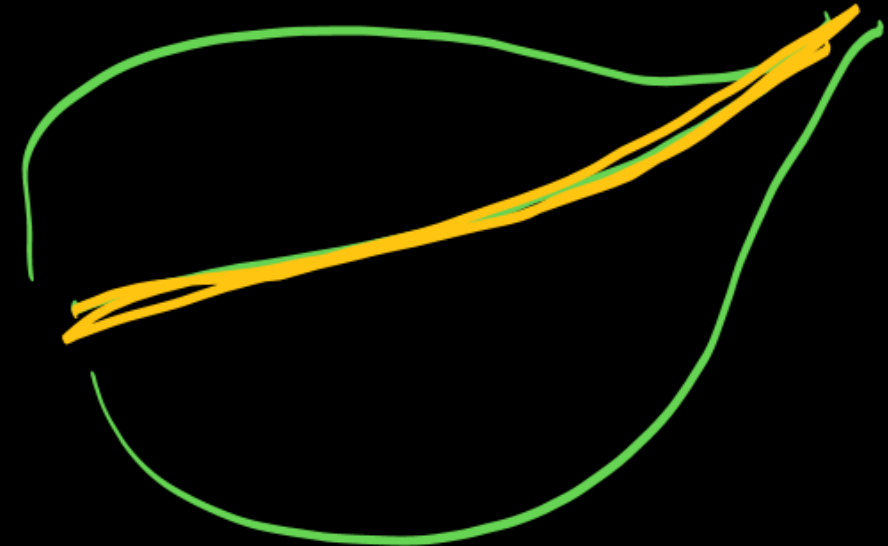
dsDNA

In plants, the symptoms can be mosaic formation, leaf rolling and curling, yellowing and vein clearing, dwarfing and stunted growth.





Leaf rolling  
& curling





# VIROIDS

molecular weight ↓ → no protein coat

#apifyfizz

ssRNA

- T.O. Diener (1971) discovered some new infectious agents, which are smaller than viruses, called viroids.
- Viroids contain only very low mol. wt. RNA (ss RNA) and not the protein coat.
- Viroids cause Potato spindle tuber disease.



Potato Spindle tuber Disease



# PRIONS

- In modern medicine certain infectious neurological diseases were found to be transmitted by an agent consisting of abnormally folded protein. The agent was similar in size to viruses. These agents were called prions. The most notable diseases caused by prions are bovine spongiform encephalopathy (BSE) commonly *catties* called mad cow disease in cattle and its analogous variant Creutzfeldt-Jacob disease (CJD) in humans.



# LICHENS (Symbiotic association)

Lichen is composed of algae and fungi or Lichen is a composite thalloid structure of algae & fungi.

The algal part of lichen is called phycobiont (photobiont) and the fungal part is called mycobiont.

Both algae & fungi remain in symbiotic association i.e. they are beneficial for each other.

The algal part makes carbohydrates through photosynthesis and provides nutrition to fungus & itself. The fungal partner absorbs water and minerals and provides them to algal partner also.

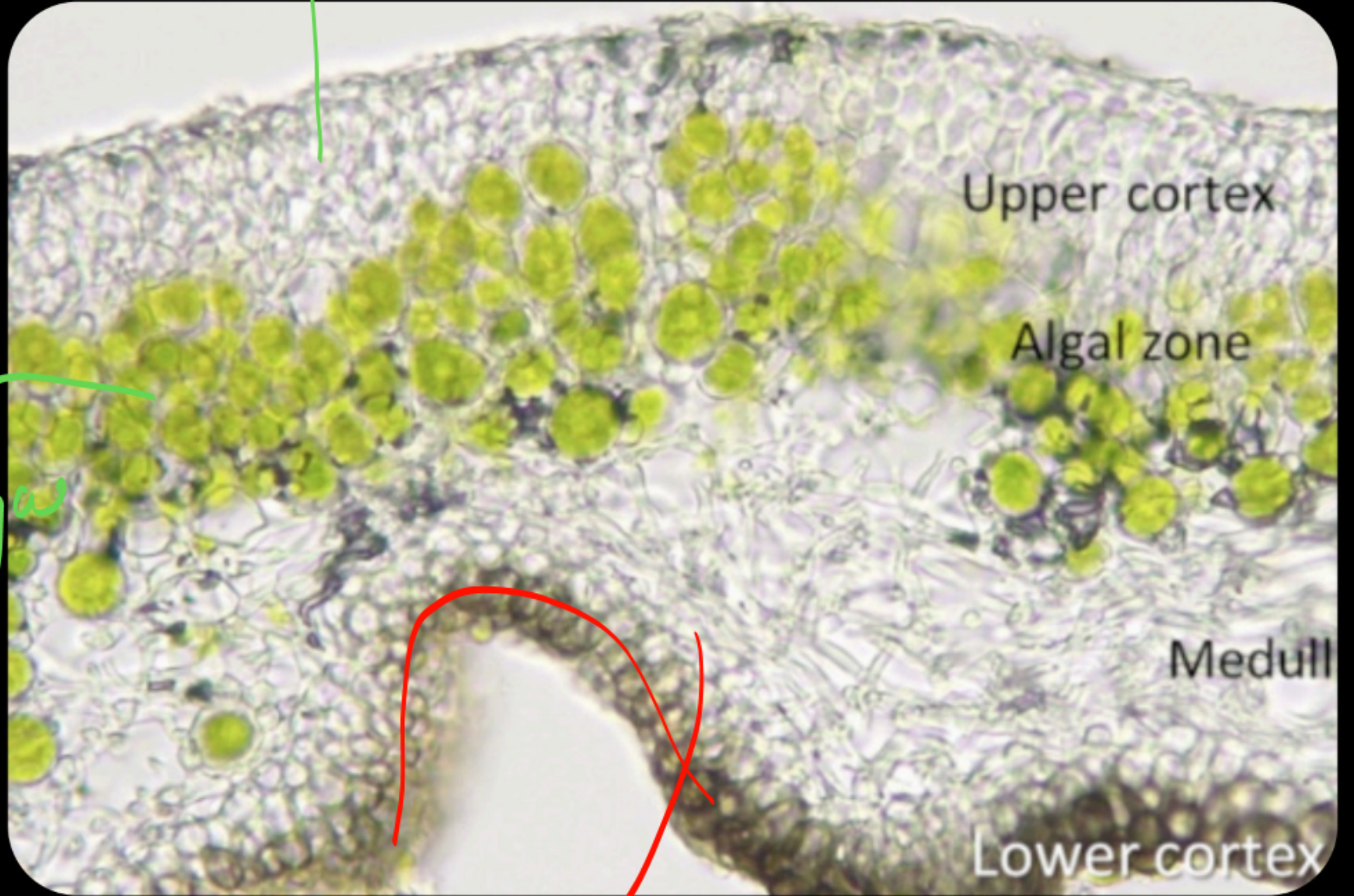
# Happy couples



# Sandwich

Fungal

Alga



Fungal





# STAY CONNECTED!!!!

*& Keep Learning.*

Thank you<3



## BYE CUTIESSS!!



CHALO BHI  
CHEPTARR KHATAM!!!!

Made by-  
Khushnuma ♥



# STAY CONNECTED

## KEEP LEARNING

*Thank You*



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