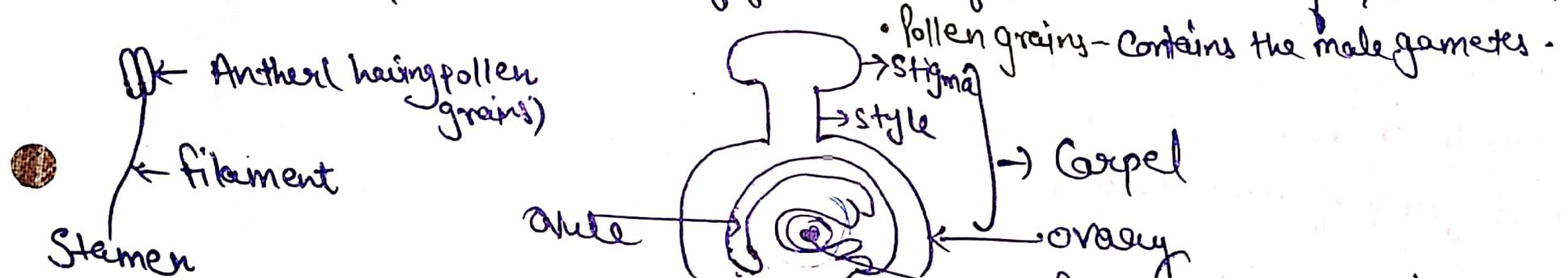


Sexual Reproduction in Plants: The process of sexual reproduction in

- plants involves the development of a new organism through the formation of male and female gametes either by same or different plants.

Main parts of a flower - Receptacle, Sepals, Petals (grp. of petals - corolla),
Stamen, Carpel.
↓
attract the insects for pollination and protect the reproductive organs.

Stamen - (male reproductive ^(organ) part of flower). A flower has a no. of stamen in it.

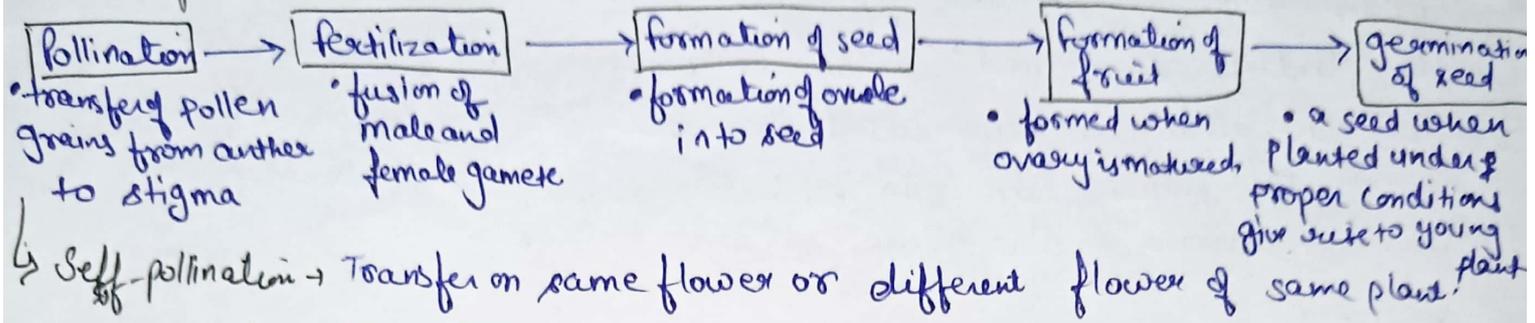


Carpel - (female reproductive organ of flower). female gamete (egg).

Also known as pistil.

- The flowers which contain only one sex organ (either stamen or carpel) are unisexual flowers. eg- Papaya, Watermelon.
- The flowers which contain both carpel as well as pistil are bisexual flowers. eg- Hibiscus, Mustard plants.

Process of Sexual Reproduction -



Self-pollination → Transfer on same flower or different flower of same plant.
 Cross-pollination → Transfer to different plant of same species.
 → Agents of pollination - Wind, Water and animals (insects, birds, bats)

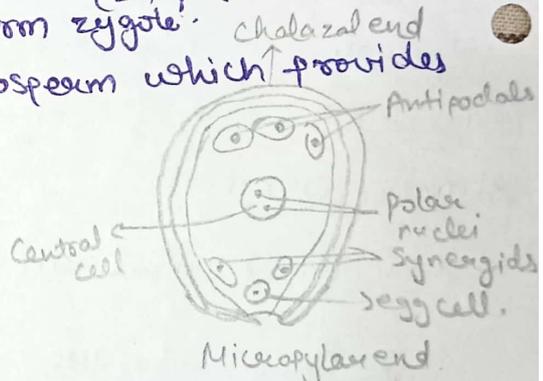
Fertilization (Pollen-tutil Interaction):

When a pollen grains falls on stigma (which is sticky), it bursts open and grows a pollen tube (due to chemical interaction b/w pollen & stigma) downwards through the style towards the female gamete in ovary. Through which male gamete moves down and the pollen tube enters the ovule in ovary. The tip of male gamete bursts open and it meets the female gamete (egg) to form a zygote which further divides to form an embryo.

Note - When the pollen reaches the embryo sac or ovule, the nucleus of pollen grain divides on its way to form two male gametes. (2n) → (fertilisation called syngamy)
 → one male gamete fuses with female gamete to form zygote.
 → 2nd gamete fuses with another cell to form endosperm which provides nutrition to embryo.

Double fertilisation:

→ The fusion of two polar nuclei and male gamete is called triple fusion.
 → The fusion of male gamete and female gamete is called syngamy.
 → These two fusions collectively known as double fertilization.



Post fertilisation events: After fertilisation, embryo divides mitotically to form multicellular embryo. The endosperm nucleus divides to form a mass of endosperm cells to provide nutrition to developing embryo. The ovary is transformed into a fruit and ovules into the seeds. The other parts of flowers dry up and fall off.

→ The fruit protects the seed. The seed is the final product of sexual reproduction. Seed comprises of seed coat, cotyledon and embryonal axis.
 (seed) is the reproductive unit of the plant.

• The seed contains a baby plant (embryo) and food for it but in the dormant state. When it gets suitable conditions like water, air and warmth etc.; it germinates to form a new plant. (4)

→ The part that grows into shoot known as plumule and the part with roots is known as radicle.

Germination of seeds - The beginning of the growth of seeds when it gets suitable conditions is called germination of seeds.