



Bhagalpur National College, Bhagalpur

(A Constituent unit of Tilka Manjhi Bhagalpur University, Bhagalpur)

PPT Presentation for B.Sc. I- Life Cycle of Vaucheria



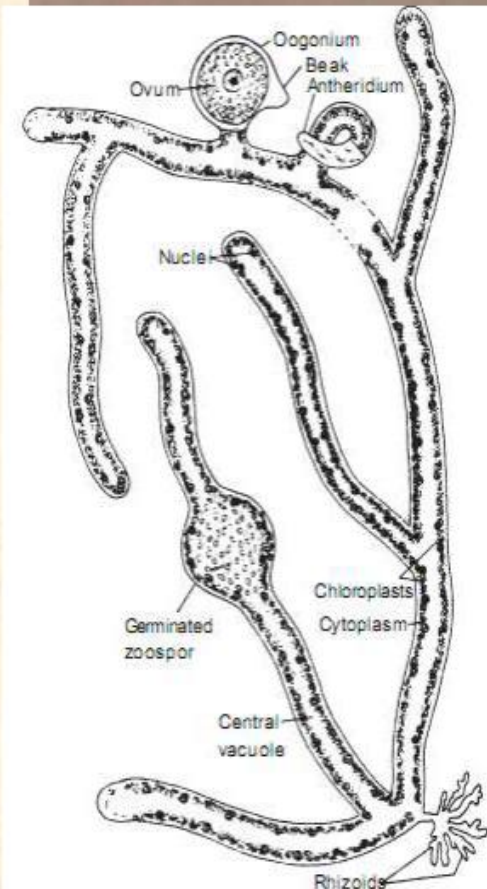
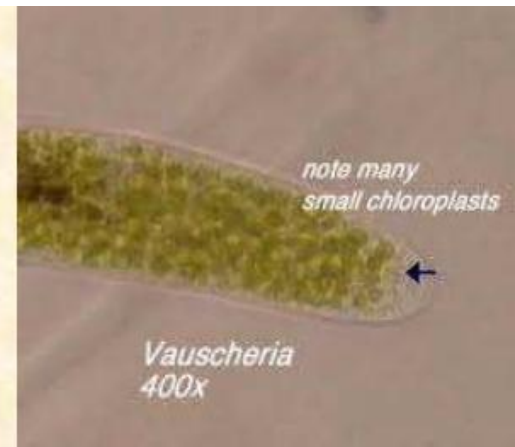
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Habitat

1. Aquatic as well as terrestrial
2. Grows in the form of dense tufts on damp garden soil, moist walls, stagnant ponds, ditches etc.

Vegetative structure

1. Yellow green filamentous alga
2. Branching is monopodial but appears dichotomous
3. Vacuole is continuous throughout thallus
4. Thalli are multinucleated, lack cross-walls and are called coenocytic
5. Numerous yellow-green chromatophores contain Chl a,e, carotene & xanthophylls
6. Reserve food material is oil



Asexual reproduction

Zoospores (synzoospres):

Multiflagellate & multinucleate, produced in club shaped sporangium.

During development of zoosporangium, tip portion of side branch starts swelling and becomes club shaped

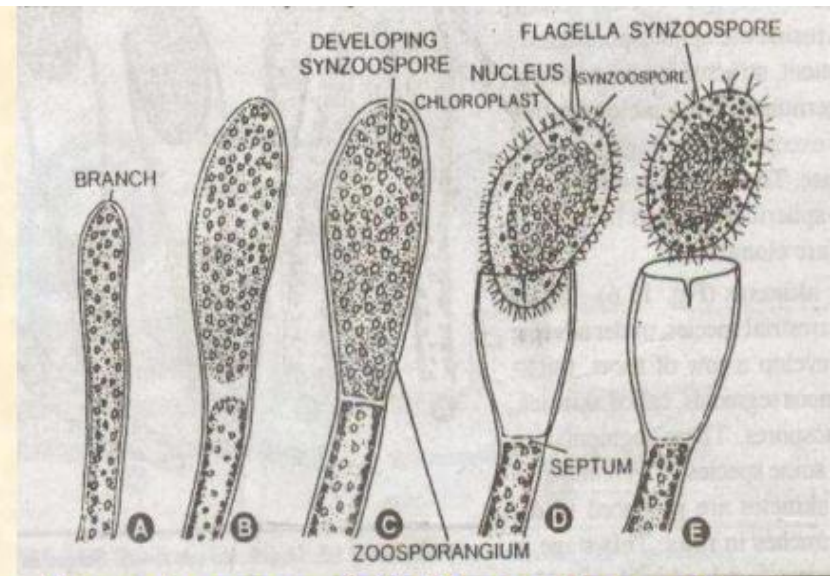
Dense cytoplasm along with large number of nuclei and chromatophores flow into the swelling followed by appearance of septum.

Central vacuole reduces, zoosporangium turns into dark green in color

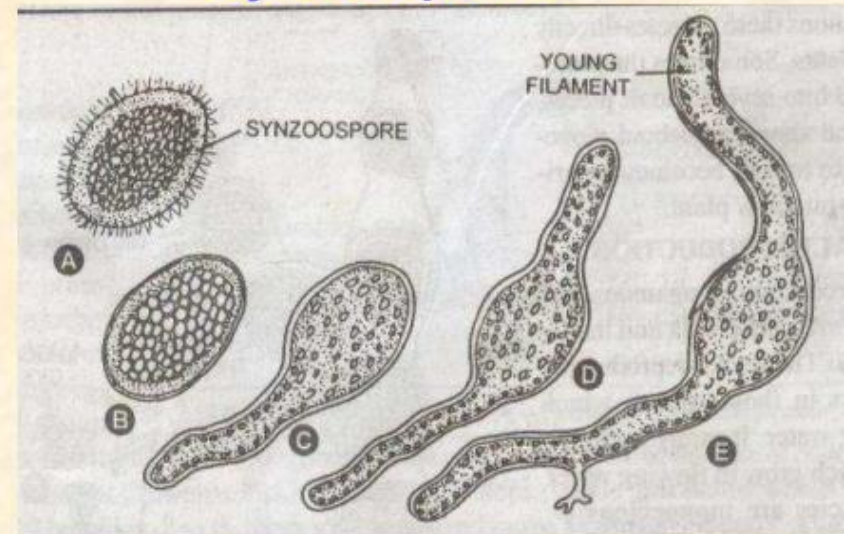
Nuclei exchange their position from chromatophores

The protoplasm starts contracting from cell wall and changes into zoospore.

Zoospores are liberated and are called synzoospore or compound zoospore.



Development & liberation of synzoospores

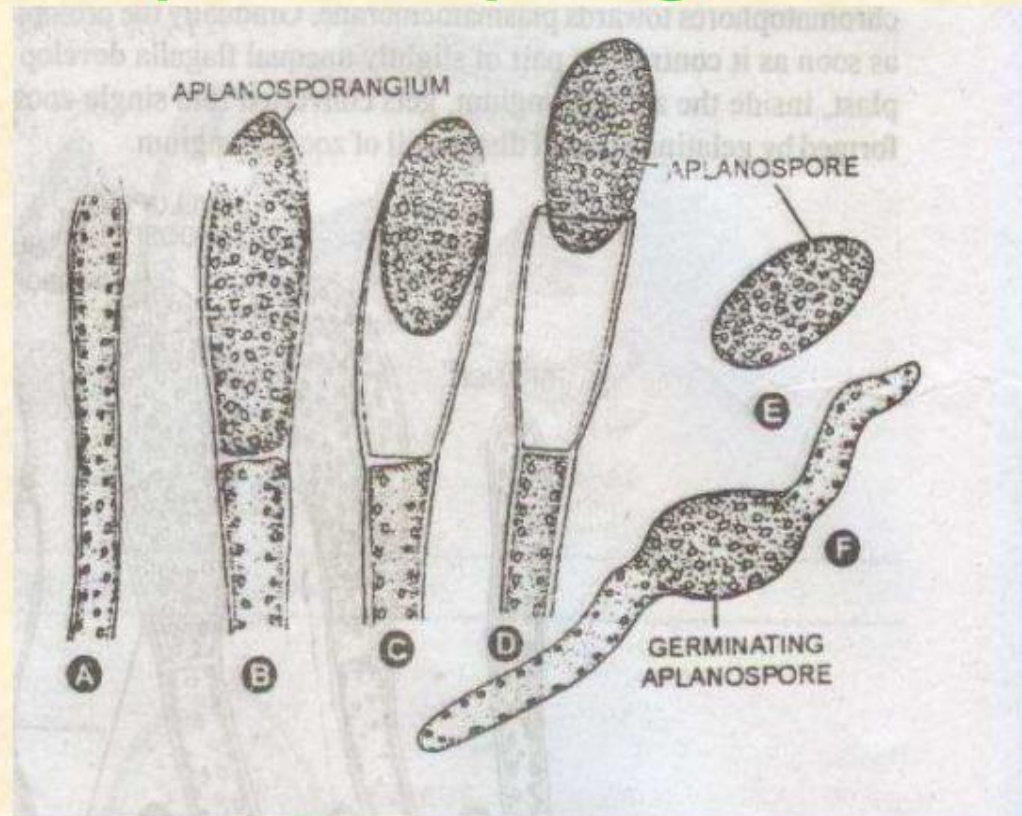


Germination of synzoospores and zygote formation

Aplanospores (Non-motile spores produced under unfavorable conditions)

Produced inside aplanosporangium.

These are like zoospore except flagella are absent

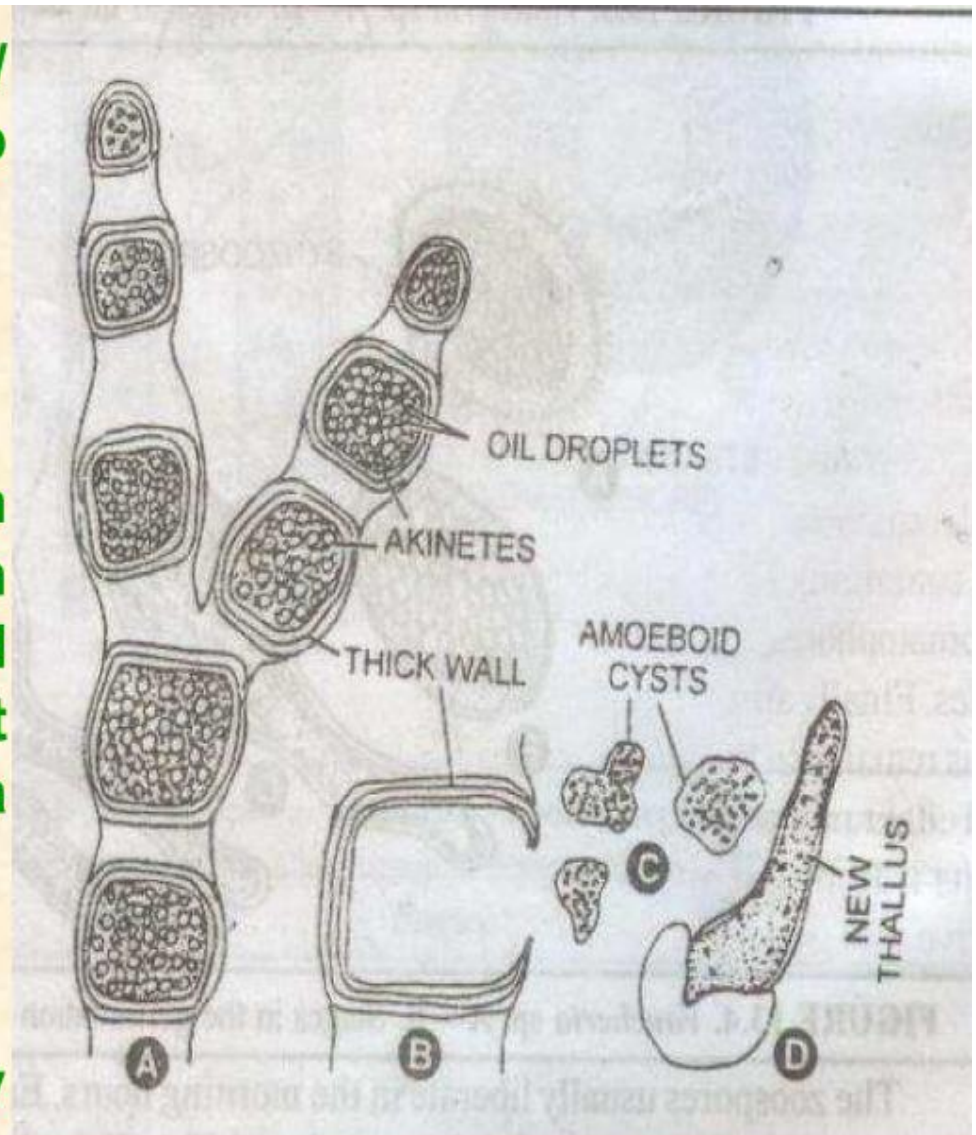


Development, liberation & germination of synzoospores

Akinetes / cysts /
hypnospores (develop
under adverse conditions)
Are short, thick walled,
gelatinous

Akinetes are produced in
dichotomous branches in
rows, this stage is called
Gongrosira stage because it
resembles a green alga
Gongrosira.

With return of favorable
conditions, akinetes directly
forms new plants



A: Gongrosira stage

A-D: Development & germination
of synzoospores

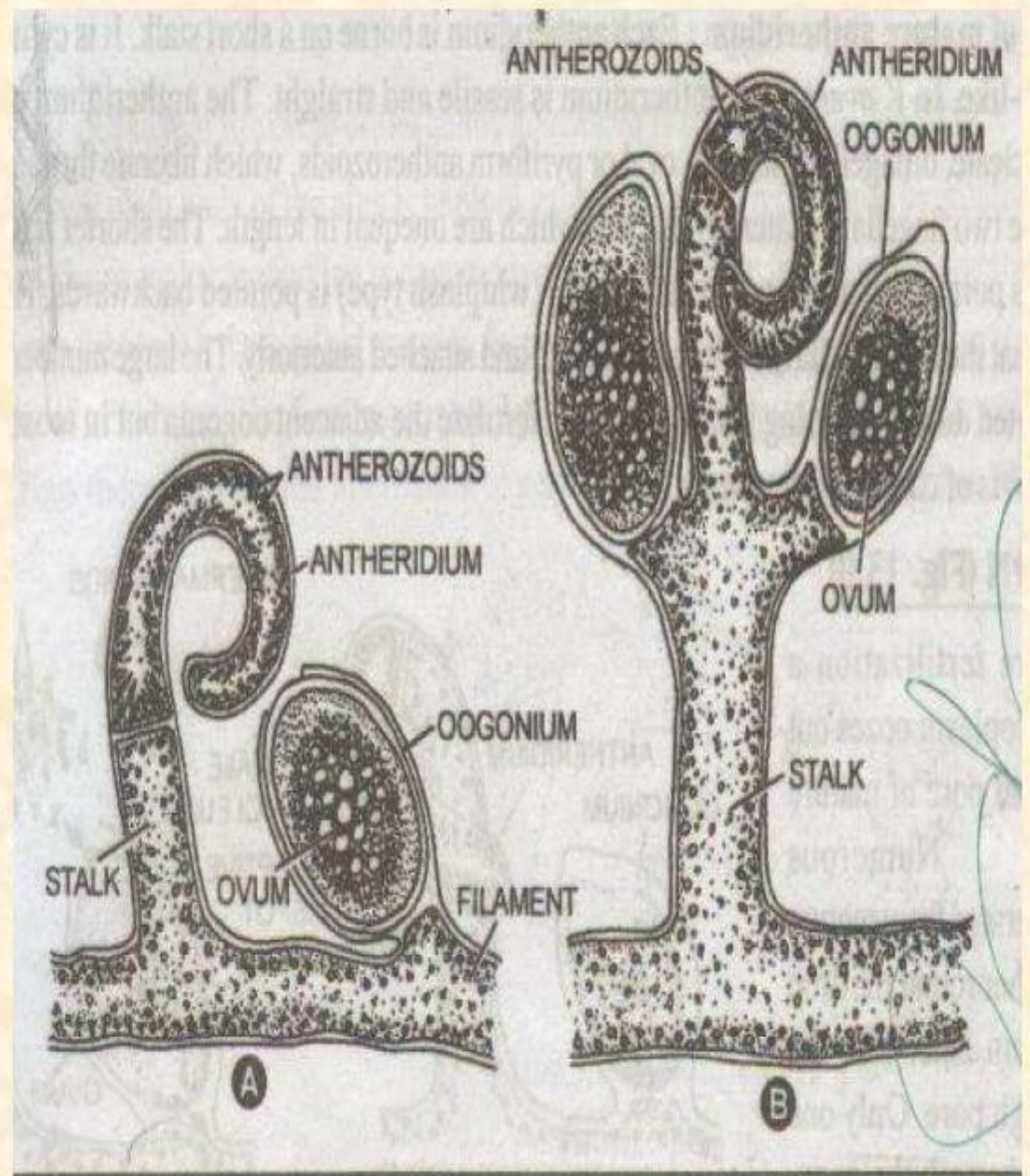
Sexual reproduction (oogamous)

Male sex organs: Antheridia
(slender, hook-shaped)

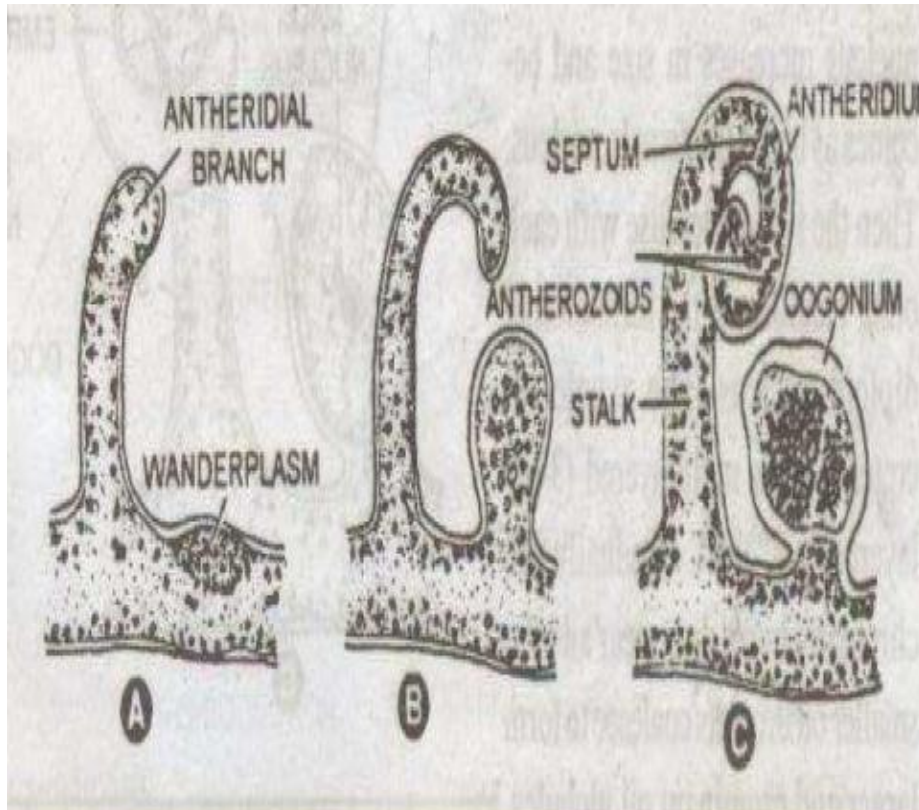
Female sex organs: Oogonia
(spherical)

Position of sex organs

1. Sessile type: Sex organs are formed on main filament. The male & female sex organs are produced on branches close to each other and are sessile.
2. Geminata type: Sex organs are formed on special branches. These branches are short and bear terminal antheridium and lateral group of oogonia.

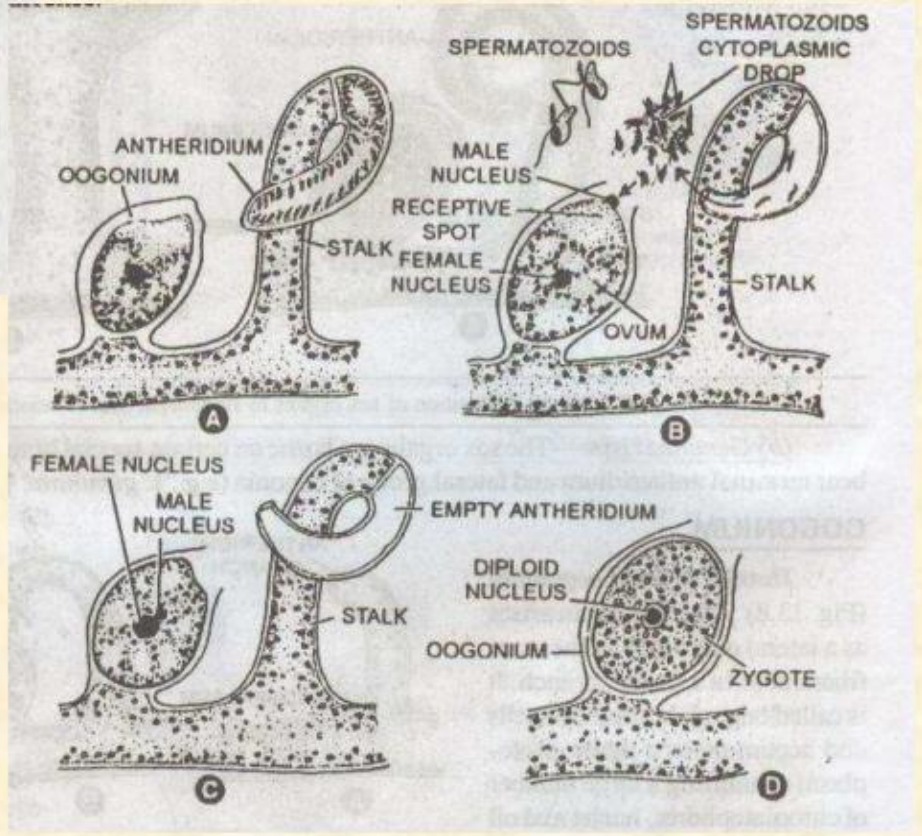


Sex organs in *Vaucheria sessile* (A)
& *V. geminata* (B)



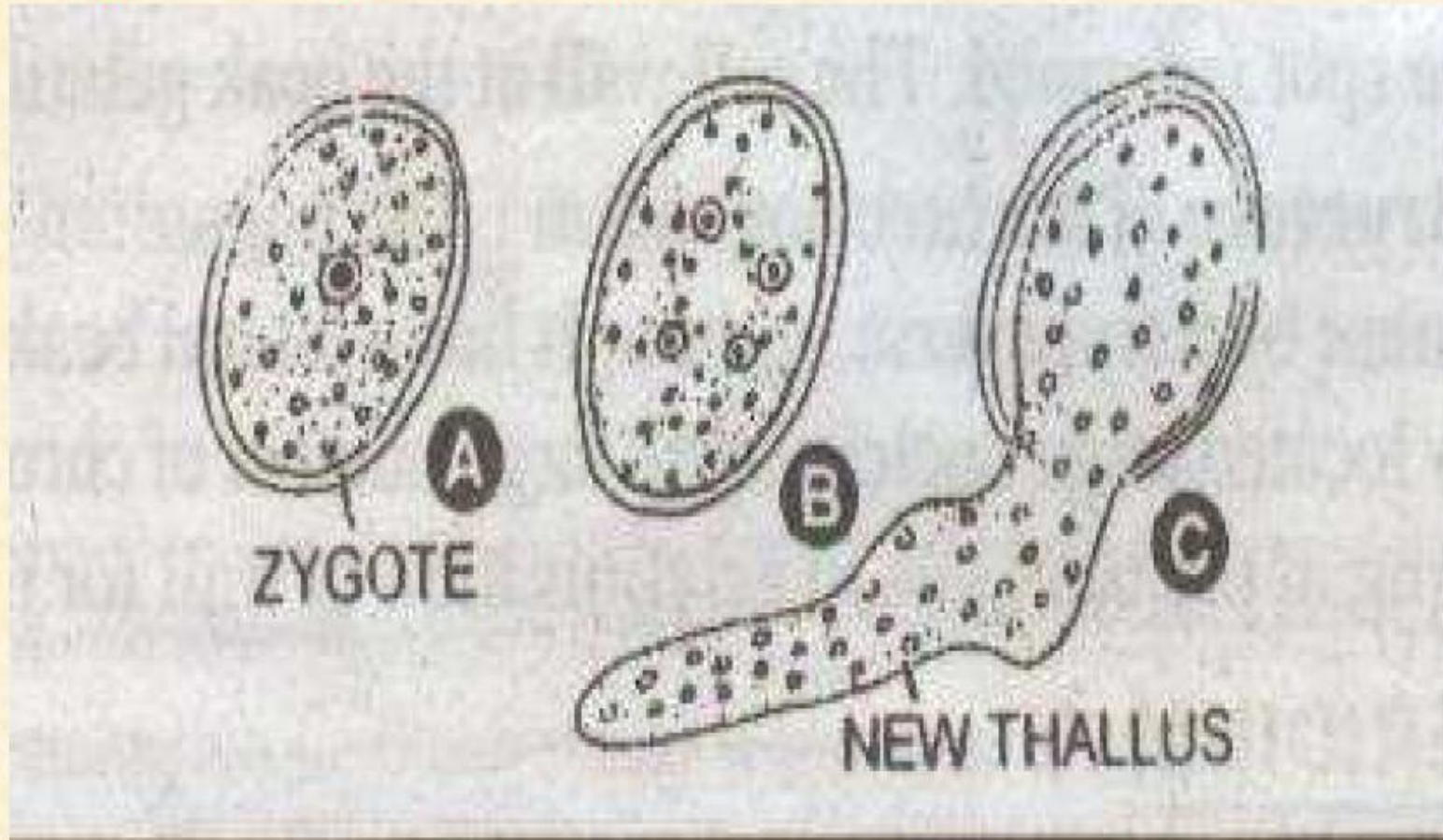
Stages in development of sex organs

- A: Mature sex organs**
- B: Liberation of antherozoids and fertilization**
- C: Fusion of male and female nuclei**
- D: Zygote**



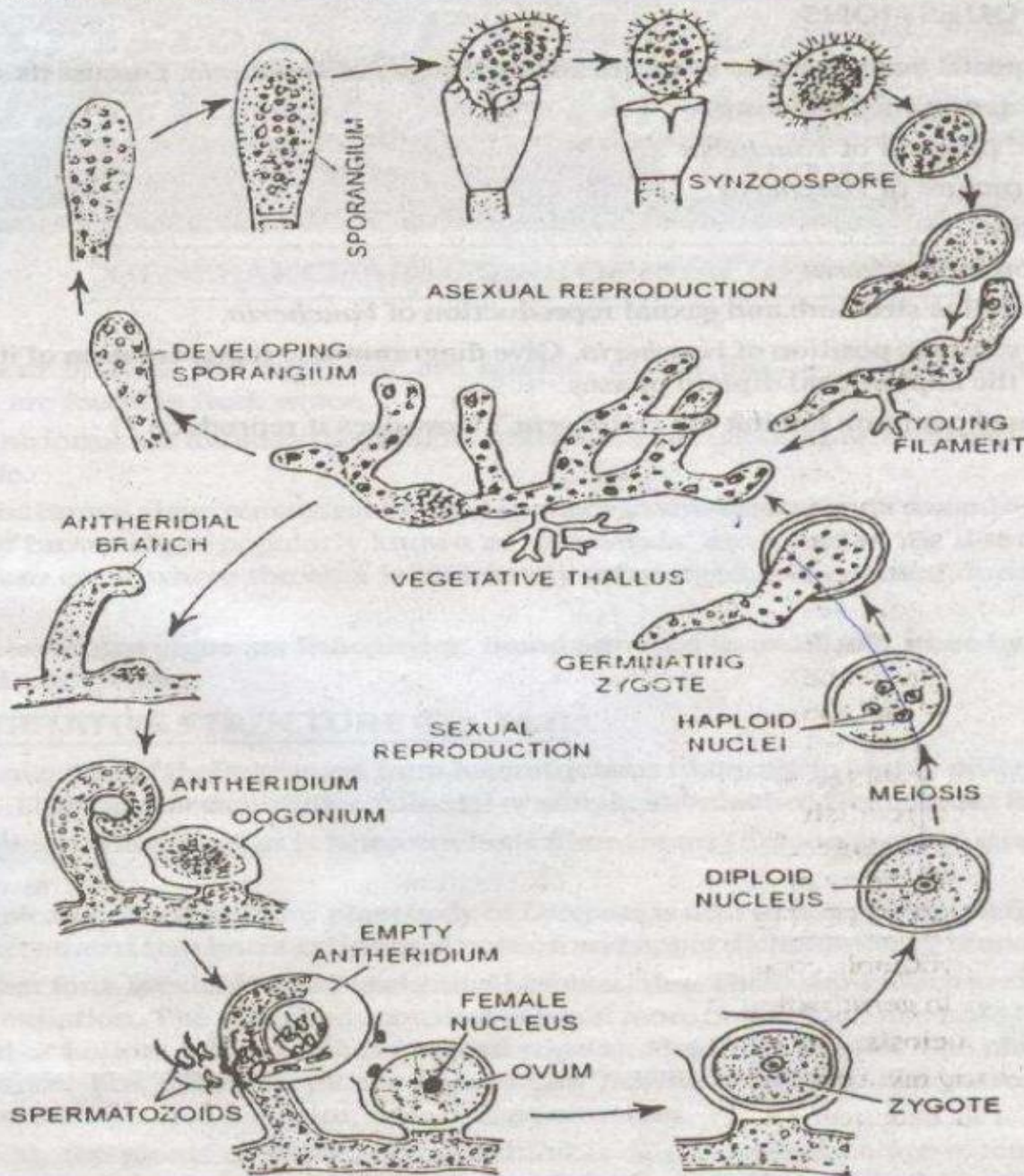
Fertilization

After the non-motile egg is fertilized by a biflagellate sperm, the zygote may enter a resting phase for several weeks before germinating into a new plant.

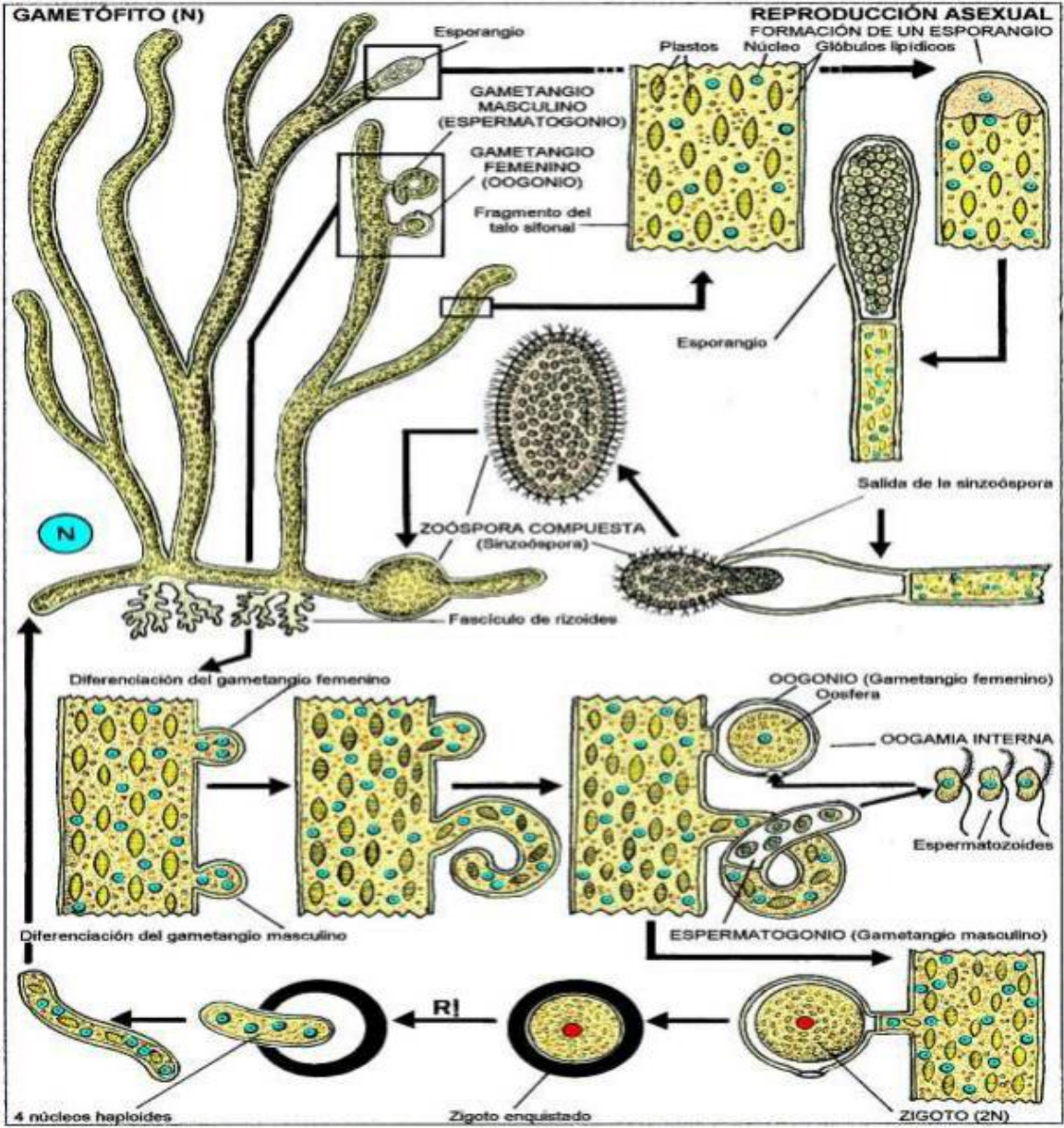


Germination of zygote

Life cycle of *Vaucheria*



CICLO DE *VAUCHERIA SESSILIS* (Xantoficeas)
MONOGENÉTICO HAPLOFÁSICO. ORGANISMO HAPLOBIÓNTICO



THANK YOU