

of five long cells. These cells move spirally in a clock wise direction forming a flask shaped structure around the oogonium. This sheath / jacket is protective in nature.

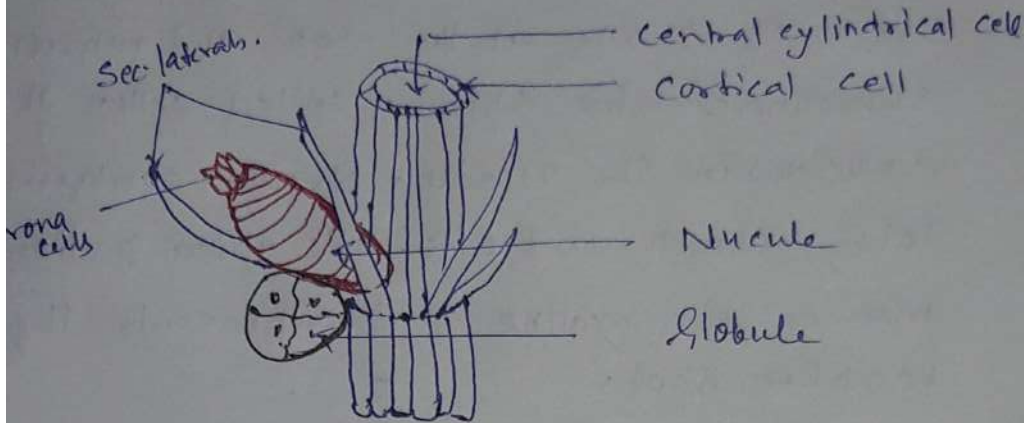


Fig. Chara spp. :- A portion of the branch of limited growth showing Nucleole & Globule.

* Development of Nucleole :-

The adaxial cell of the globule acts as nucleole initial. It divides by two transverse division so that a row of 3 cells ^{is} ~~are~~ formed. Out of these three the terminal cell behaves as oogonial mother cell which finally divides to form a stalk cell and an oogonium. The middle cell divides vertically and gives rise to five peripheral lateral cells. These five cells divide transversely forming five tube cells ^{below} and five corona cells above. The tube cells enlarges with developing oogonium so that five corona cells reached at the top of the oogonium.

(98)

and form crown of the nucleolus. On the other hand oogonium rotates so that the fibre tube cells coil in a clock wise fashion.

In this way a mature nucleolus possesses a crown of 5 cells at the top and remains surrounded by spirally coiled cells. It has a nucleus in the middle. Nucleolus contains a lot of starch and oils. Its apical portion is more or less hyaline and represents the receptive spot.

(ii) Structure and Dev. of Globule:-

Mature globule is spherical in shape and yellow to red in colour. Each globule consists of eight curved plates known as shield cells.

From each the inner side of each shield cell, a rod shaped structure called manubrium develops. At the distal end of each manubrium one or more globose cells develop which are called primary capitula. Each primary capitulum develops two or more secondary capitula.

From each ^{antheridial} secondary capitulum, 2-4 long filaments develop. Each antheridial filament has 25-250 cells which finally develop into uninucleate, coiled and biflagellate antherozoid. In this way 20,000-50,000 antherozoids develop in a single globule.

ONLINE STUDY MATERIAL (e-content).

05

Name of the College: S.S. college, Jehanabad

Date: 11.09.2026

Name of the Dept: Botany

Time: 11.00 - 12.00

Subject: Algae

Name of the Teacher: Dr. S.S. Sharma

Topic: Chara

Class: B.Sc (Bot) H. - P1

Method of Teaching: WhatsApp and College Web sites

Biotechnology - Sub. - P1

CHARA: REPRODUCTION

Chara reproduces both by vegetative and sexual methods. Details are as follows -

(A) Vegetative Reproduction :-

Vegetative reproduction takes place by -

(i) Bulbils - They are small, oval or spherical bodies developed on ~~stem~~ ^{rhizoid} or stem nodes. For example, in C. baltica bulbils develop on node of stem while in C. aspera on ~~stem~~ rhizoid. The bulbils on detachment germinate and form new plant.

(ii) Apospous bulbils :-

These are small cells found in group at the node (lower) of the main axis (e.g. C. delicatula) or on rhizoids e.g. C. baltica & C. fragifera. These are perennating bodies and after the death of main plant form new chara plant.

(iii) Amylum stars :

e.g. C. stelligera,

In some species, multicellular star

shaped aggregation of cells develop at the nodal cells of the basal region. These are densely filled with amyllum starch. This is why they are called

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