

## (B). Female inflorescence (strobilus):

The female strobilus is similar to the male strobilus. Except that 1 to 10 female flower or ovules are found above each collar. Female strobilus has an axis in collar, in the axils of which arise 3-10 ovules or ovule.

The ovule consist of a central parenchymatous nucellus surrounded by 3 integument. The outer one is called perianth and innermost is extended beyond the others as micropylar tube. It is fused in the basal region of nucellus.

Microsporangia produce haploid microspore after reduction division. The ovule produces megaspore mother cell.



## Gametophytic Phase :-

At In male gametophytic microspore is the first cell of male gametophyte. Before liberation of microspore from microsporangium, each microspore divided into small Prothallial cell and a large cell and finally large cell divides into a tube <sup>nucleus</sup> nucellus and a generative cell. Polarization takes place at this 3 called stage. The tip of the microcytal tube oozes a drop of sweet fluid which microspore are carried. The microspore germinate in the shallow pollen chamber and the Pollen tube grows into the nucellus. The Spermatozeugous cell gives rise to a pair of sperm nuclei which become distinct cytoplasmic sheath.



## B). Female gametophyte .

The germination of the megaspore begins with 3 nuclear stage, but the micropylar end of the gametophyte remain at this condition for the time of fertilization.

The ovule two to three megaspore mother cell may <sup>divide</sup> by free nuclear division and form 16 nuclear stage. A free nucleus



Organises some cytoplasm about it and carriage on the junction of an egg.

## Fertilization:

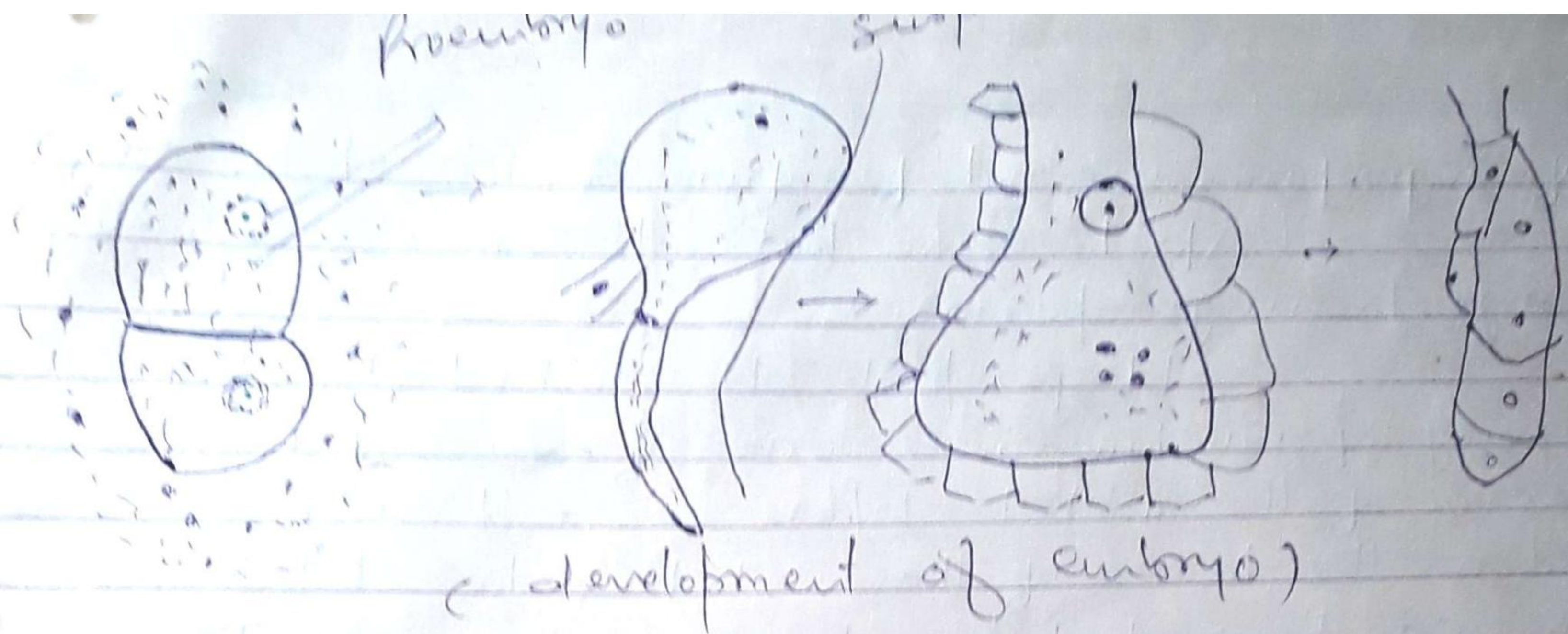
The process of fertilization is not properly understood. The pollenation is an anemophilous and it is affected by drop mechanism. The pollen grains are drawn inside the ovule through micropyle. Several pollen tubes fertilise the egg nuclei. Thus several zygotes are formed.



## Embryogeny (Sporophyte) :-

Each Zygote divides to form two primary suspensor tubes or proembryonal tubes. These tubes elongate, coil among each other and branch profusely. The tip of these tubes produce sec. suspensors. The sec. suspensors terminate into embryo. Pro. primary suspensor tube. The seeds are spread usually at this stage. Polyembryony is exhibited. But only one embryo reaches maturity in each seed. Embryo produces lateral finger-like process called feeder. It is embedded in the seed. Cotyledons are orange pink coloured in maturity.





- Its resembles with angiosperm. In following point *Gnetum* resemble with Angiosperms.
- 1) General habit of sporophytic plant.
  - 2) Leaves are broad with reticulate venation and arranged in opposite decussate manner.
  - 3) Wood consists of vessels.
  - 4) Perianth-like envelopes are present in flower.
  - 5) Female gametophyte intertrasporic.
  - 6) Archegonia are absent.
  - 7) Five nuclear division is absent in embryology.
  - 8) Embryo consists of two cotyledons.