

Lichens

1868

Simon

✱

Schwendener

• Professor tulsane

Phototrophic

Algal

Algae



Phycobiont



Phycology



Prepare the food for fungi

Fungal



mycobiont



mycology



H₂O / Shelter

Heterotrophic

→ mutually | symbiotic relationship along with organisms

Lichenology



Lichen = Algae + Fungi



= p. biont

+

mycobiont

↓
Phycobiont

Phycology

Algae: Phycology

Plants: Phytology

Fungi = Mycology

Muscles => myology

Lichens = IAP

```
graph TD; IAP --- Indices[Indices of]; IAP --- Atmospheric[Atmospheric]; IAP --- purity[purity]; Indices --- Arrow[↓]
```

→ does not grow in polluted area.

→ Sensitive towards the SO₂

Lichen

Crustose

Fructose

Foliose

→ Good Polluted indicator

→ Mycoplasma < viroid < virus < Bacteria
< plant + Animal cell

ONLY

RNA

molecular weight low

Viroids

smaller than the virus

T. O. Diener in 1971

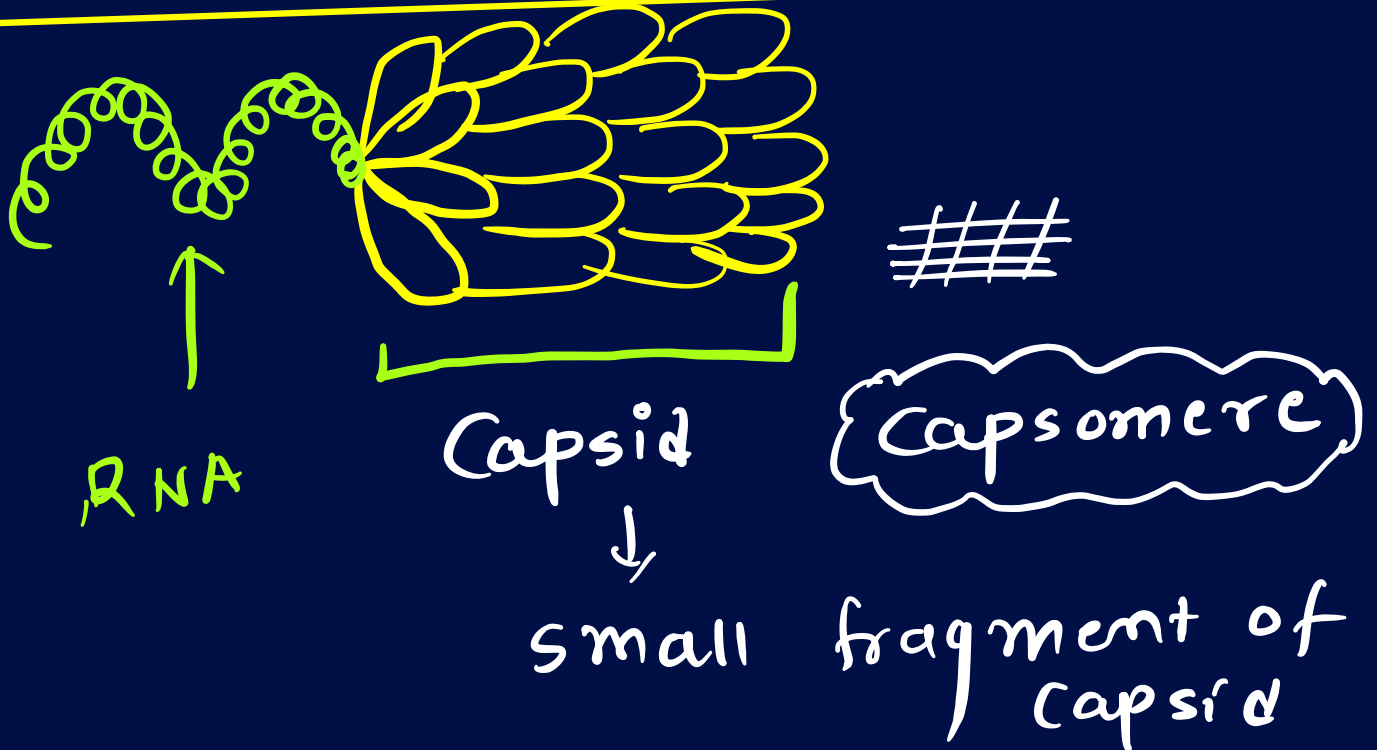
lacks of Protein coat

Disease: Potato

Potato Spindle Tuber Disease

P S T D

Tobacco mosaic virus



Prions: Infectious Protein

Kuru
disease

↓
Laughing
Death
Disease

Mad cow
Disease

↓
(BSE)
Bovine
spongiform
Encephalopathy

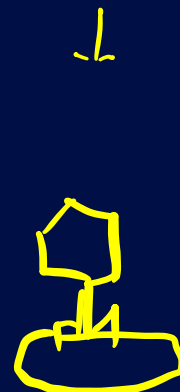
Virus

TMV

Already
Explained

RNA, capsid

Bacteriophage



T₄
B. Phage

✓ Transduction

✓ lytic

virus: ✓ Harmful

✓ Obligatory parasites

✓ Acellular | Non-cellular

Cellular ✓ outside — Non Living
structure Inside → Living



R. H. Whittaker : virus x ^{NOT} cellular structure

Louis Pasteur :

Coined the term virus
venom

D. J. Ivanowsky : (1892)

Tobacco mosaic virus (TMV)

(TMV)



Tobacco

(Nicotinia tobaccum)

M. W. Beijerinck : contagium vivum
fluidum

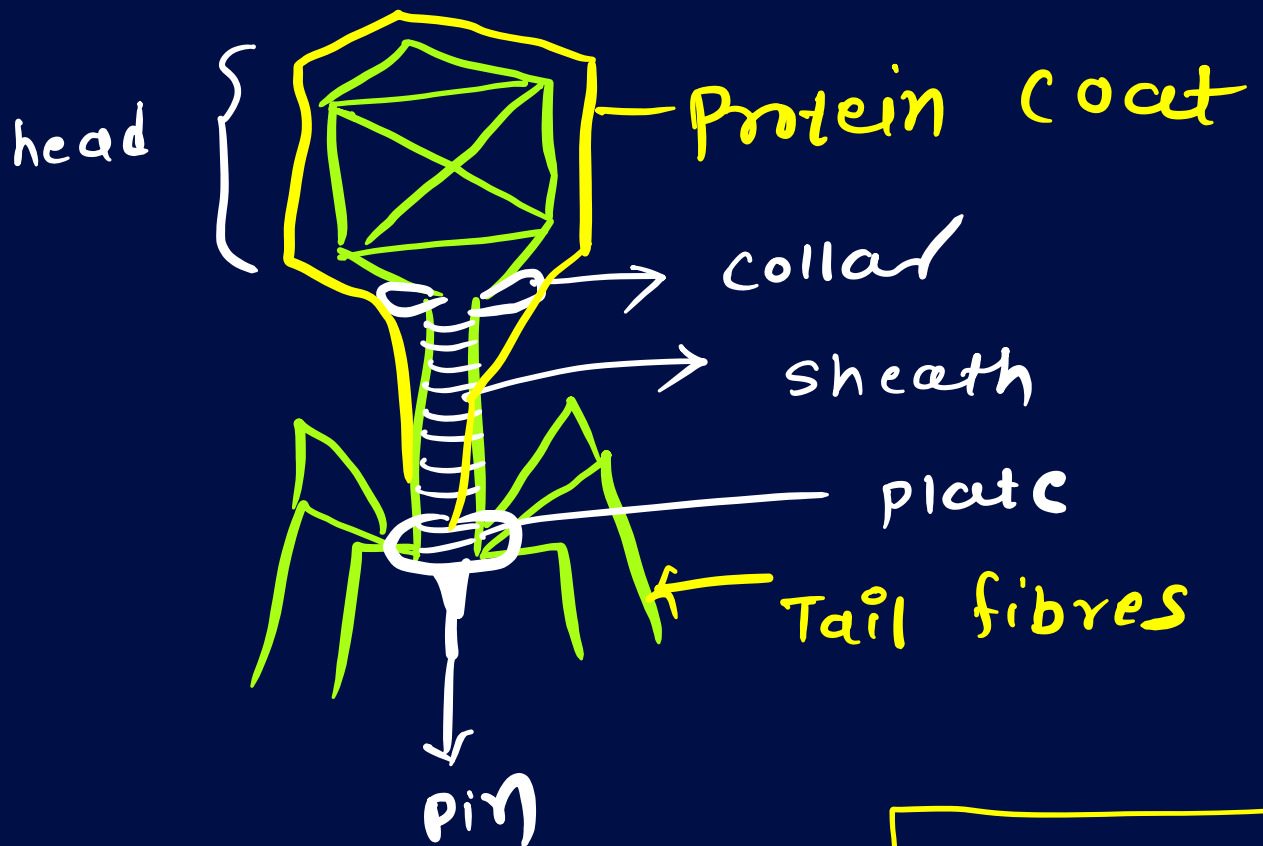
(1898)

Contamination

↓
Body fluid

W.M. Stanley: could be
crystallized structure

T₄ Bacteriophage



viroids

↓
RNA

viruses



DNA + RNA

↓
Leucovirus



Bacteriophage
virus

River Ganga → free from
Bacteria
H₂O


SS DNA → $\phi \times 174$

ds DNA → Pox virus
Cauliflower mosaic virus
T₄ Bacteriophage

SS RNA → TMV, HIV,
Influenza

ds RNA : → Reo virus,
Wound tumor virus

ss — } single stranded

ds  — double stranded.

→ virus:

Common:
cold

Rhino virus

AIDS:

HIV

Genital:
warts

HPV

Hepatitis-B

: HBV

COVID-19

: Corona

Swine flu : H1N1

Pneumonia : Haemophiles
influenza

Bacteria, Protista, virus, viroids, Algae
Lichens, Prions, Fungi