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Class : Deg. I (Hons.)

Paper : I (Group: A)

Chapter : Chlorophyceae (Chara)

Topic : Chara

Lecture No. - 21

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### Chara : characteristic features

#### Classification :

Class : Chlorophyceae

Order : Charales

Family : Characeae

Genus : Chara

#### Special features of Chara

- The thallus shows an elaborate vegetative organisation.
- Main axis of plant body and its branches are differentiated into a series of nodes and internodes. From the nodes arises whorls, primary laterals of limited growth. The primary laterals may bear secondary laterals.
- In the axils of the primary laterals arises the branches of unlimited growth.

- Asexual reproduction by means of special asexual spores is unknown.
- Sexual reproduction is Oogamous.  
The sex organs are large and highly specialised and complicated in structure.
- The orange or red antheridia and the oval Oogonia lie in pairs. The oogonium always lies above the antheridia at the upper nodes of the short primary laterals.
- The ~~oval~~ oval oogonium is surrounded by a protective sheath. It consists of five long spirally wound cells ending in a five celled corona.
- The oogonium produces a single large uni-nucleate egg.
- The antheridium consists of a wall composed of eight long, curved, plate-like cells, the shield cells.  
The shield cells enclose an internal cavity. From the middle of each shield cells arises a rod like manubrium.
- It bears at its inner end capitula cells,  
ending in long, whip-like, branched or unbranched spermatogenous filaments.  
The latter fill the antheridial cavity with a dense tangle.

- Each spermatogenous filament consists of 5 to 200 short discoid spermatocyte cells.
  - Each spermatocyte mother cell gives rise to a single bi-flagellate sperm.
  - The zygote or the oospore germinates after a resting period.
  - Of the first two divisions of the zygote nucleus, one is reductional. Hence, zygote is the only diploid structure in the life-cycle.
  - On germination it produces the haploid protonema from which the chara plant arises as a lateral growth.
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