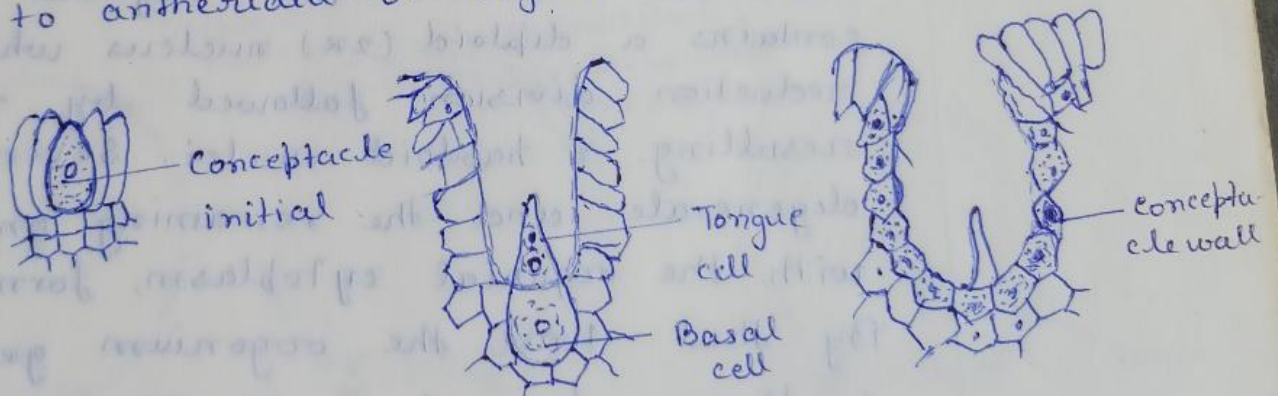


Conceptacle of Saragassum / Sex organ of Saragassum

A conceptacle develops from a single, superficial flask-shaped cell called initial cell. It is distinguished by its large size, prominent nucleus, dense cytoplasm. Its rate of growth and cell division slow down in comparison with those of neighbouring cells. It divides by a transverse division into two unequal cells - an upper tongue cell may develop into a hair or degenerate. The basal cell sinks down due to overgrowth of adjoining cells. The basal cell, by a series of vertical divisions, gives rise to a layer of chromatophore-containing cells which line the floor of the cavity. These cells undergo one or two transverse divisions and form 2-3 layers of which the superficial layer is always fertile giving rise to antheridia or oogonia or both.

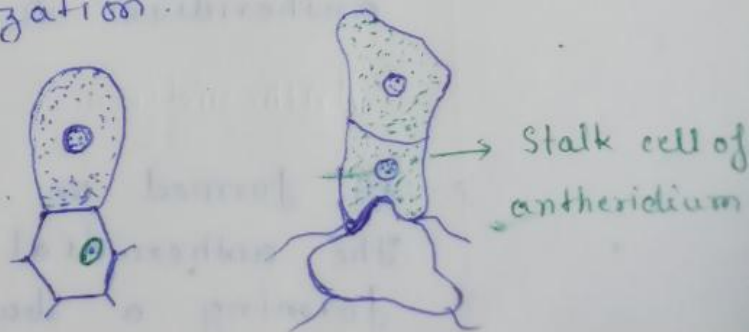


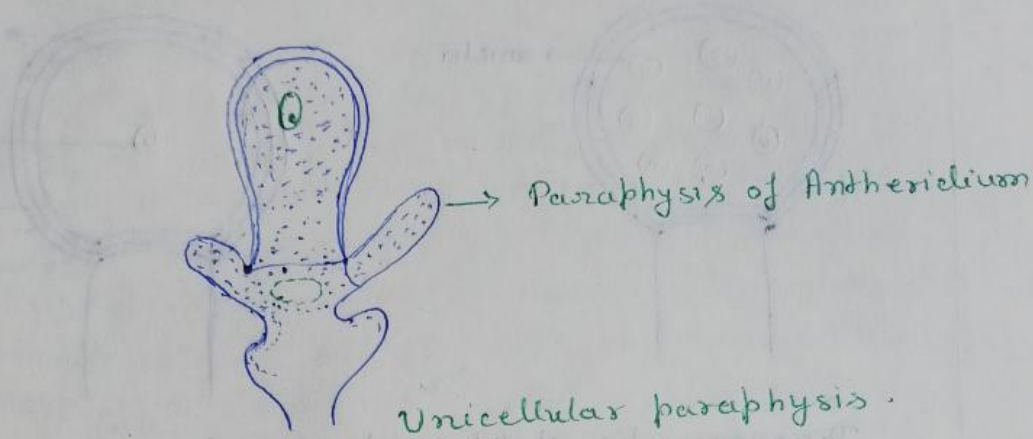
Saragassum bears fertile as well as sterile conceptacles. The fertile conceptacle contains sex organs antheridium & oogonium.

Antheridium → Antheridium the male sex-organ is formed on the inner wall of male conceptacle. The antheridial initial divides by a cross wall forming a basal stalk cell and upper antheridial

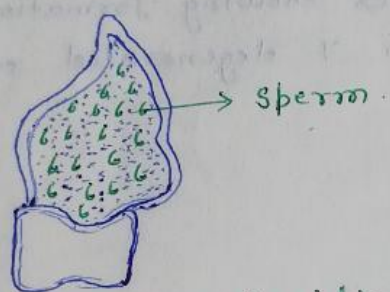
cell. The antheridial cell forms antheridium and the stalk cell actually forms a fertile paraphysis which grows upward pushing the apical antheridial cell one side. Thus the antheridium may become lateral in position. The basal cell may produce another antheridium in the same way. In this way a branched paraphysis with two terminal antheridia is formed. Each antheridium contains a single diploid ($2x$) nucleus which divides meiotically to form four haploid (x) nuclei. The haploid nuclei again divide by four consecutive mitotic divisions resulting 64 nuclei. Each nucleus metamorphoses into an uninucleate phototactic antherozoid bearing two lateral flagella of unequal length. The antheridial wall is only two layered.

Oogonium \rightarrow Superficial cells which start functioning as oogonial mother cells divide into a lower stalk cell and an upper oogonial cell. The oogonium contains a diploid ($2x$) nucleus which divides by reduction division followed by mitotic division resulting 8 haploid nuclei. Seven of these nuclei degenerate and the remaining one nucleus, along with the oogonial cytoplasm, forms a single nucleus. By that time, the oogonium gets enclosed with a three layered wall. The outer wall is exochite, the middle wall is mesochite and the inner wall is endochite. The oogonium gets liberated before fertilization.

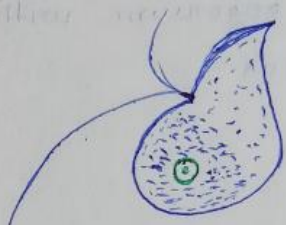




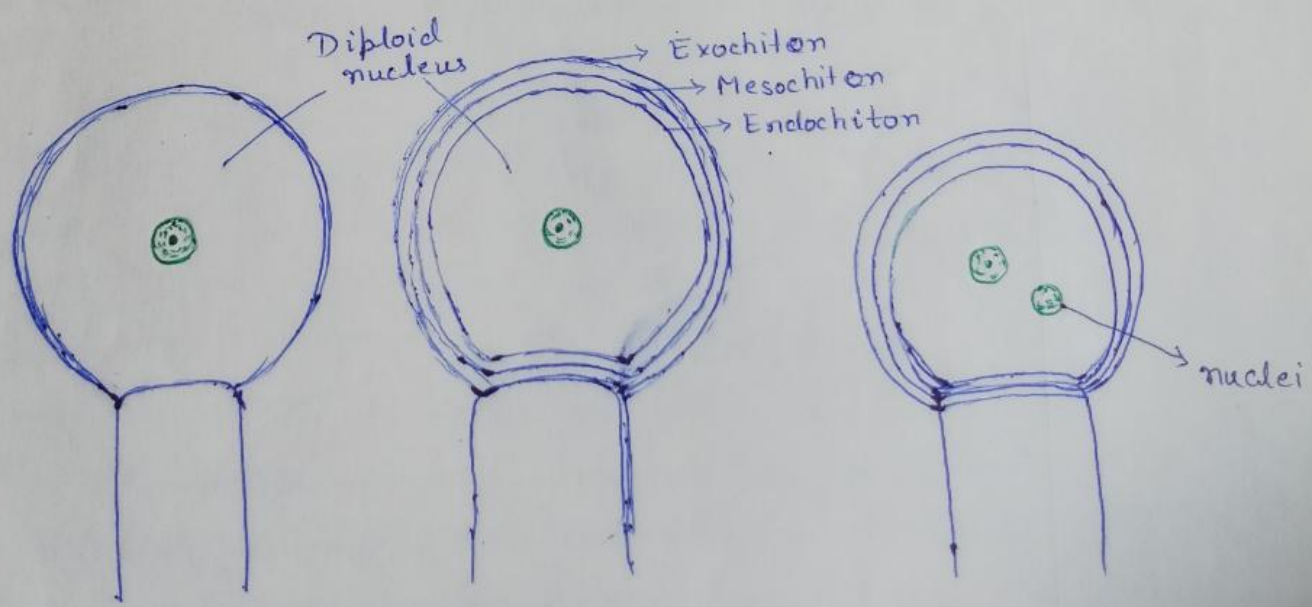
Unicellular paraphysis.

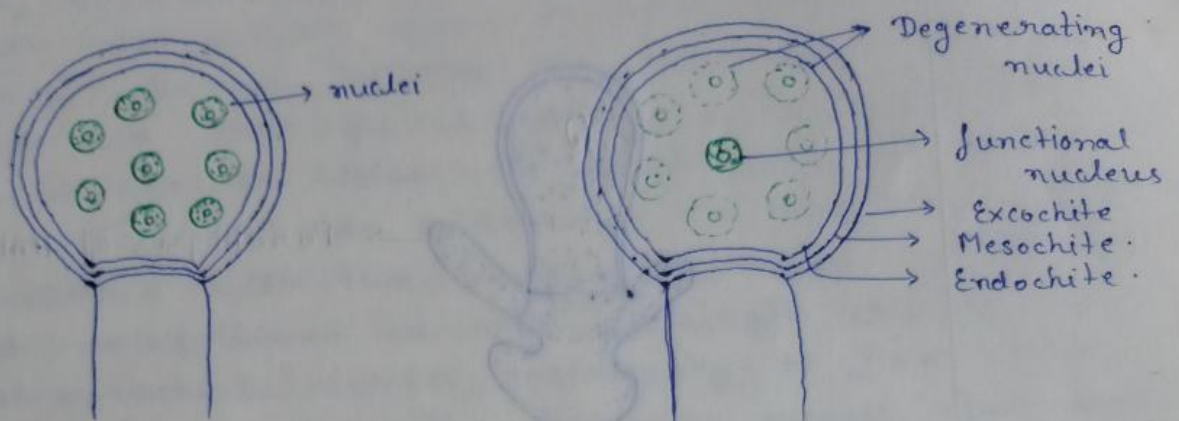


A Mature antheridium with sperm.



A Single anthozooid.





Diagrammatic sketches showing formation of eight nuclei and oogonium with 7 degenerated and only functional nucleus.

