9-FLOWER-2

(GYNOECIUM, AND PERIANTH-GINOECIAL POSITION)

3. GYNOECIUM

The gynoecium refers to all female organs of a flower. The unit of the gynoecium is the carpel, defined as a modified, typically conduplicate megasporophyll. The carpel is one of the major features that make angiosperms unique within the seed plants.

Fusion of carpels is a very important systematic character. An "apocarpous gynoecial" fusion is one in which the carpels are distinct. An apocarpous gynoecium is generally thought to be the "ancestral condition" in the angiosperms.

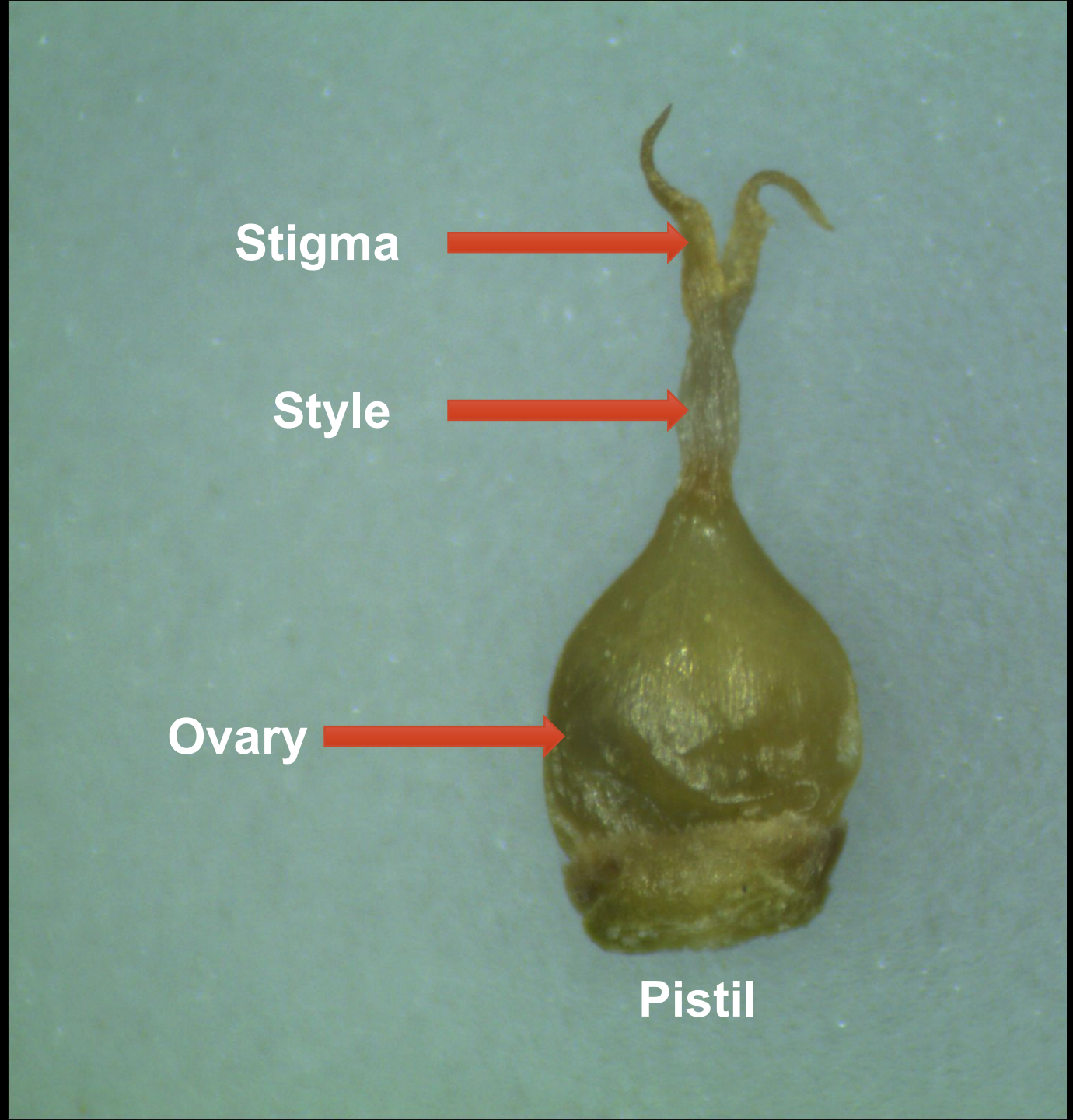
In contrast, a "syncarpous gynoecial" fusion is one in which carpels are connate and is the most common type in flowering plants.

Each part of gynoecium is called “pistil”. The pistil consists of three parts, “stigmas”, “styles” and “ovarium”.

A stigma is the pollen-receptive portion of the pistil. Stigmas may be discrete structures or they may be a region of a style or style branch.

A style is a generally stalklike, non-ovule-bearing portion of the pistil between the stigma and ovary. Styles may be absent in some pistils.

The ovary is the part of the pistil containing the ovules. Ovaries may be simple, composed of one carpel, or compound, composed of two or more carpels.


Stigma
Style
Ovary
Pistil

Placentation Type:

Placentation refers to the positioning of the ovules and takes into account the number and position of placentae, septa, and locules.

1. Apical
2. Basal
3. Marginal
4. Parietal
5. Axillar
6. Free-Central

1. Apical Placentation

The placenta is at the apex (top) of the ovary.

2. Basal plecentation

The placenta is at the base (bottom) of the ovary.

For example, occurs in the Asteraceae and Poaceae

3. Marginal placentation:

There is only one elongated placenta on one side of the ovary, as ovules are attached at the fusion line of the carpel's margins .

For example, occurs in the Fabaceae

4. Parietal placenttaion: The placentae on the ovary walls or upon intruding partitions of a unilocular.

For example, occurs in the **Violacea**

6. Axilar placentation:

The placentae arising from the column in a compound ovary with septa.

For example, Common in many flowering plants such as the **Liliaceae.**

6. Free-central placentation:

The placentae along the column in a compound ovary without septa.

For example, occurs in the **Caryophyllaceae**

Ovule Types

The ovule is part of the make up of the female reproductive organ in seed plants.

Ovules separates into six categories based on their shapes.

1. Atropous (Orthotropous)
2. Anatropous
3. Hemi-anatropous
4. Campylotropous
5. Amphitropous
6. Circinotropous

1. Atropous (Orthotropous)

The body of the ovule is erect or straight. The hilum, chalaza and the micropyle lie in a straight line.

For example, Polygonum.

2. Anatropous

The ovules become completely inverted during development so that the micropyle lies close to the hilum.

For example, Gamopetalae members

3. Hemi-anatropous

The body of these ovules becomes at a right angle in relation to the funicle, so it looks like the ovule is lying on its side.

For example, *Ranunculus*

4. Campylotropous

The body of this type is bent and the alignment between the chalaza and micropyle is lost. The embryo sac is only slightly curved . For example, Fabaceae family

5. Amphitropous

The curvature of the ovule is very much pronounced and the embryosac also becomes curved. For example, *Allismaceae* and *Butomaceae* family.

6. Circinotropous

The nucellus and the axis are in the same line in the beginning but due to rapid growth on one side, the ovule becomes anatropous. The curvature continues further and the micropyle again points upwards. For example, *Opuntia*.

Ovary position

The position or placement of the ovary relative to the other floral parts: hypanthium, calyx, corolla, and androecium. There are three type ovary position;

1. Epigynous ovary and hypogynous flowers: It is used for sepals, petals, and stamens attached at base of a superior ovary.

2. Hypogynous ovary and Epigynous flowers: It refers to the sepals, petals, and stamens attached at apex of an inferior ovary.

For example, members of ***Rosaceae*** family

3. Perigynous ovary and Perigynous flowers:

It is used for sepals, petals, stamens and/or hypanthium attached at the middle of the ovary.

Thanks…