Reproduction → It takes place by two methods like

1. **Vegetative Reproduction** → Some free floating species like S. natan (Collins 1917) and others reproduces by means of fragmentation of the thallus and each fragment germinate and develop into a new thallus.

2. **Sexual Reproduction** → Some species are dioecious while some are monoecious. The plants bears special fertile reproductive organs or receptacle that bears Antheridia and Oogonia

which is Oogamous in reproduction. The ferti conceptacles are known as receptacle and th sterile conceptacles are known as cryptoblasts. conceptacles are found at the apical parts lateral branch only.

Structure and Development of Conceptacle →

The single initial cell is not responcable for t Development of a conceptacle - (Bower 1880, Wienbu etc. A conceptacle start its development from a superficial cell which later on becomes flask sha It can be differenciated from the rest of the c by its bigger sizes and prominant nucleus. It s divides transversely into an upper tongue cell a a basal cell. The tongue cell divides again a again but finally disapears. The basal cell div verticaly again and again and forms the base of the conceptacle. The fertile conceptacle cell giv rise to male (Antheridia) and female (Oogonia reproductive organ for reproduction. Both Anth -dia and Oogonia are different though both are found in same conceptacles bear many branched hair like structure known as paraphy and each conceptacle opens by Ostiole where colourless parabysis is present.

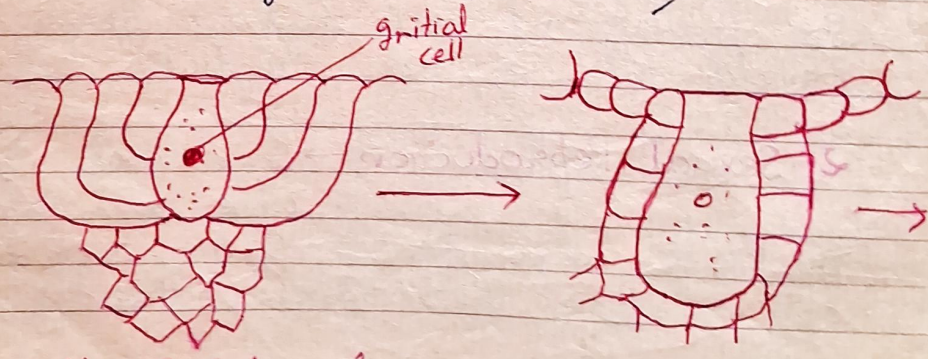

Fig - Initial Cell of Lateral branch (Leaf) or Receptacle

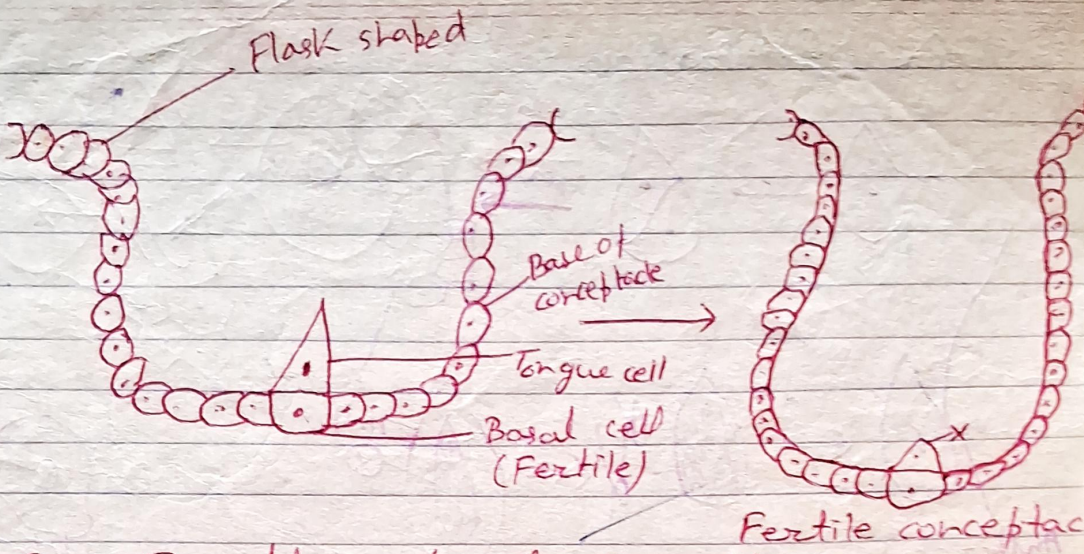

Fig - Development of Conceptacle

Development of Antheridia → According to Rao (19
a cell of the ma
conceptacle first develops a papilla like structure.
This divides transversely into two, where lower ce
forms the wall of the conceptacle and upper
again divides transversely of this two cell uppe
one is known as Antheridial cell and lowe
one is known as stalk shaped. Some paraphy
also develops from the stalk cell. Many Antheri
are present inside a male conceptacle.

The Antheridium in the ea
stages has diploid in nature. But after som
time it divides mioticaly and forms 4 to 6
haploid nucleus. Now two unequal cilia develo
laterally on these pear shaped bodies, which a
called Antherozoids. The number of Antherozo
in S. tennerimum and S. harneri is 64 (Rao 194
After the formation of Antherozoids the An
-idium separates from the stalk by water cus
and floats on the water surface. The Antherozo
are liberated to the outside by the ruptur
of the Antherozoidal wall and in ready

for fertilization.

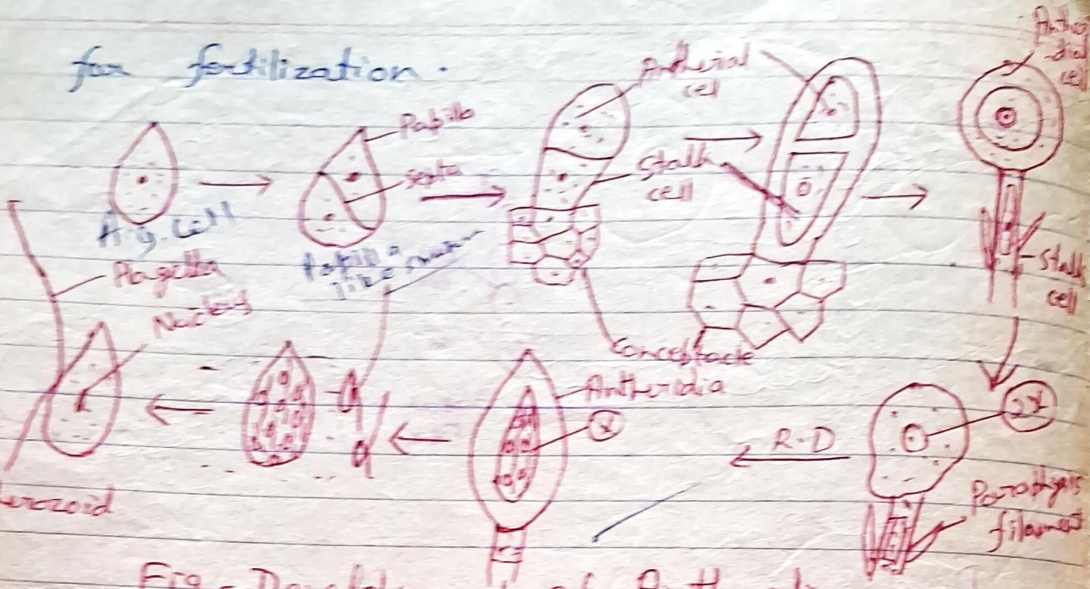

Fig - Development of Antheridia

Development of Oogonia → Any cell of the conceptacle give rise to an Oogonial initial cell. Very soon it divides transversely of which upper one is known as Oogonium and lower one is known as stalk cell. In young stage Oogonium has a single diploid nucleus and is surrounded by three walls known as Exochite, Mesochite and Endochite. After maturity the exochite rupture mesochite form mucilage sheath and endochite forms the wall of the oogonium. Then diploid nucleus of Oogonium divides miotically inside the conceptacle. But According to Rao (1946) nuclear division does not takes place. While Oogonia are present inside the conceptacle Lastly in any case 8 nuclei are form of which 7 degenerate and only one functional. But according to Rao (1946) all the 8 nuclei are functional. But as soon as 1 gets fertilized and 7 degenerate. In this way in any case only one egg cell is

produced in the Oogonium. According to Tohara (1931) due to different pressure of th cells oogonia liberate from the conceptacle on the water and it ready for fertilization

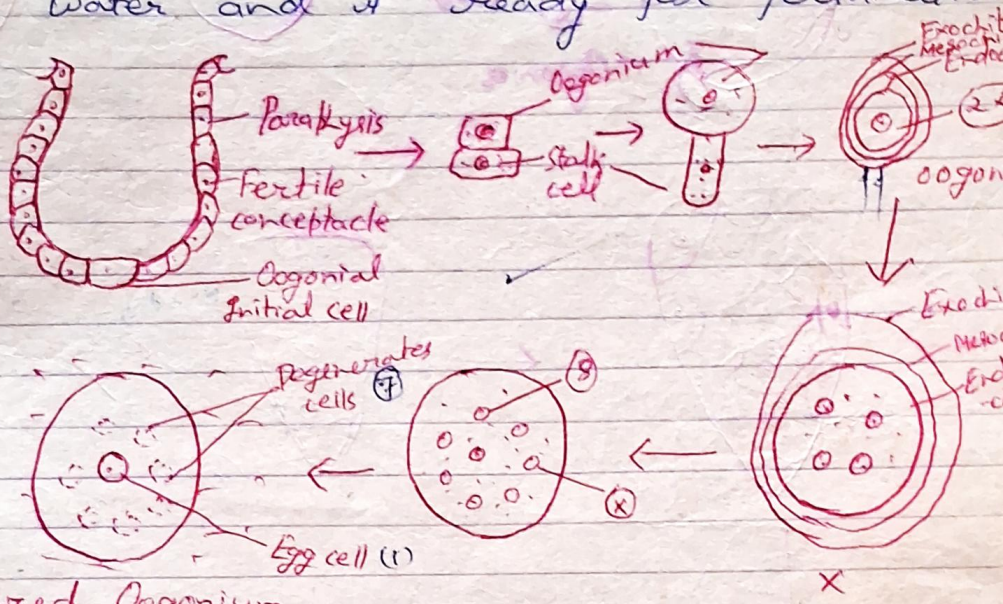

Fig – Development of Oogonium of Sargassum

Fertilization → When Oogonia swims on the water. Many Antherozoids co and surrounded the oogonial wall and on one of them Antherozoid fuse with the egg nucleus and forms zygote. Which is diploid in nature. After some time the zygote divi transversely into two of which upper on forms spherical structure. While the lower becomes elongated which forms rhizoids. Th spherical structure undergoes many anticlin and periclinal cell division. And finally give rise to new ~~diploi~~ thallus of Sargassum. Which is diploid in nature sporophytic.

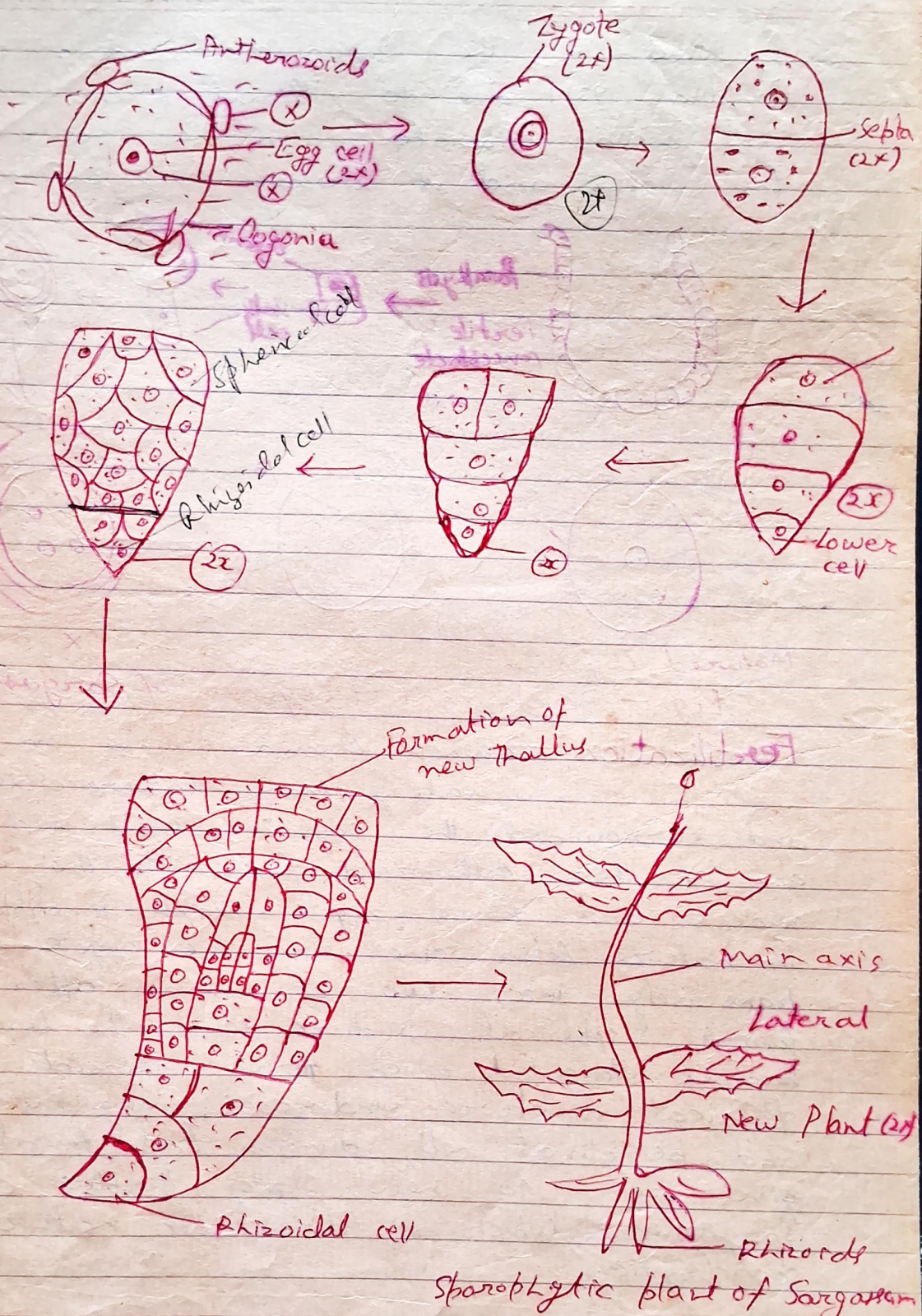

Fig - Development of zygote and Germination of New Plant of Sargassum