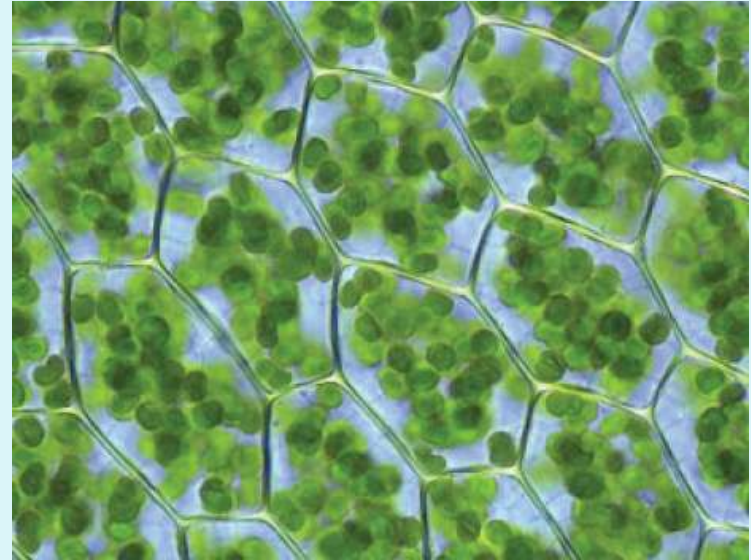


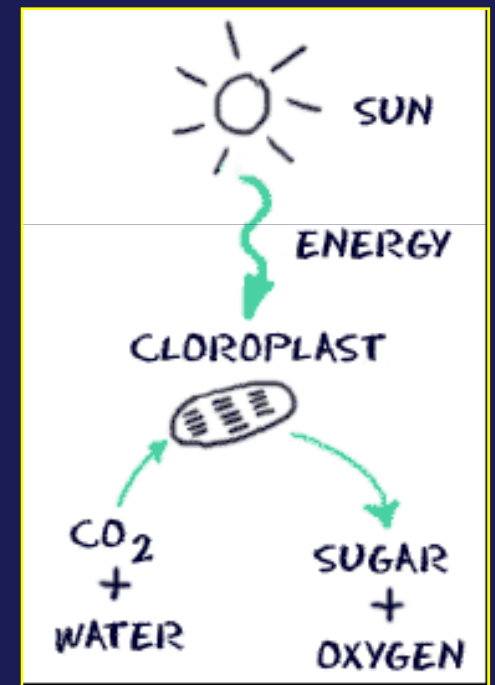
# CHLOROPLAST

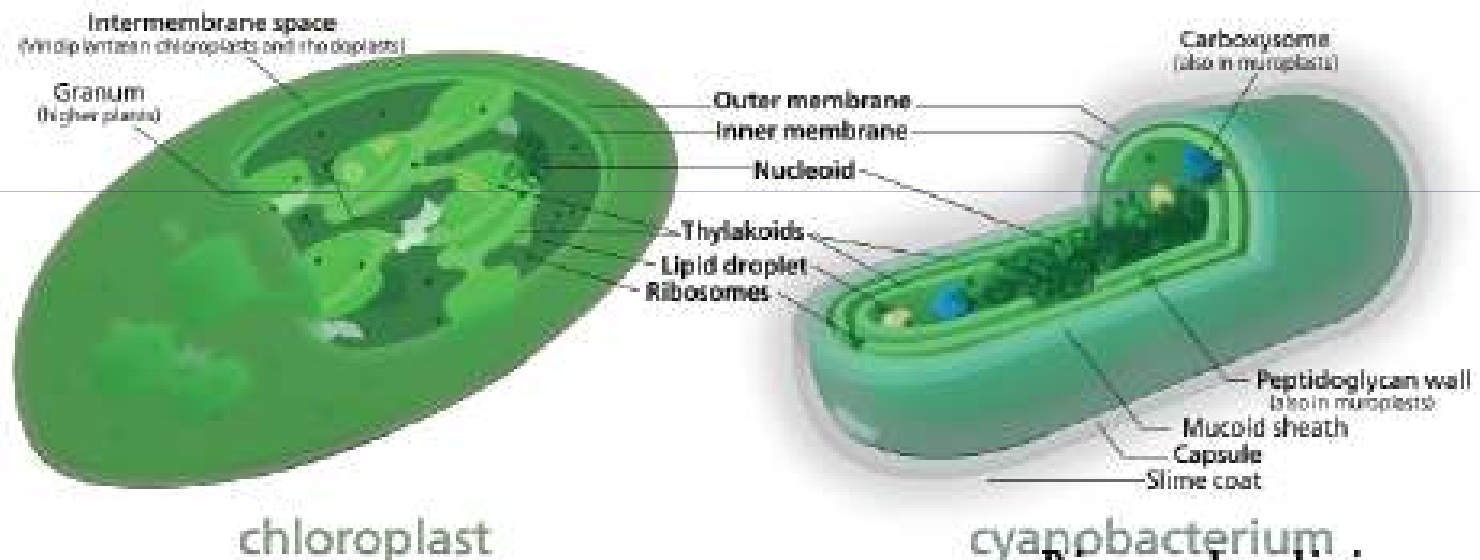


By  
PRAMOD KUMAR MAHISH  
Asst. Professor (Biotechnology)  
Govt. Digvijay PG College  
Rajnandgaon (C.G.)

# INTRODUCTION

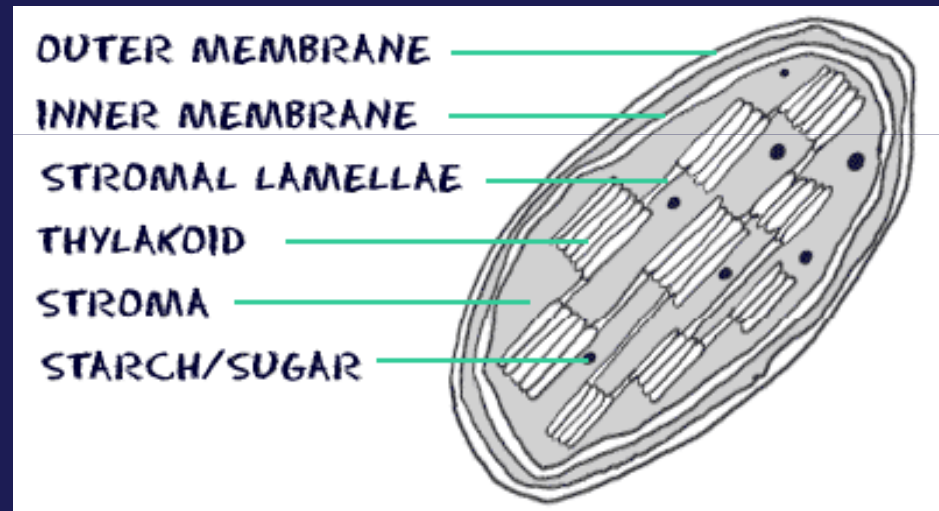
- Chloroplasts are organelle found in plant and some other eukaryotic organisms conducting photosynthesis.
- Every green plant you see is working to convert the energy of the sun into sugars.
- Plants are the basis of all life on Earth. They create sugars, and the byproduct of that process is the oxygen that we breathe.
- That process happens in the chloroplast.





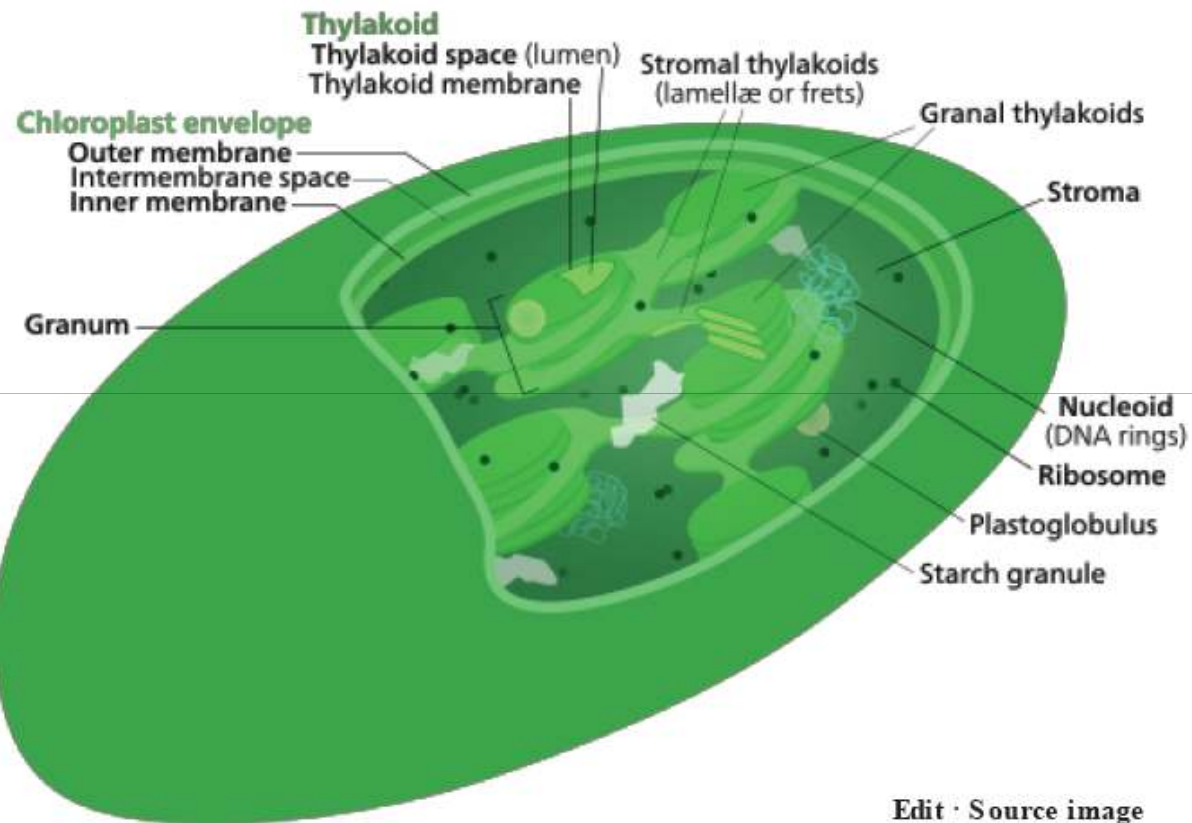
# Structure

- Outer membrane
- Inner membrane
- Stroma
- Stromal lamellae
- Thylakoid
- Starch
- Ribosomes
- DNA

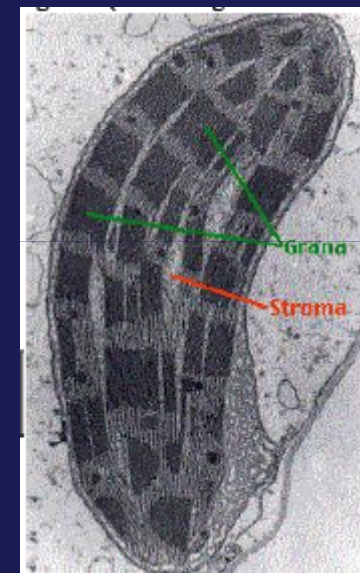


# Membrane and stroma

- Chloroplast has a two membrane envelop termed the inner and outer membrane, between these two layer is the inter membrane space.
- The fluid within the chloroplasts is called the stroma, contain circular DNA and ribosome.
- Within the stroma are stacks of thalakoids, the sub orgallae where photosynthesis actually takes place.

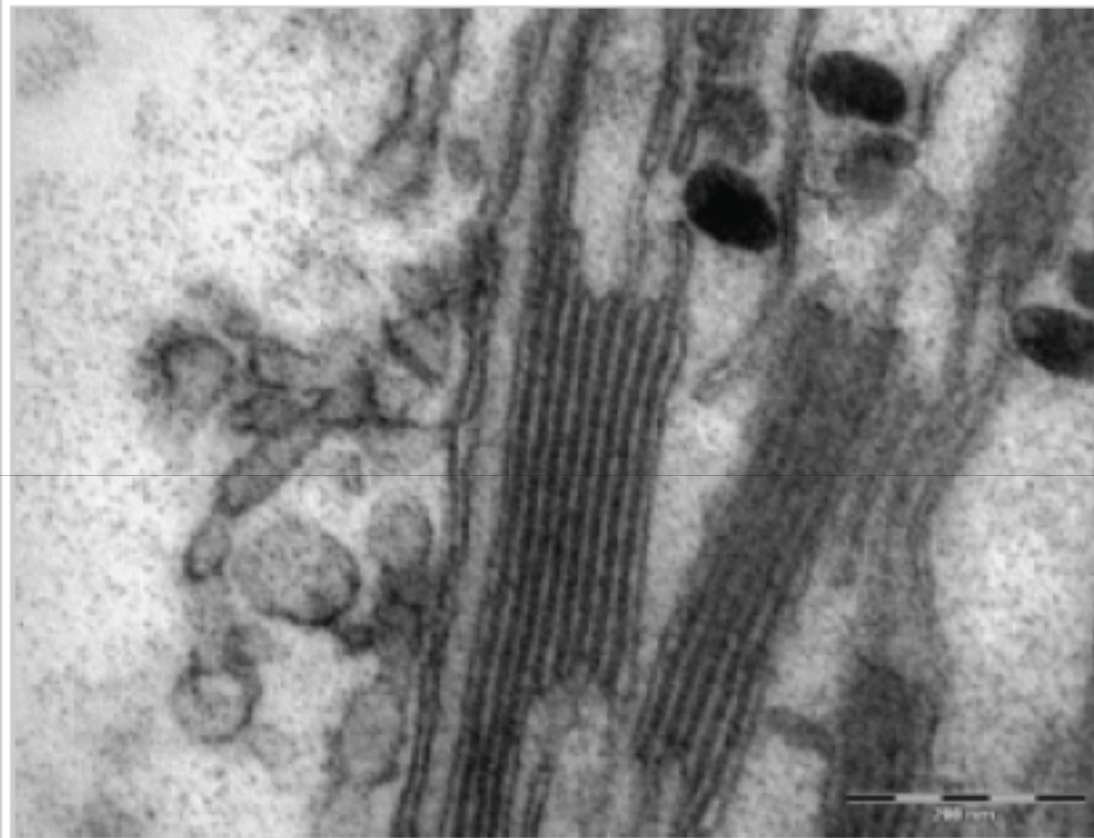


Edit · Source image



# Thalakoid

- A stack of thylakoid is called a granum (grana).
- A thylakoid looks like a flattened disk, and inside is an empty area called the thylakoid space or lumen.
- The photosynthesis reaction takes place on the membrane of the thylakoid.
- Thalakoid membrane is a disc of cholophyll molecule known as an antenna complex.



Transmission electron microscope image of some thylakoids arranged in grana stacks and lamellæ. Plastoglobuli (dark blobs) are also present.

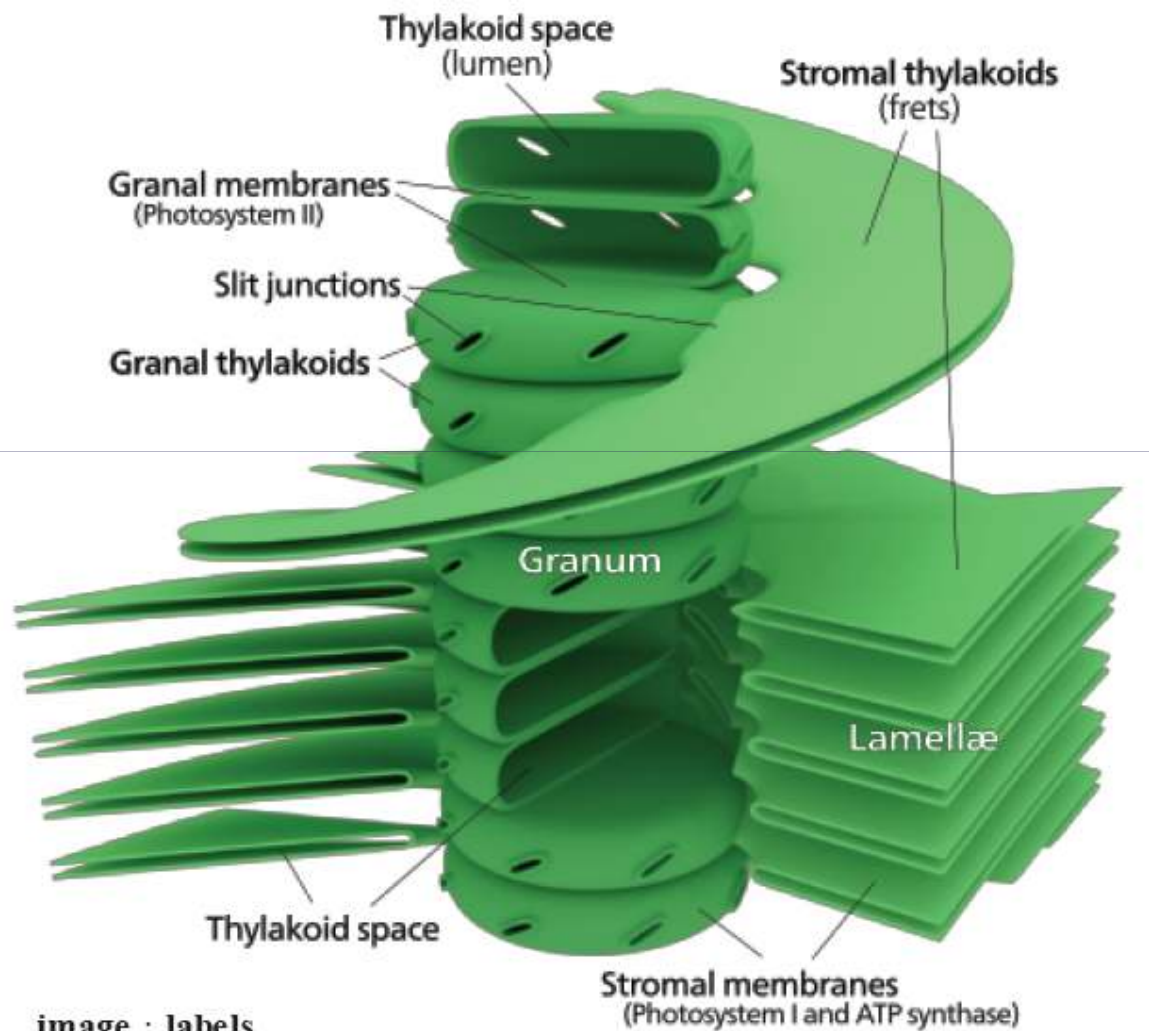
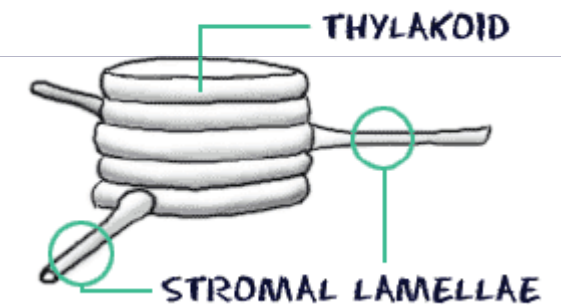


image · labels



# Photosystem

- Four types of protein assemblies are embedded in the thylakoid membrane –
- Photosystem I Chlorophyll and Carotenoid
- Photosystem II Chlorophyll and Carotenoid
- Cytochrome b and f
- ATP synthase

# Chloroplast Genome

- Genes for –
  - rRNA
  - tRNA
  - Ribosomal Proteins
  - RNA Polymerase subunit
  - Photosystem I
  - Photosystem II
  - Cytochrome b and f
  - ATP synthase

Thankyou