

The Female Reproductive Structure

Anatomy and Variations of the
Angiosperm Gynoecium

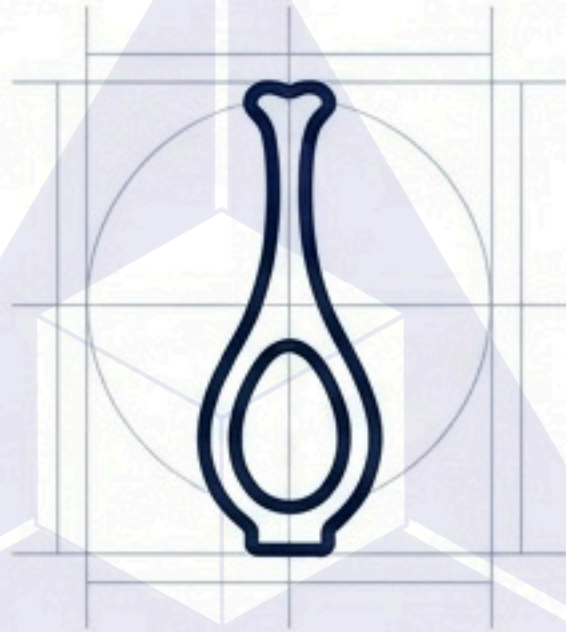
GYNOECIUM

The Master Structure

The gynoecium represents the complete female reproductive part of the flower.

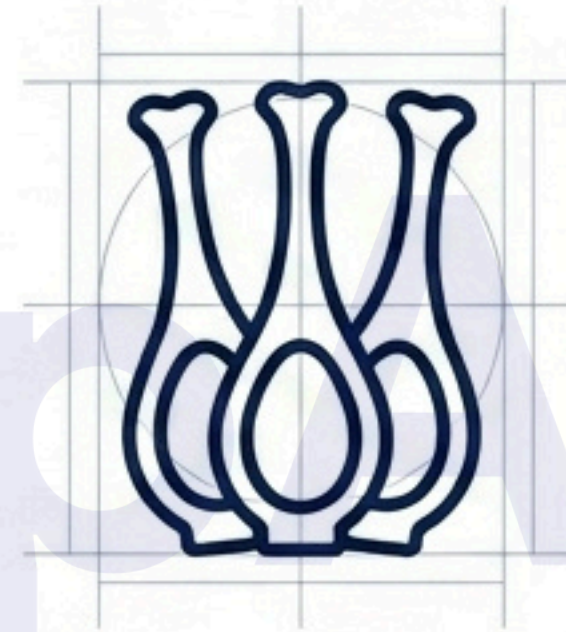
It consists of one or more fundamental floral units known as pistils (or carpels).

CARPELLARY COMPOSITION



Monocarpellary

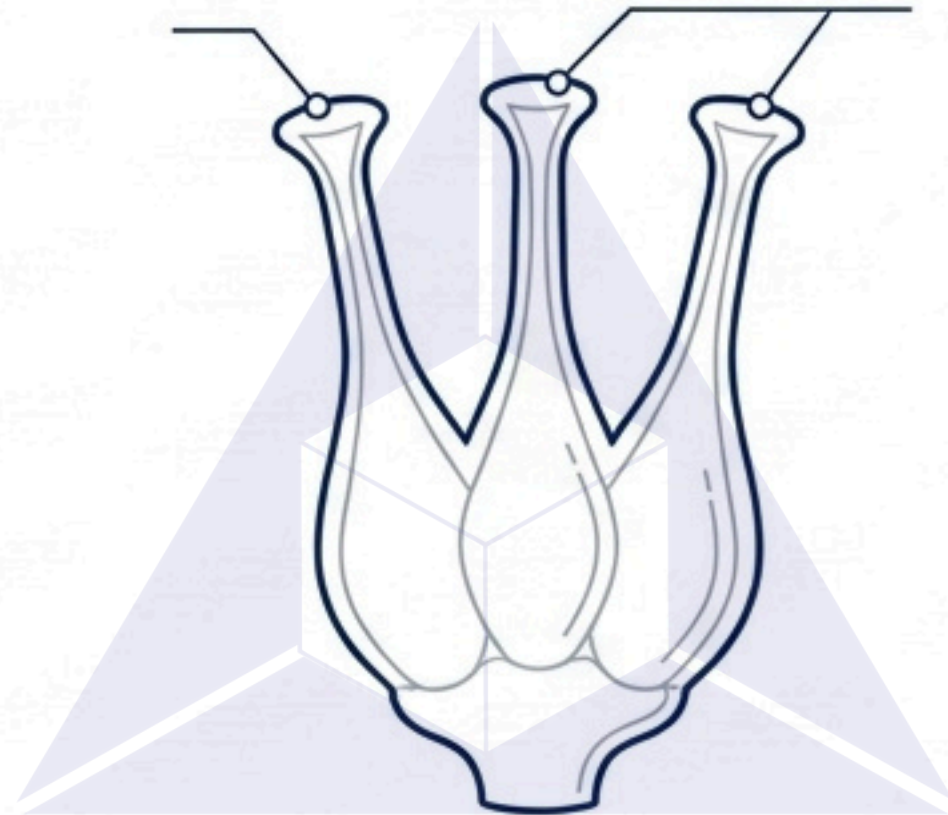
A gynoecium consisting of a single, solitary pistil.



Multicarpellary

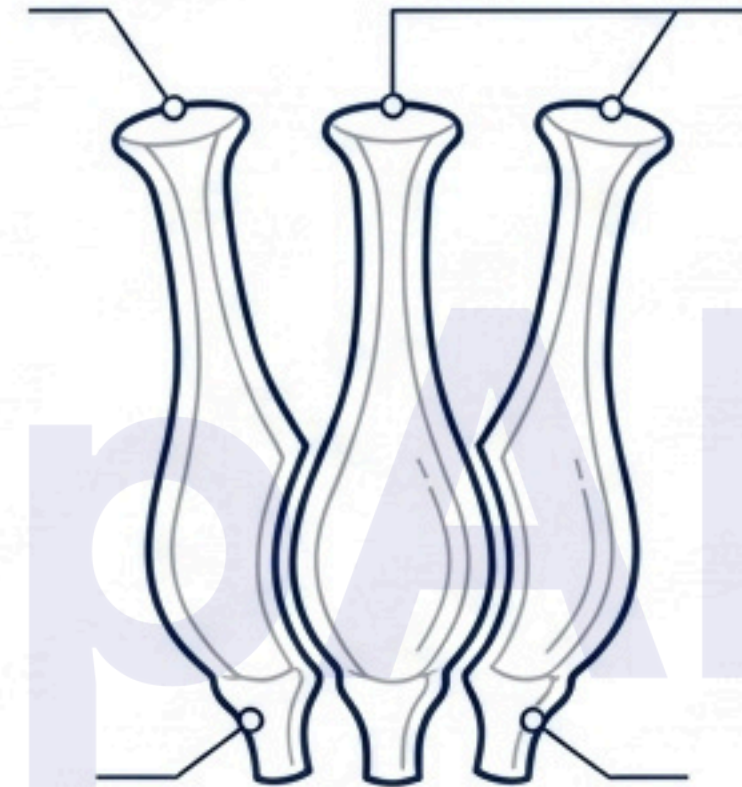
A gynoecium possessing more than one pistil.

Applies exclusively to
Multicarpellary structures



Syncarpous

The multiple pistils are fused together into a single composite structure.



Apocarpous

The multiple pistils remain completely free and distinct from one another.



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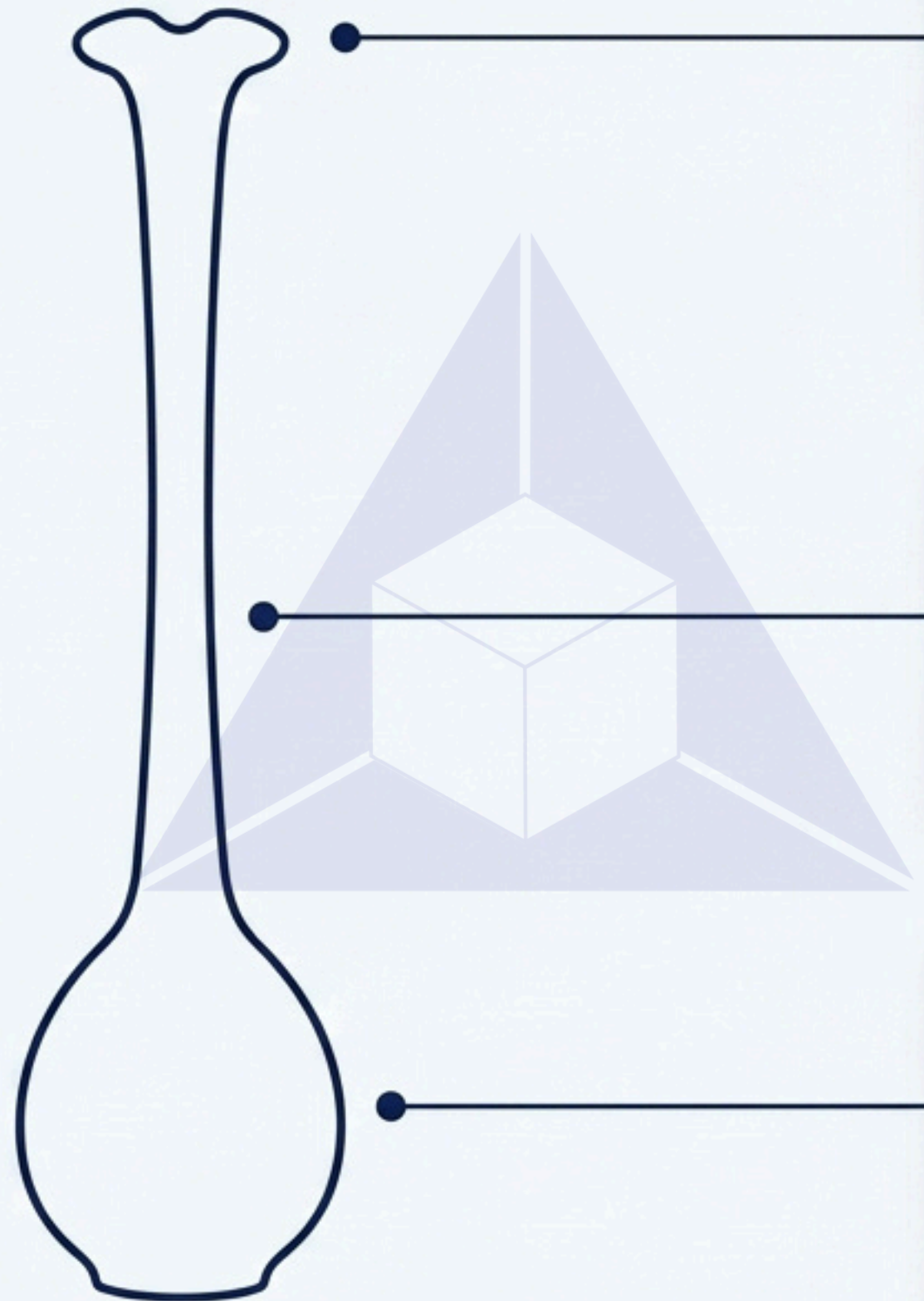


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Stigma

The landing platform for pollen grains at the uppermost tip.

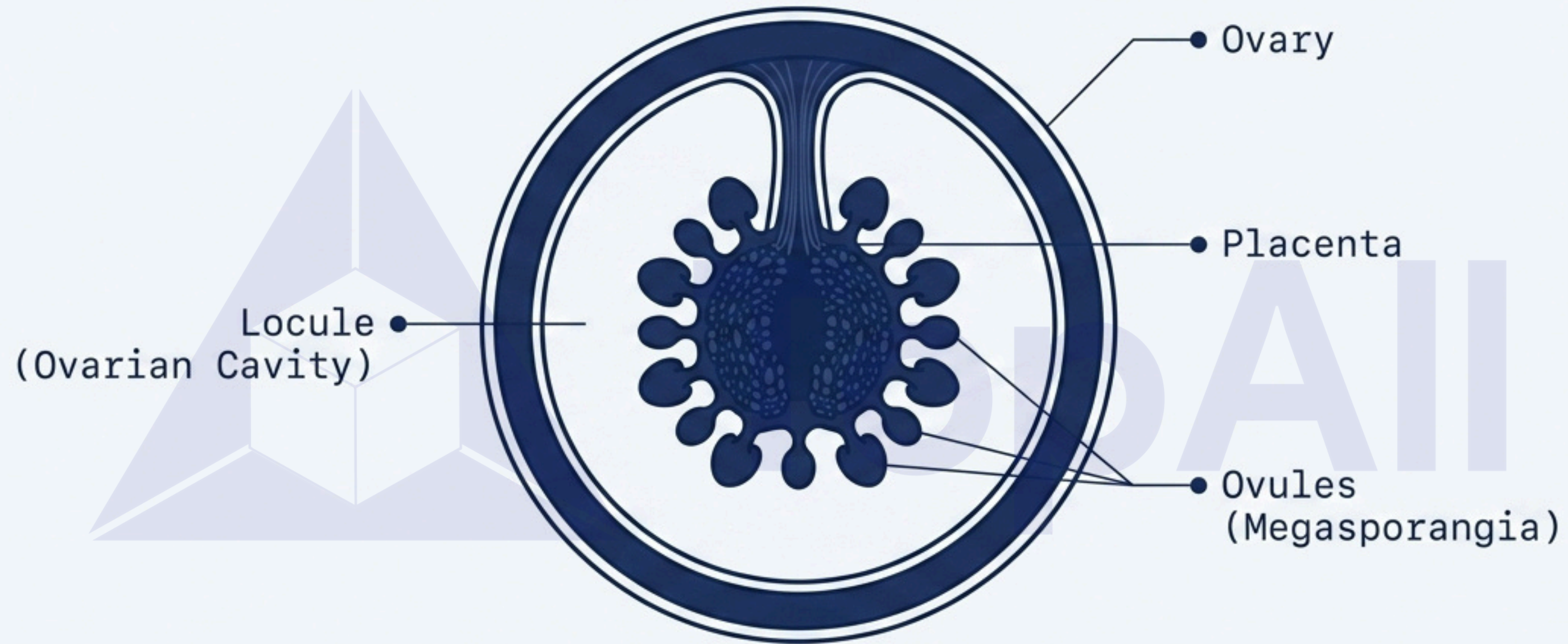
Style

The elongated, slender stalk positioned directly beneath the stigma.

Ovary

The basal, bulged chamber of the pistil that houses the reproductive core.

Arising from the placenta located inside the ovarian cavity are the megasporangia, commonly called ovules.



1 Single Ovule: Wheat, paddy, mango.

∞ Many Ovules: Papaya, water melon, orchids.

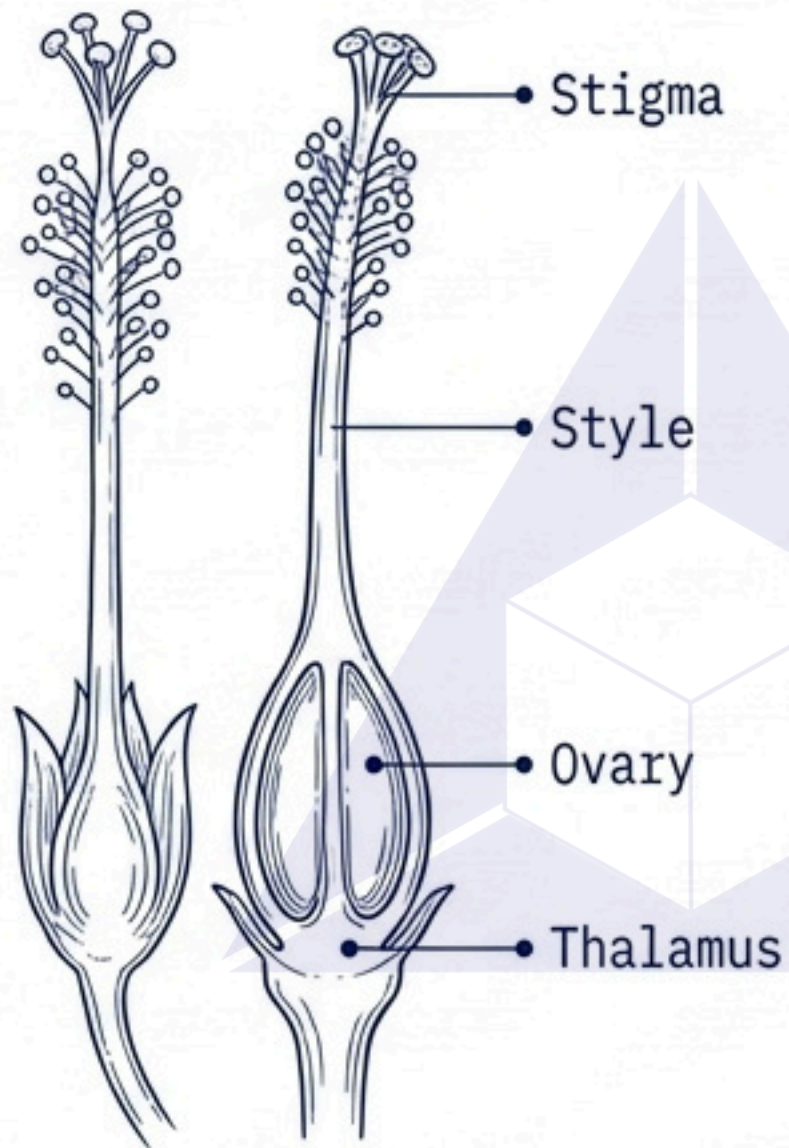


Fig 1.7a: Dissected solitary pistil

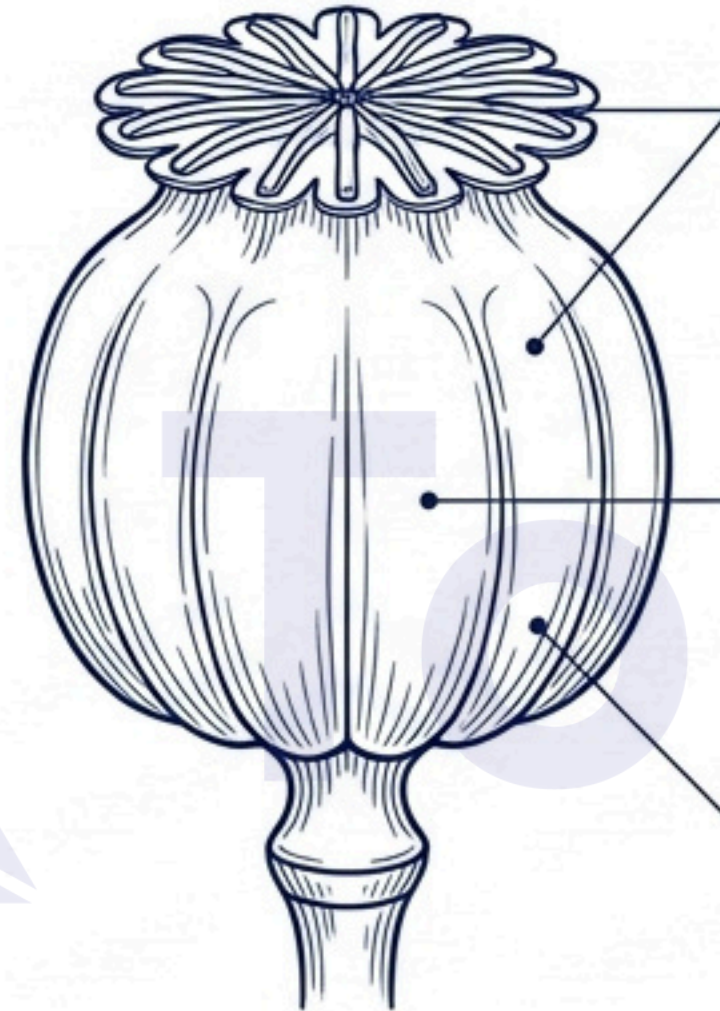


Fig 1.7b: Multicarpellary, syncarpous pistil

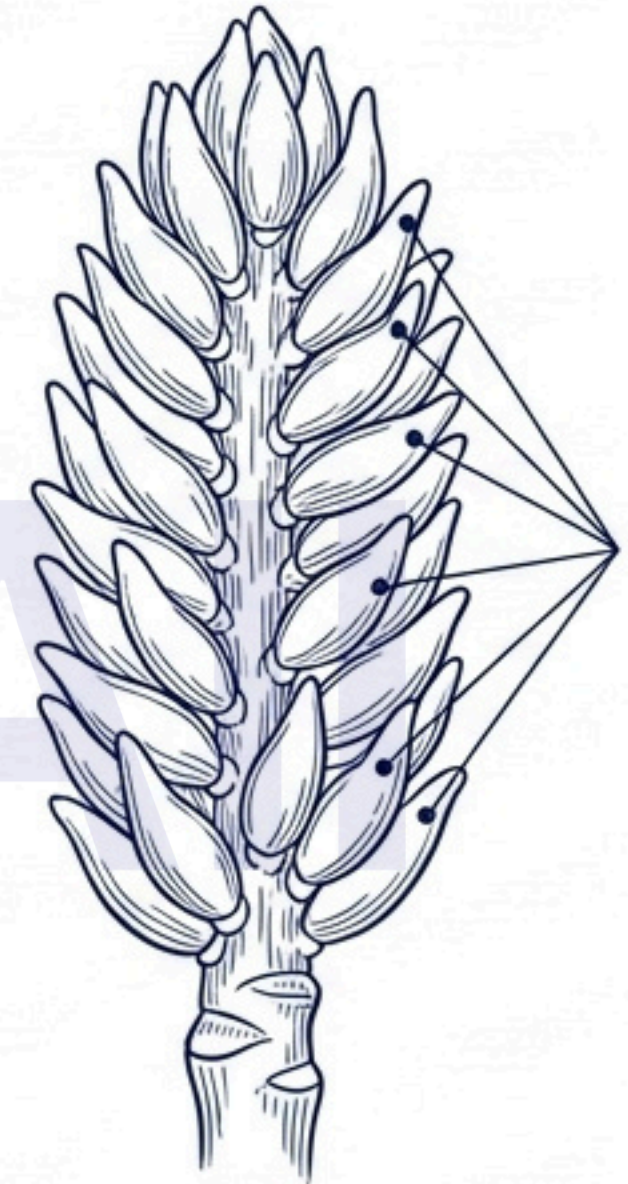


Fig 1.7c: Multicarpellary, apocarpous gynoecium

The Reproductive Imperative

The extreme morphological diversity of the gynoecium—from solitary carpels to complex, fused multicarpellary structures—represents an extraordinary evolutionary adaptation.

Regardless of its architectural variation, every pistil is precisely engineered to achieve a singular goal: receive pollen, guide gametes, and protect the developing ovules for successful fertilization.



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