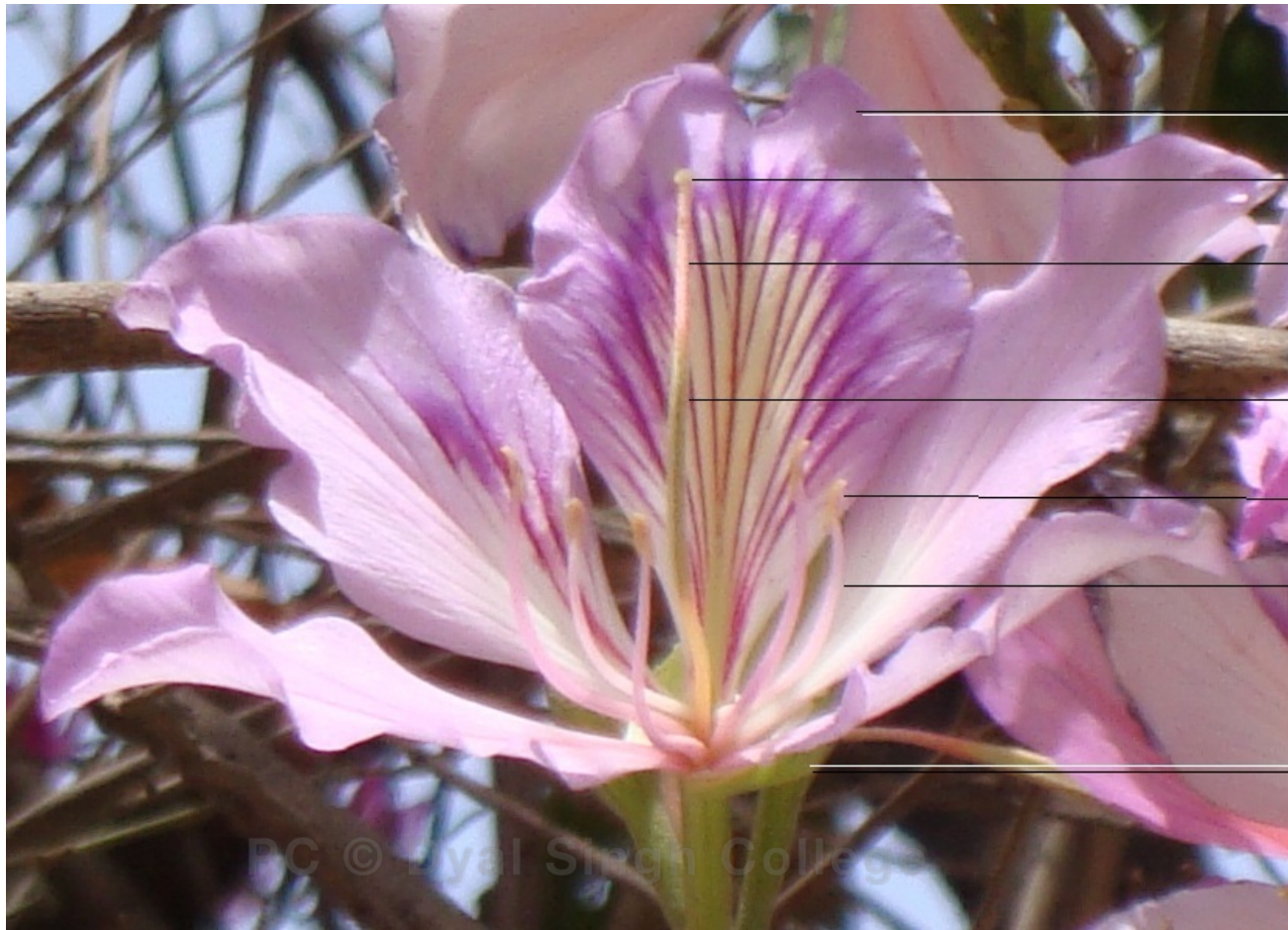


FLOWER



PETAL

STIGMA

STYLE

OVARY

ANTHER

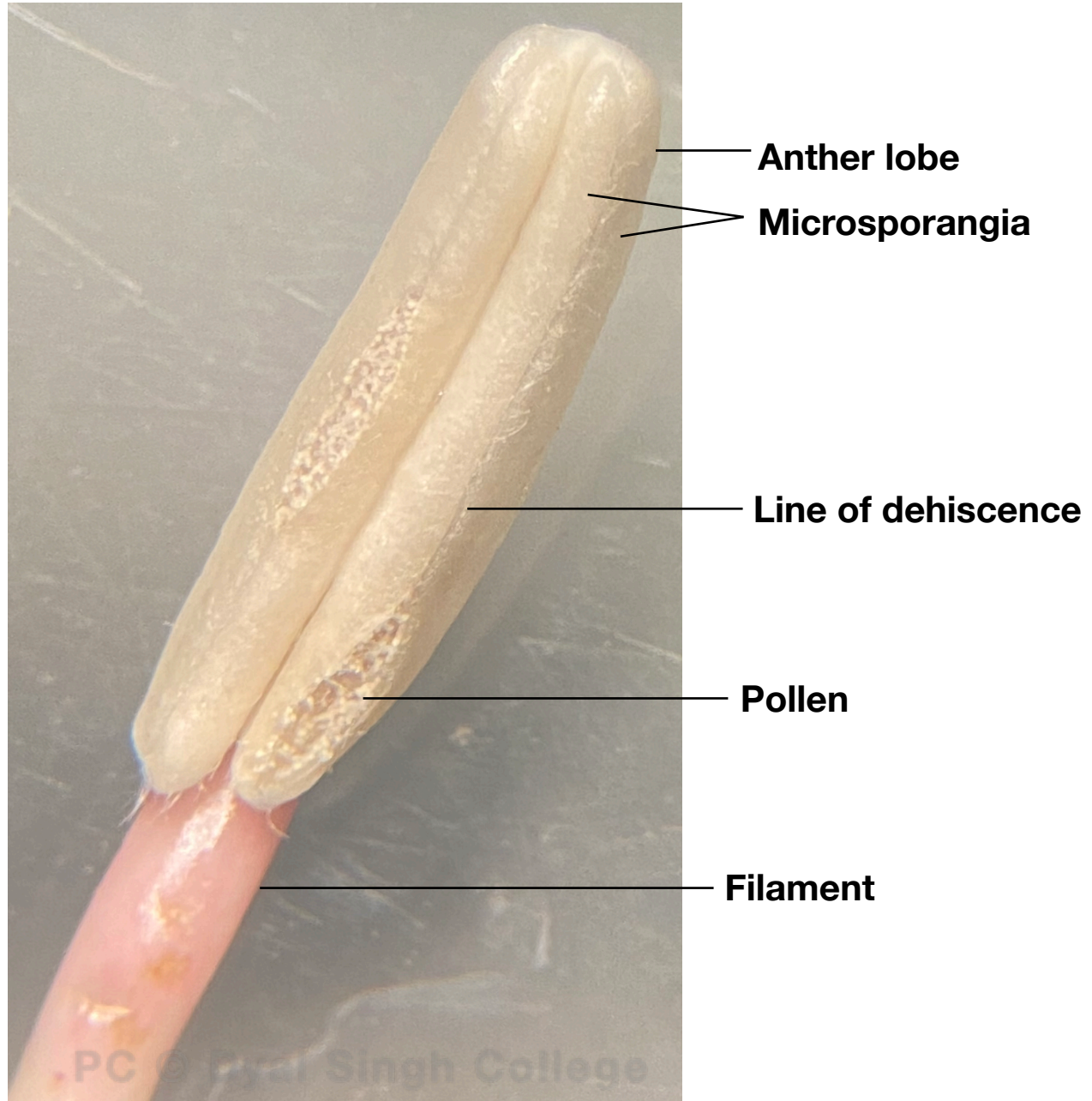
FILAMENT

SEPAL

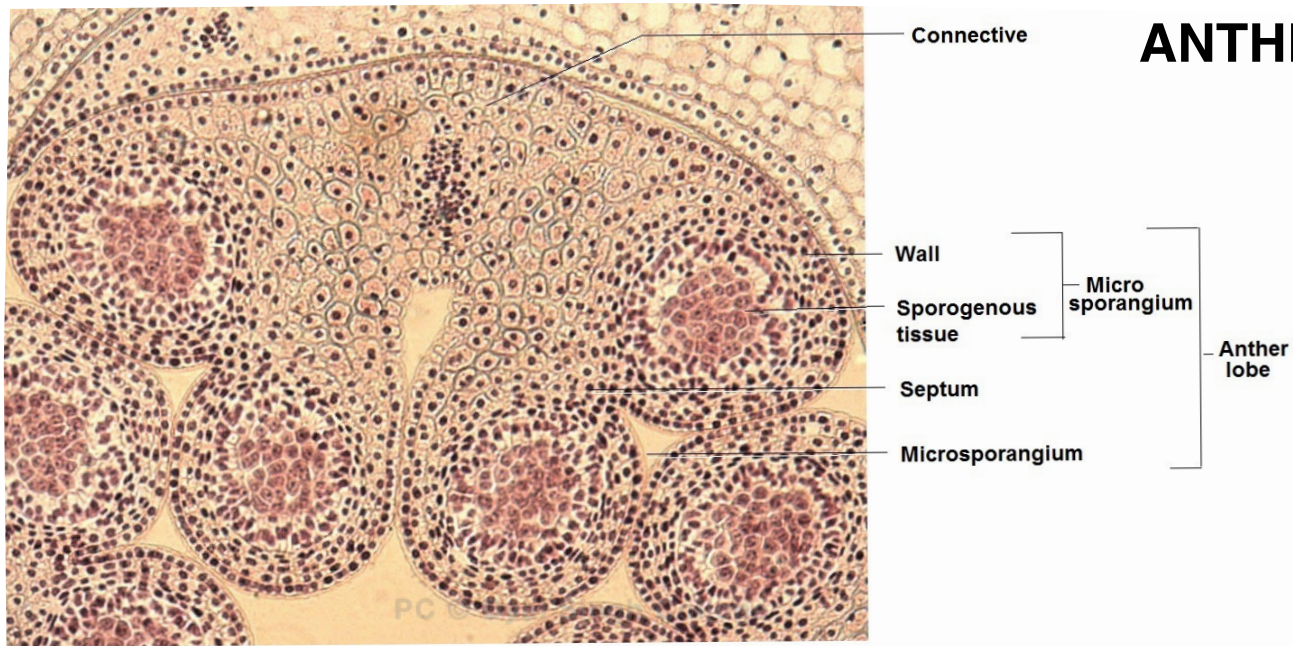
CARPEL /
PISTIL

STAMEN

ANGIOSPERM STAMEN



ANTHER STRUCTURE

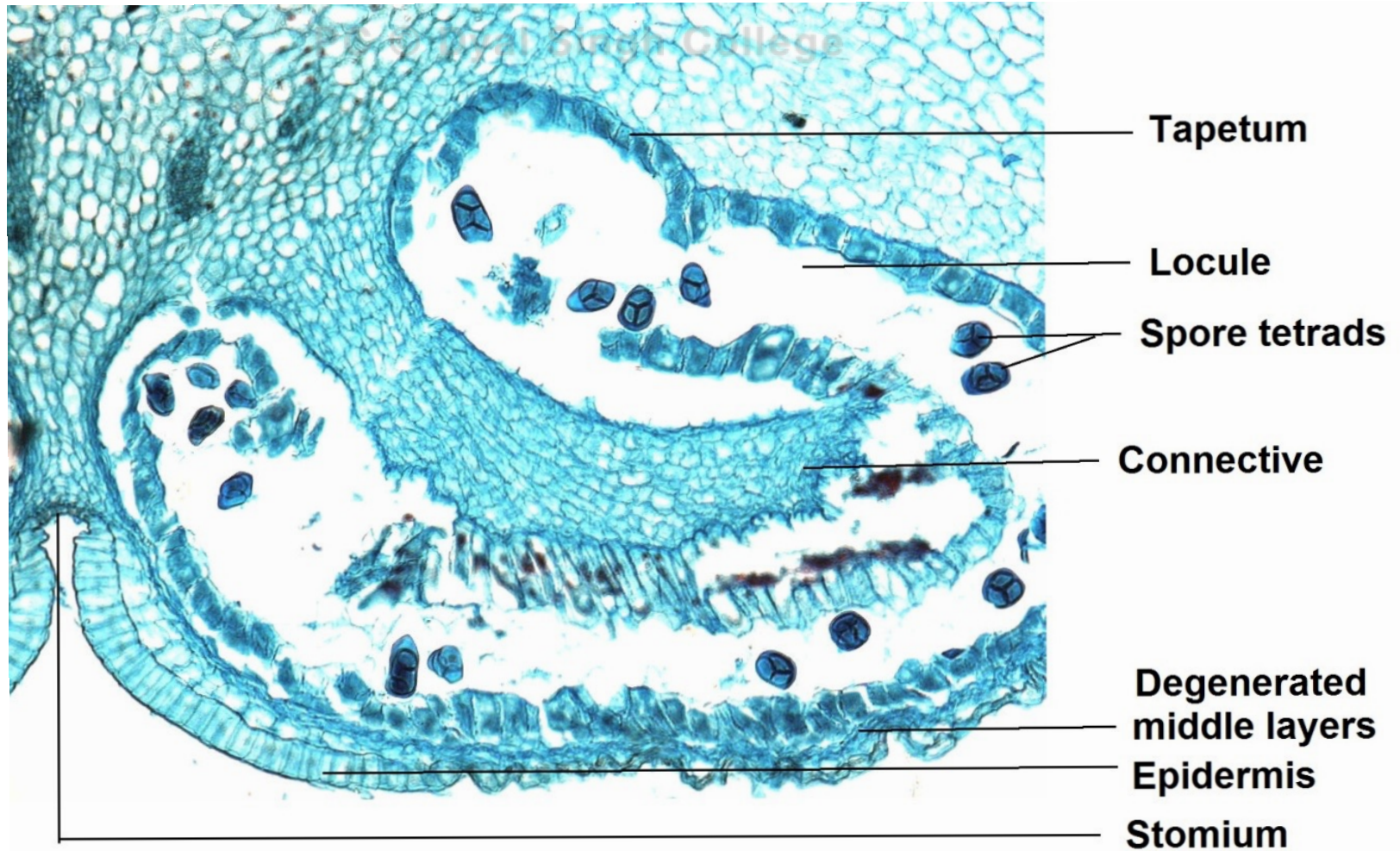


T.S. YOUNG ANTHER WITH SPOROGENOUS TISSUE



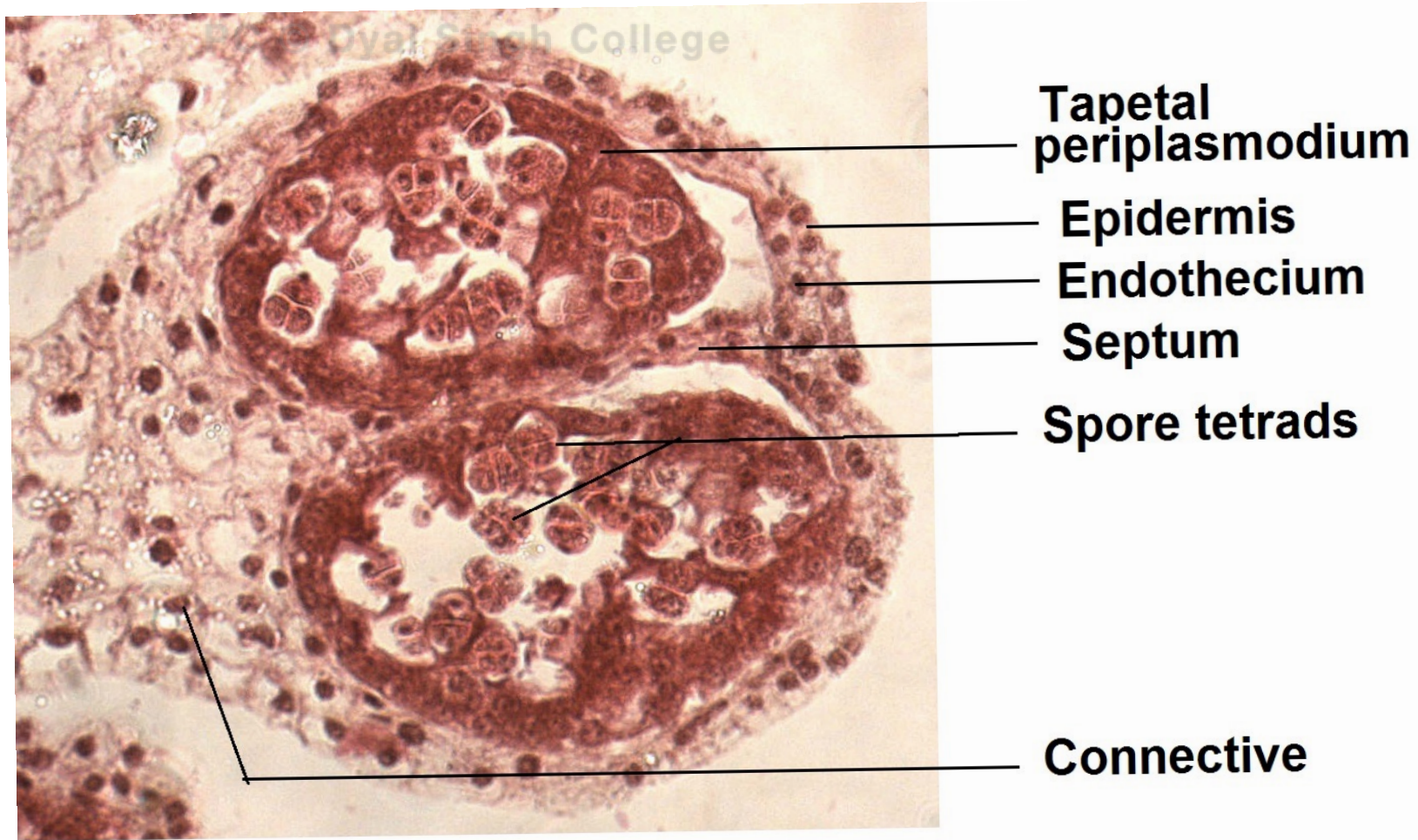
T.S. MICROSPORANGIUM

POLLEN DEVELOPMENT



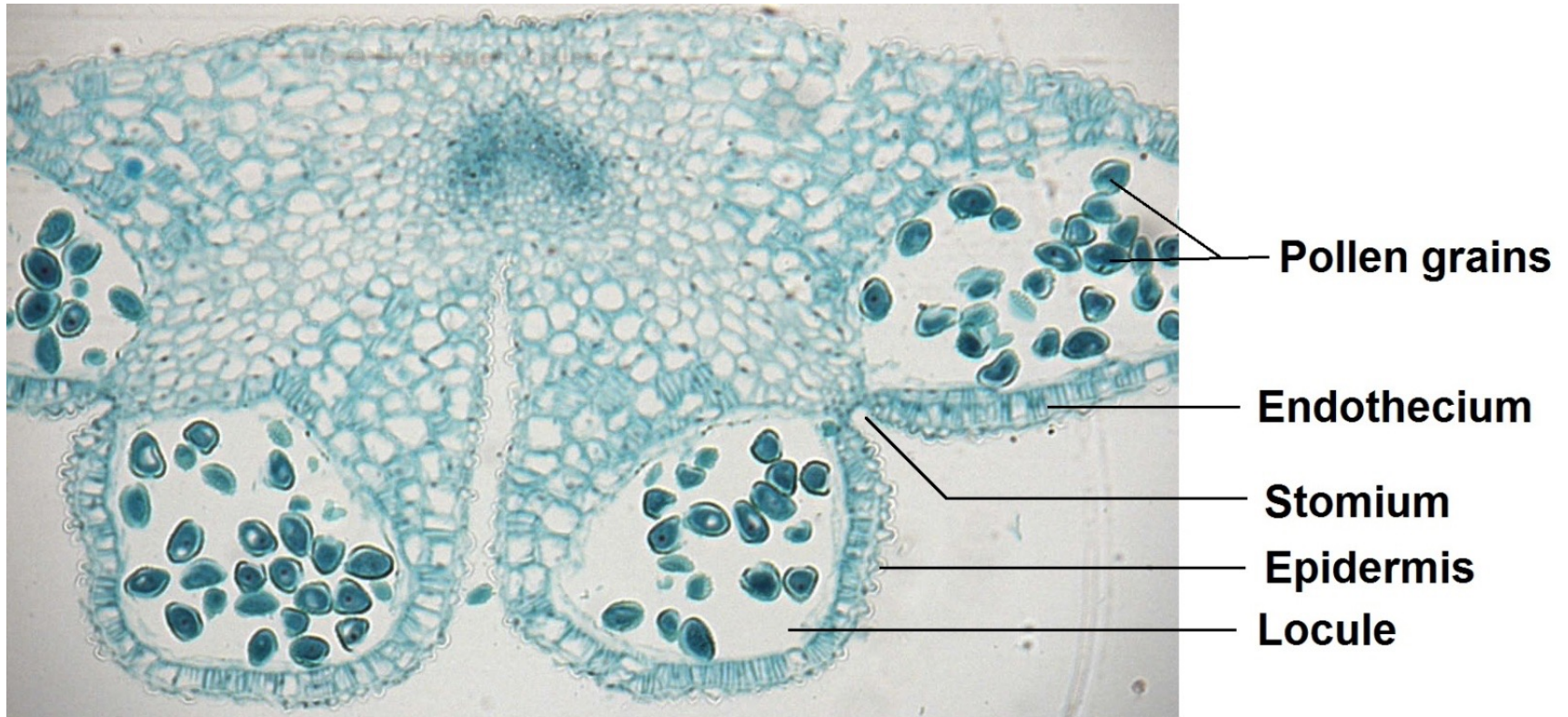
**T.S. ANTHER WITH GLANDULAR TAPETUM
AND SPORE TETRADS**

POLLEN DEVELOPMENT



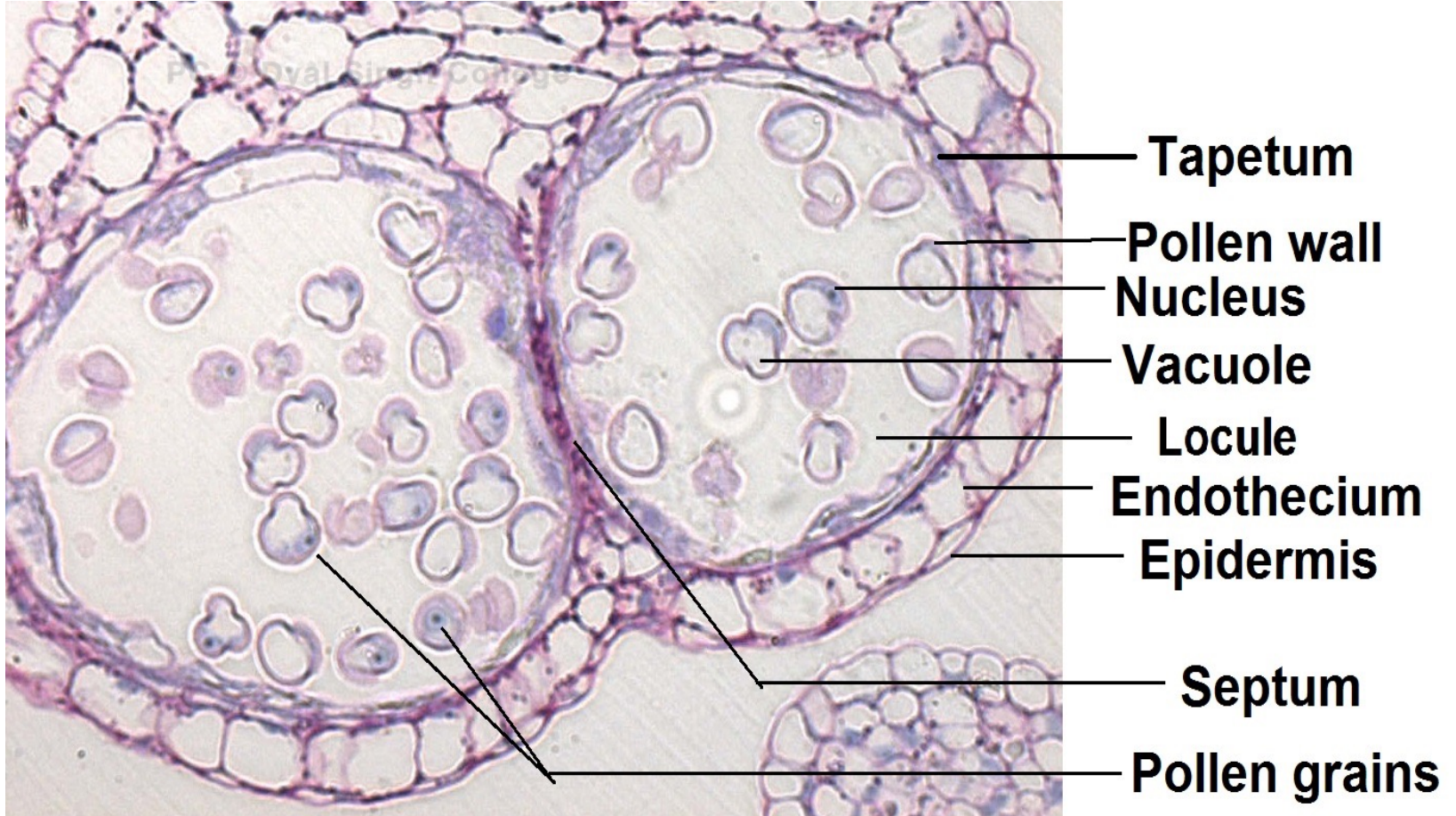
T.S. Anther with amoeboid tapetum and spore tetrads

POLLEN DEVELOPMENT



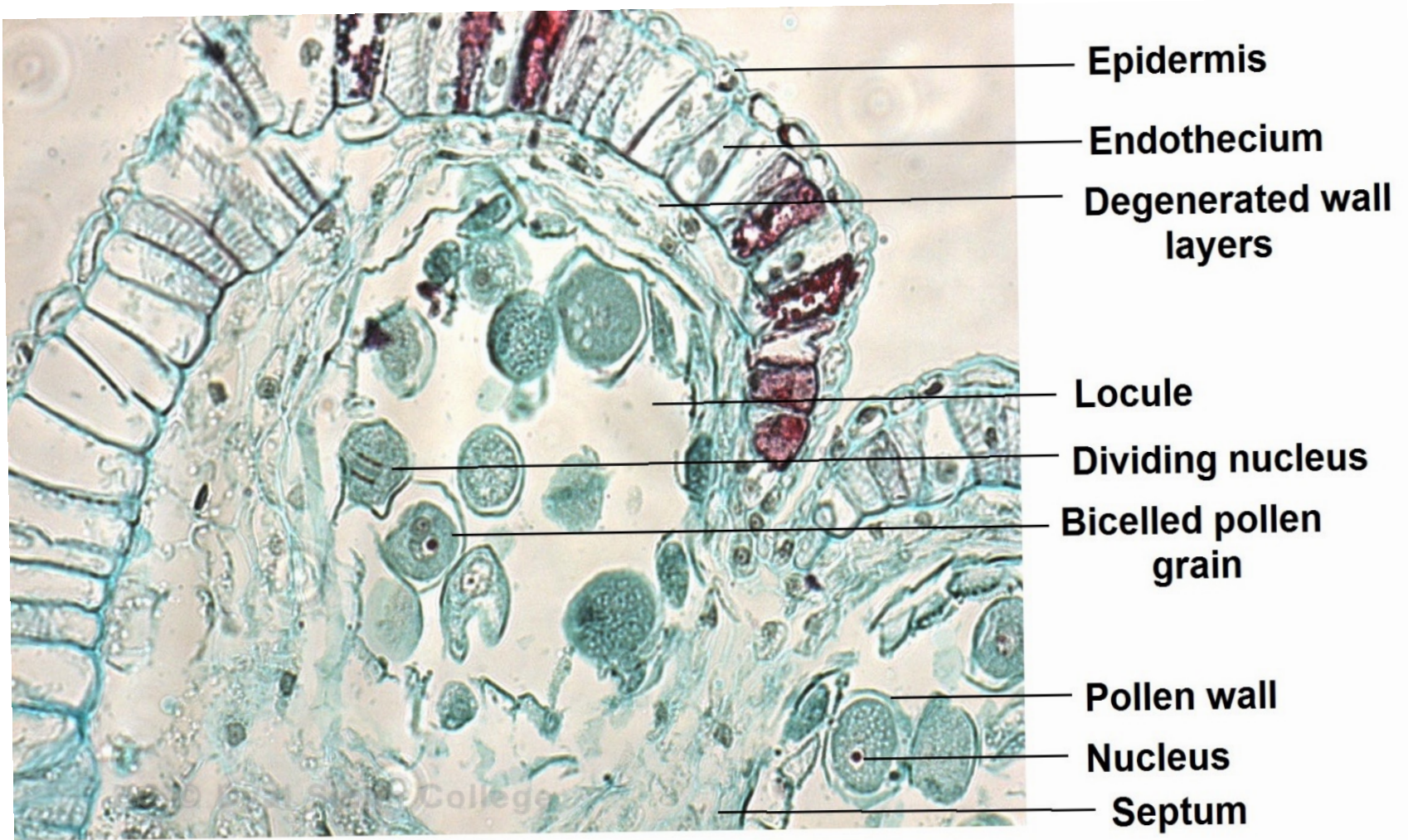
T.s. anther at uninucleate pollen grain stage

POLLEN DEVELOPMENT



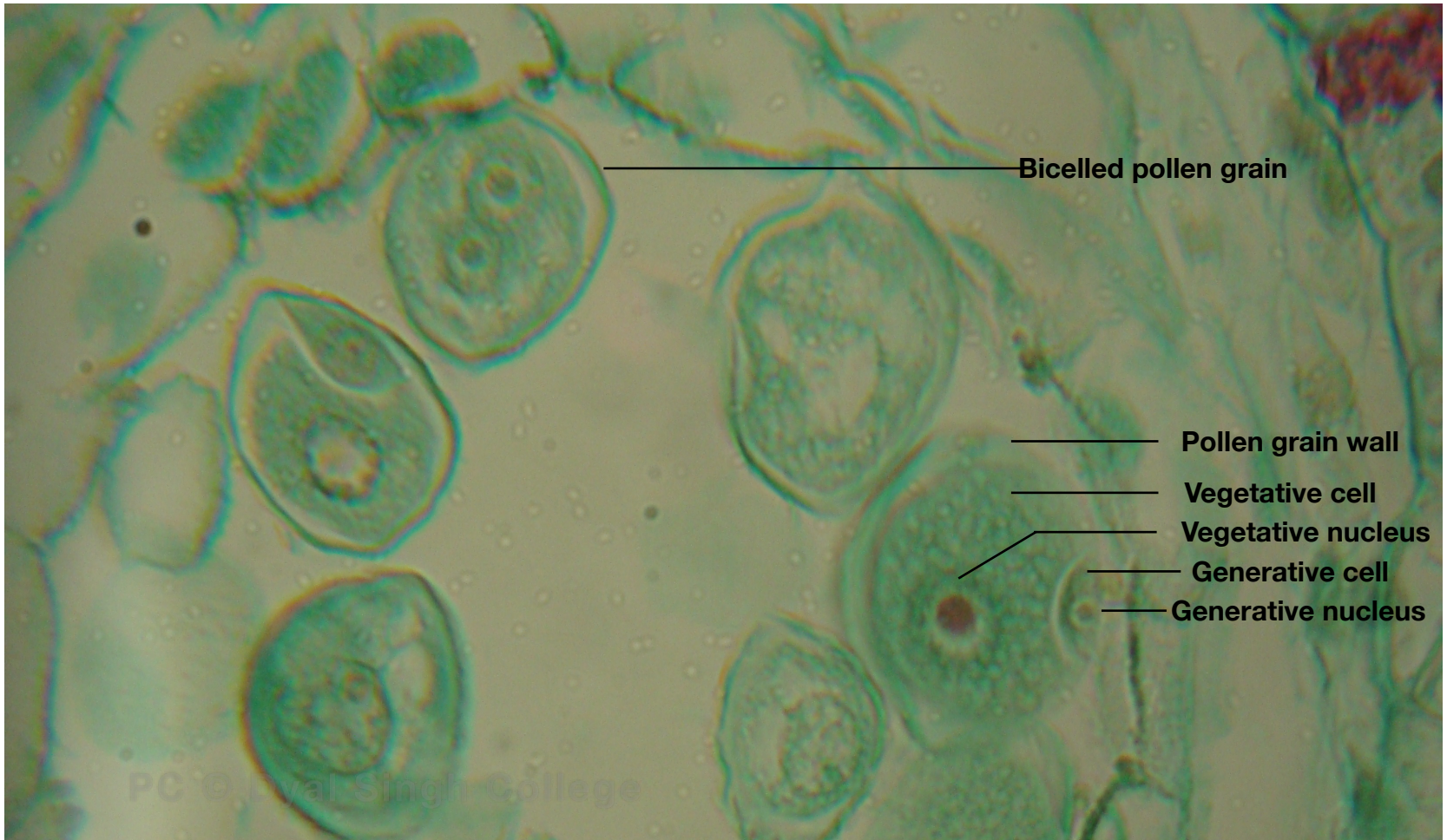
T.s. anther at uninucleate pollen grain stage

POLLEN DEVELOPMENT

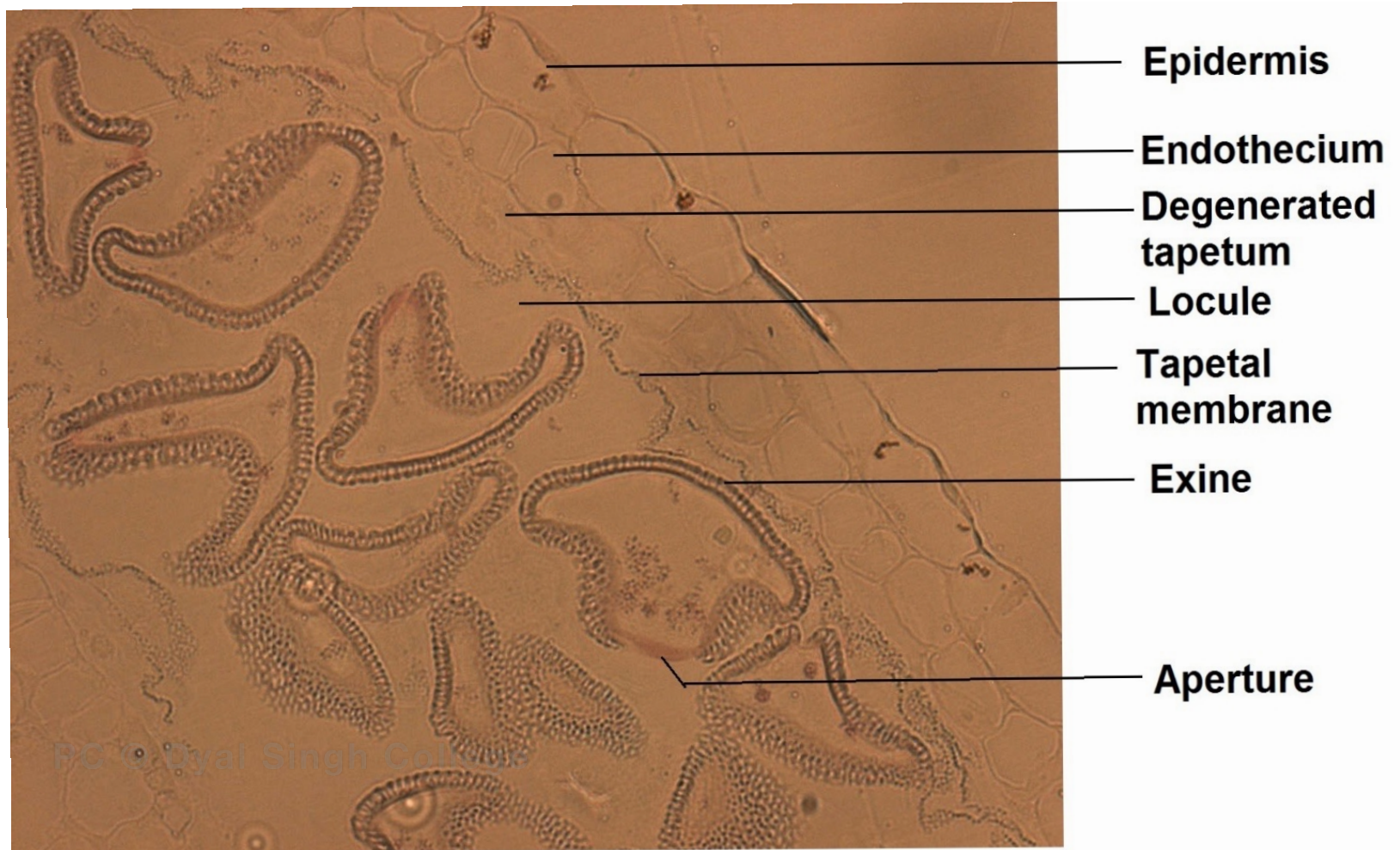


T.s. anther at bicelled pollen grain stage

POLLEN DEVELOPMENT

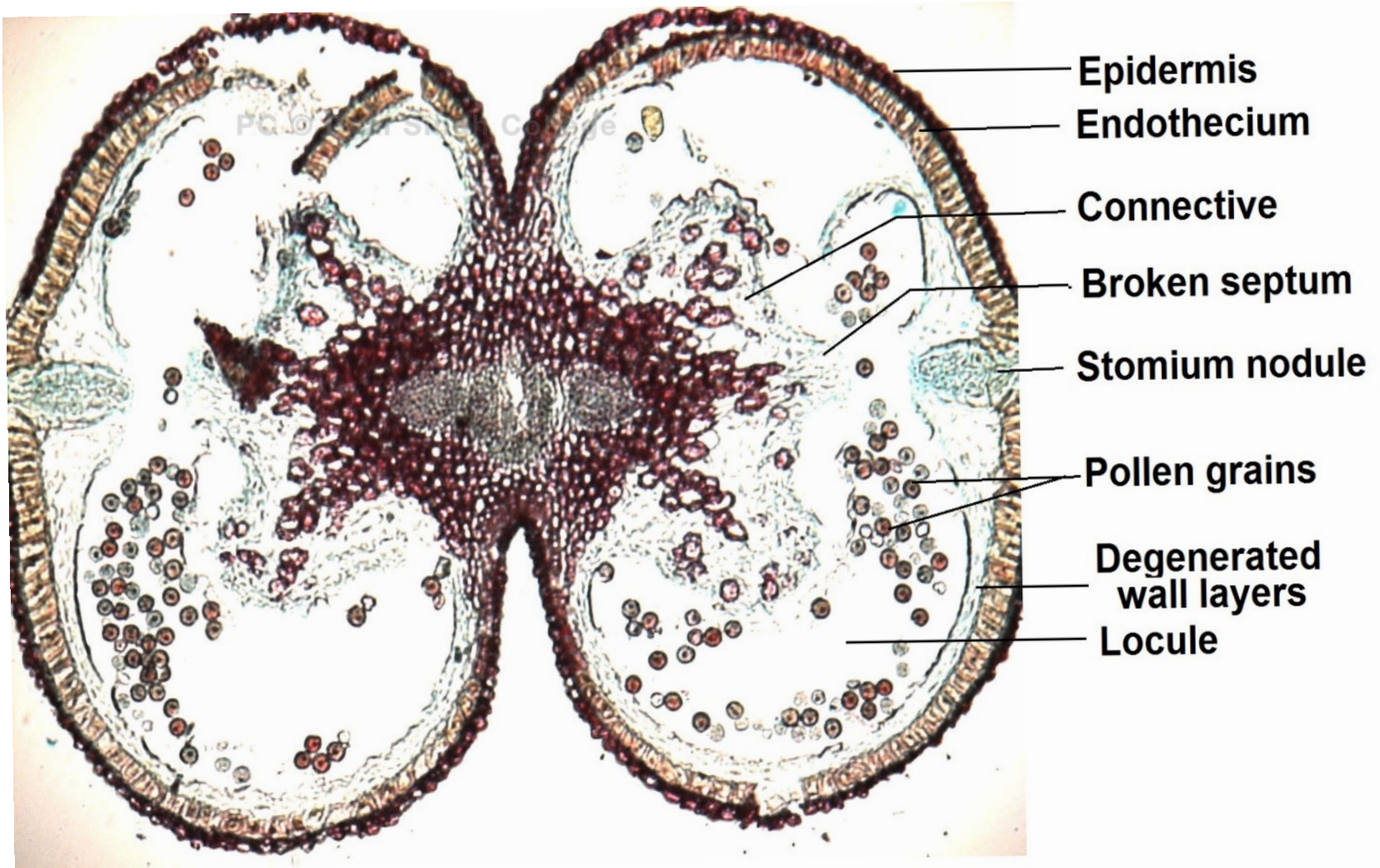


POLLEN DEVELOPMENT



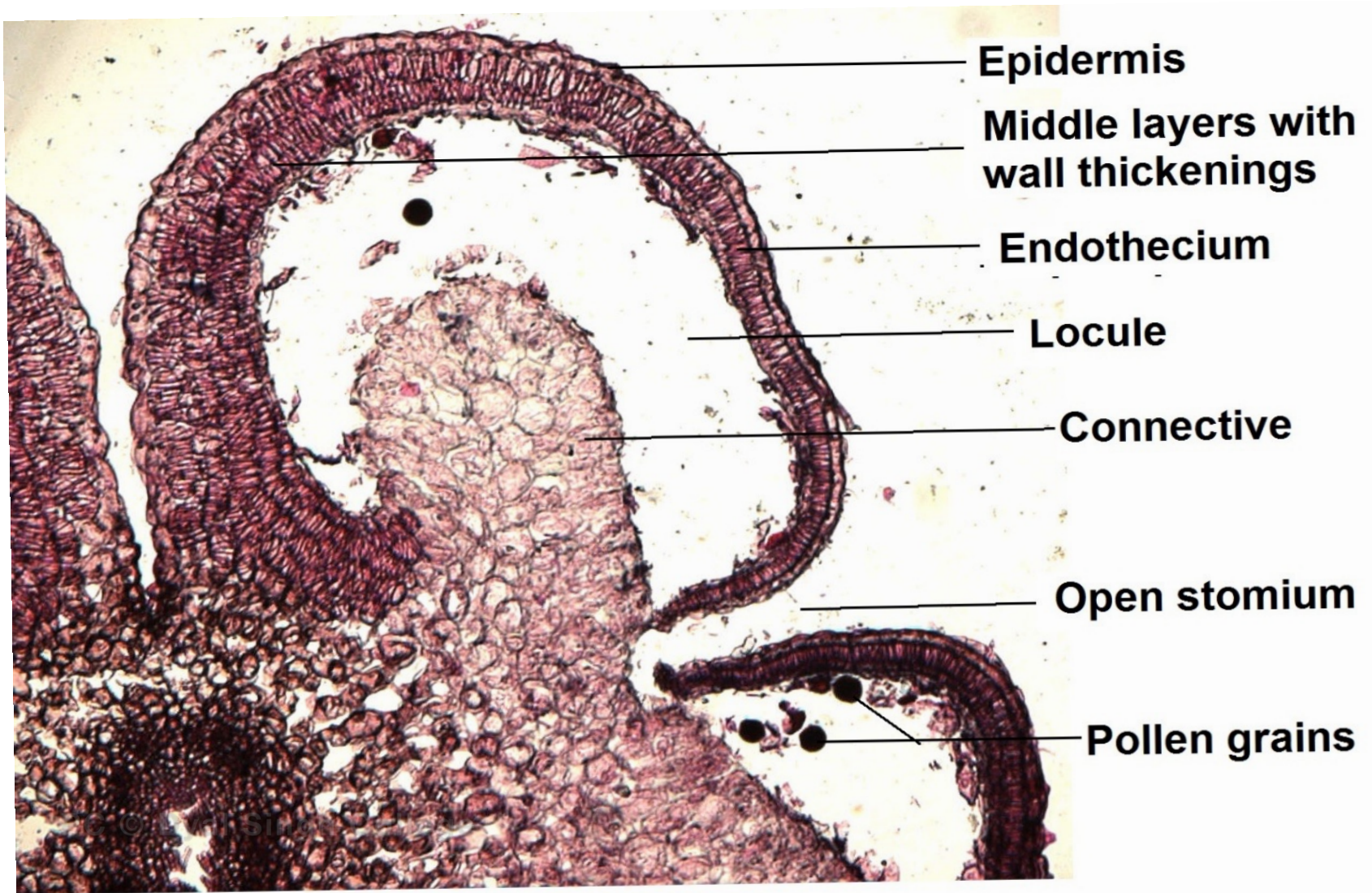
T.s. anther showing mature pollen grains and tapetal membrane

POLLEN DEVELOPMENT



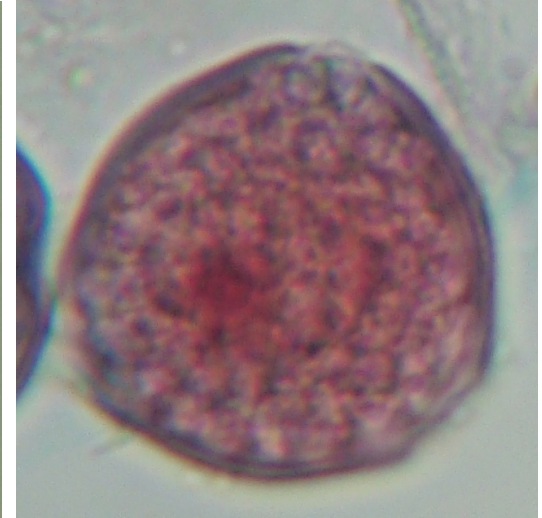
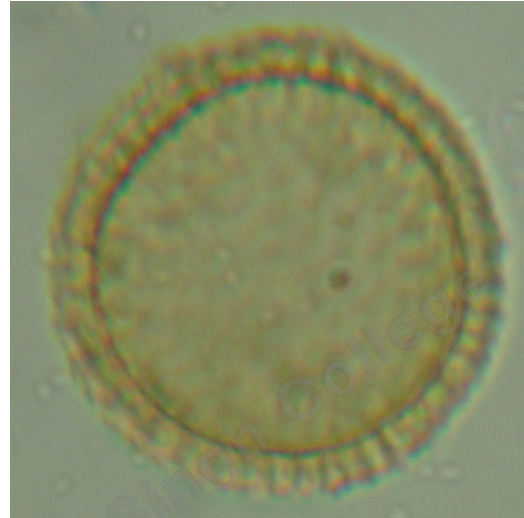
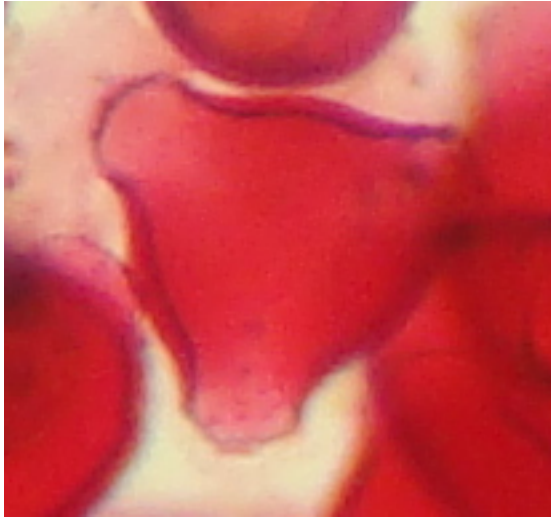
T.s. dithecous anther with mature pollen grains

POLLEN DEVELOPMENT

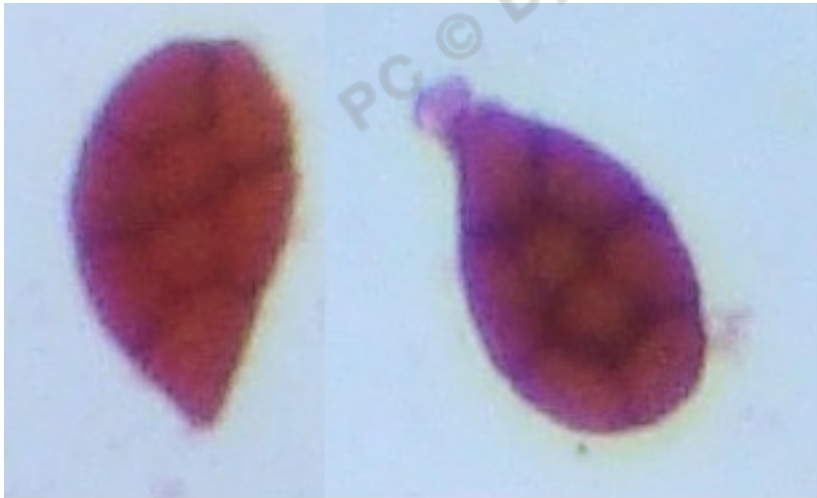


T.s. Dehised anther

Pollen Grains



Monads of some angiosperms

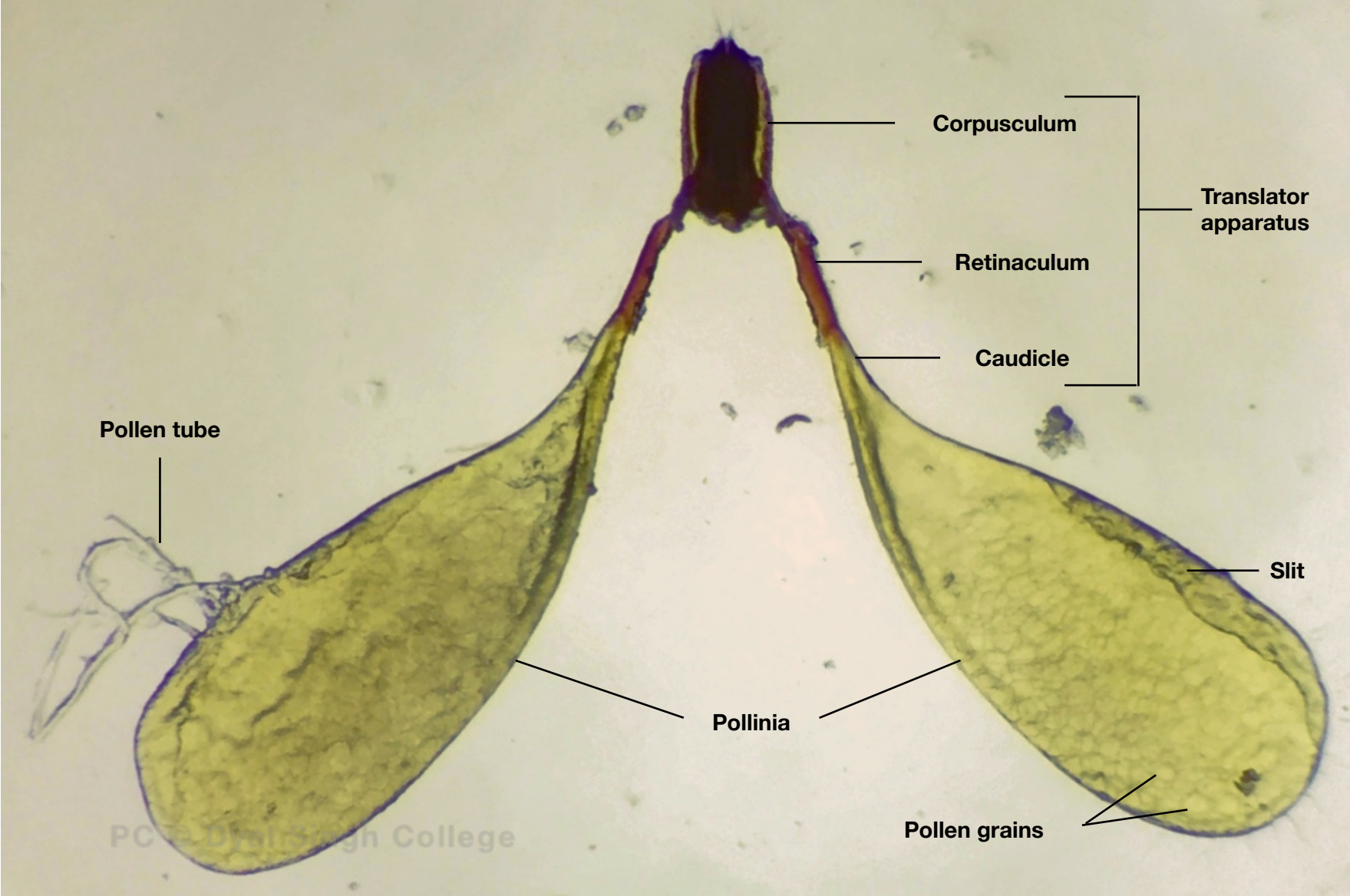


W.m. polyads of *Calliandra haematocephala*

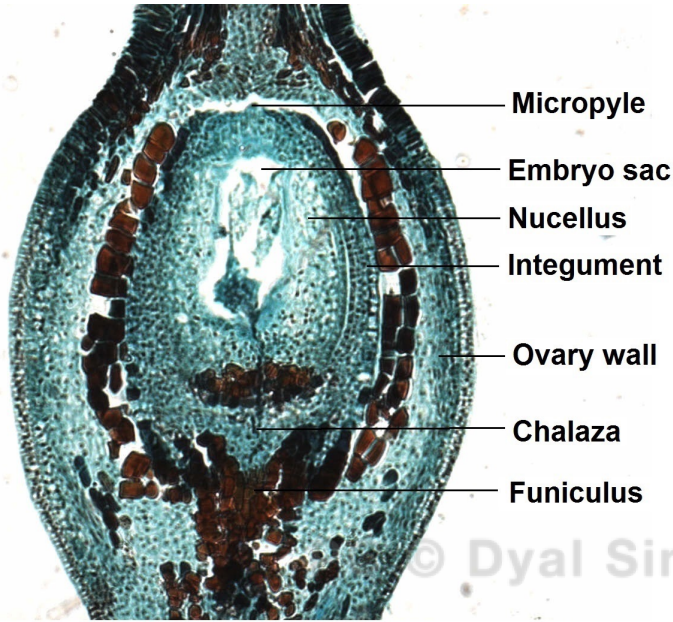


W.m. polyad of *Albizia*

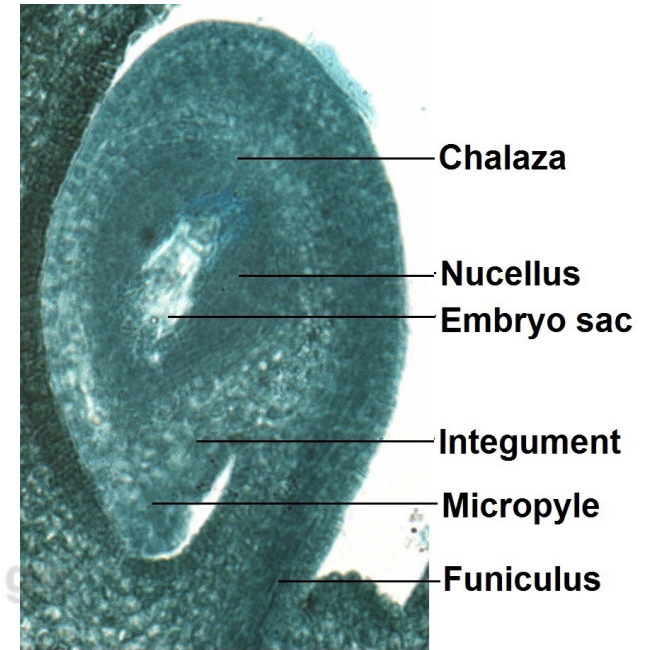
Pollinarium of *Calotropis*



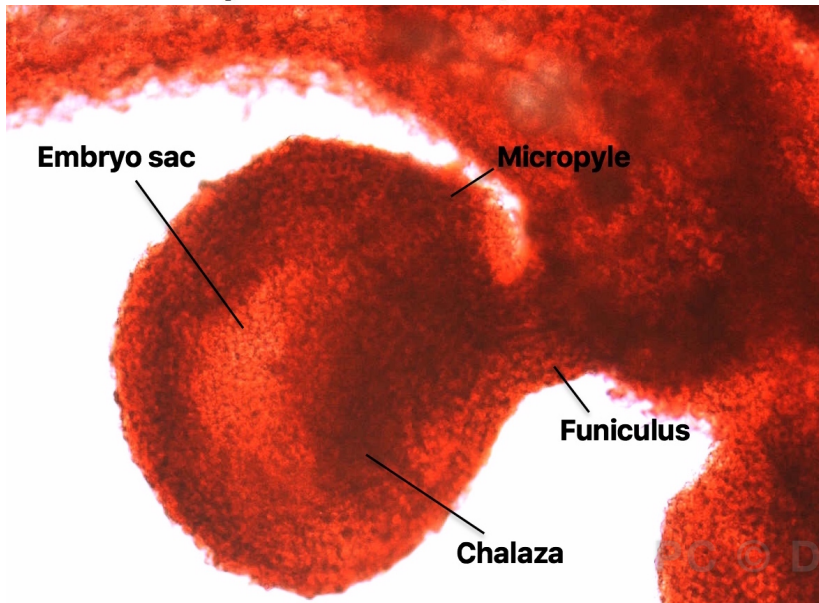
TYPES OF OVULE



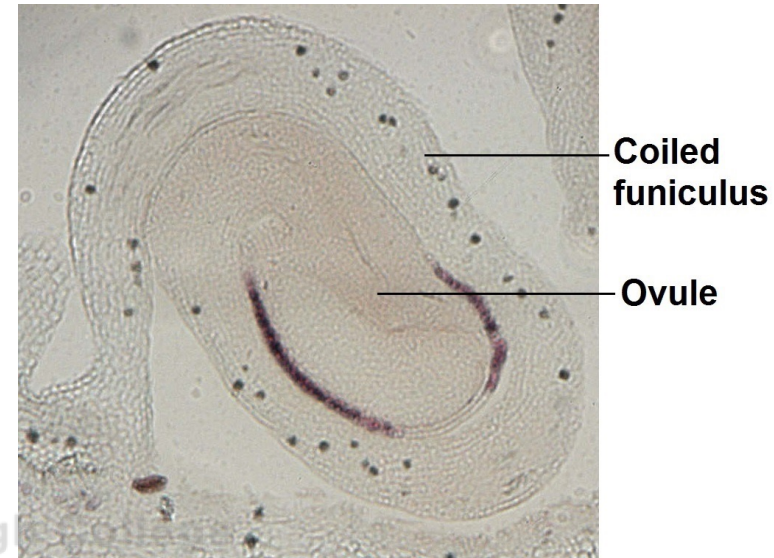
L.s. ovary with orthotropous ovule



L.s. anatropous ovule

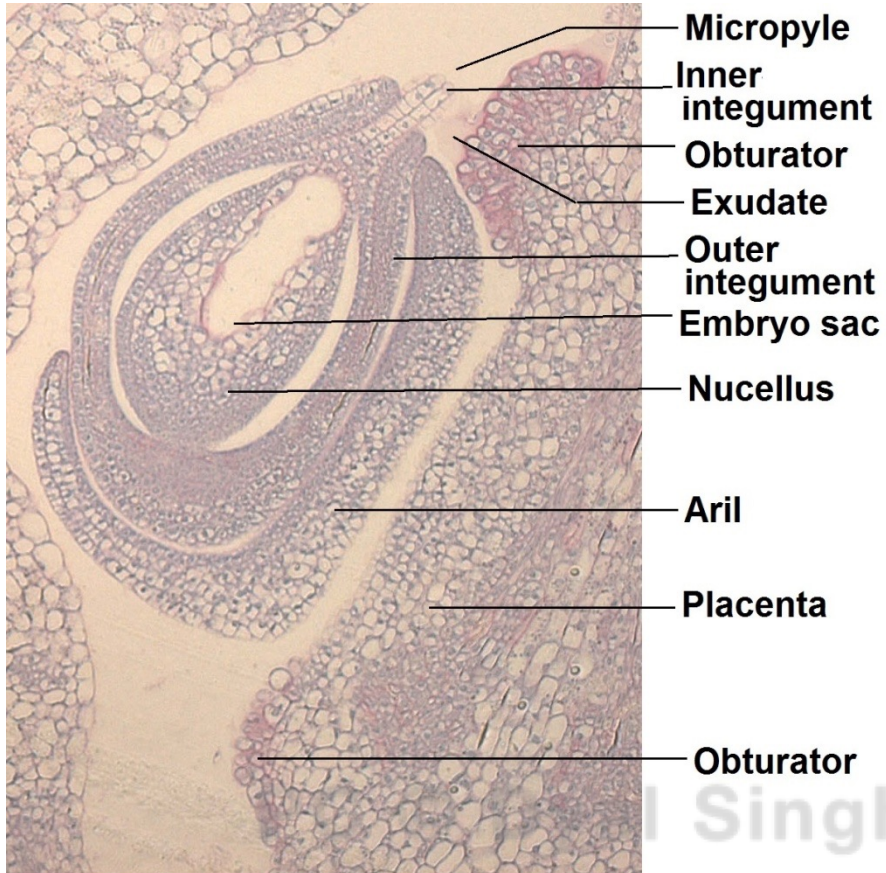


L.S. CAMPYLOTROPOUS OVULE

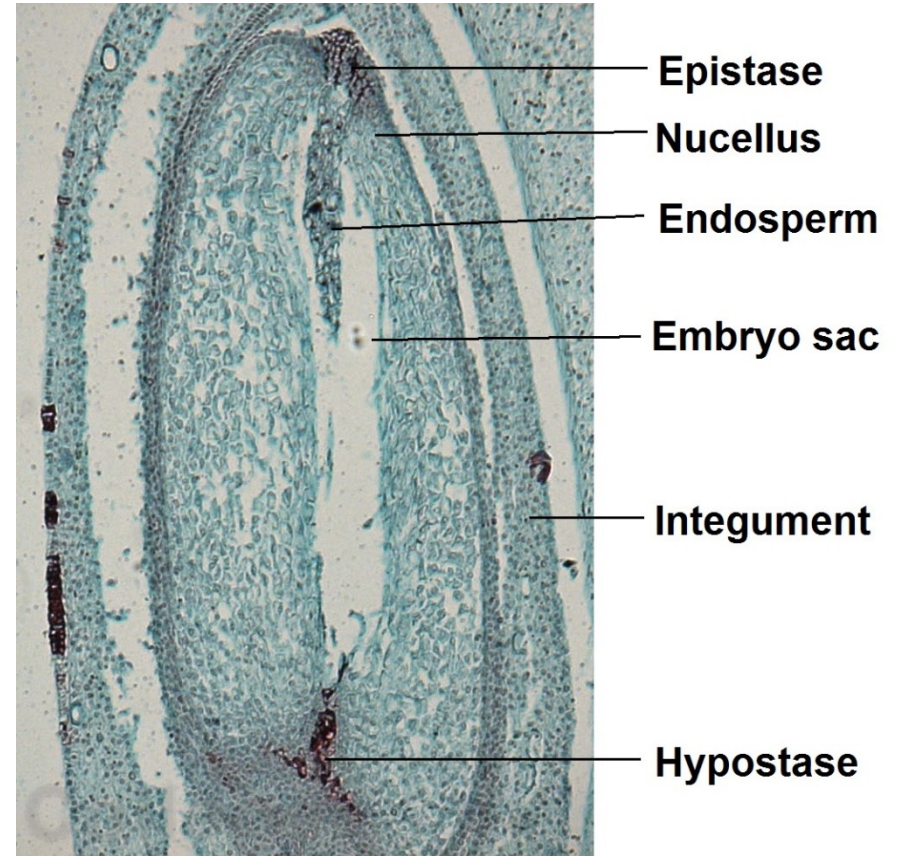


L.s. circinotropous ovule

OVULAR STRUCTURES

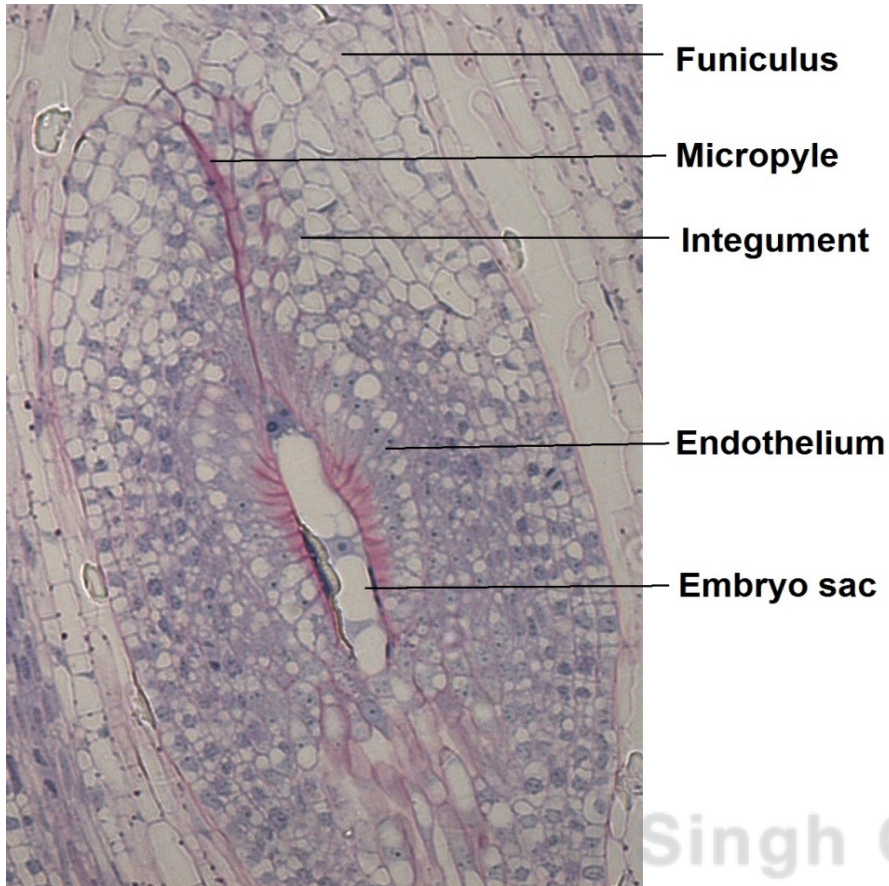


L.s. ovary showing placental obturator and an arillate ovule

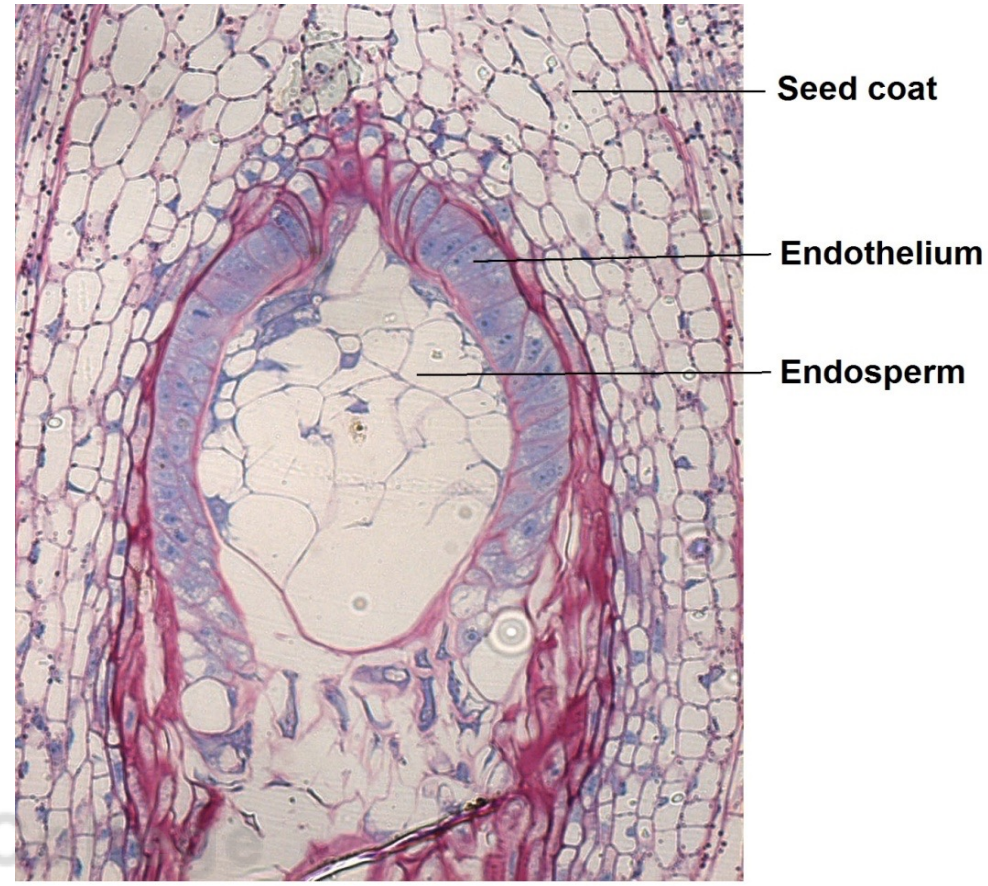


L.s. young seed with hypostase and epistase

OVULAR STRUCTURES

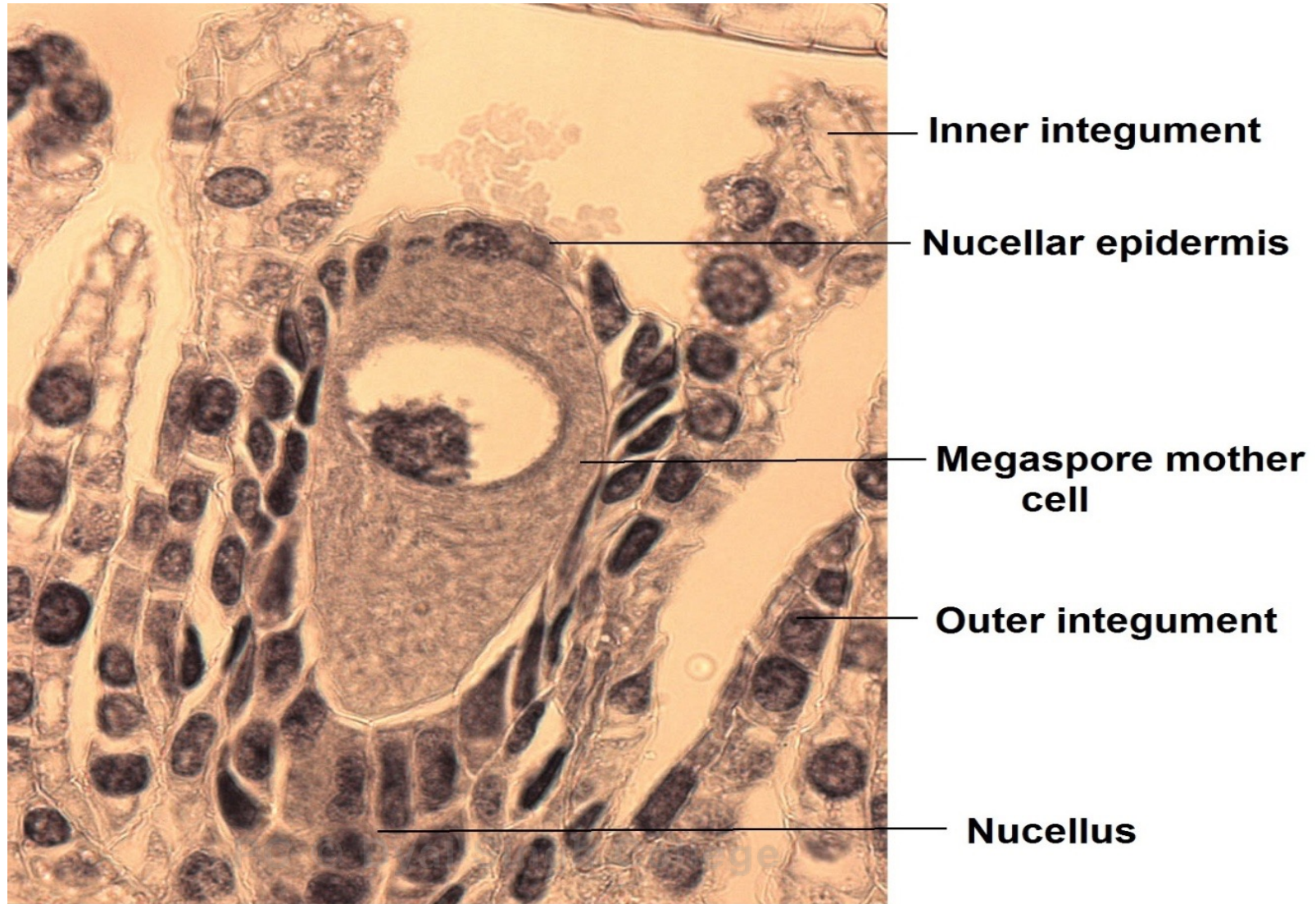


L.s. unitegmic ovule with endothelium



L.s. young seed with endothelium

EMBRYO SAC DEVELOPMENT



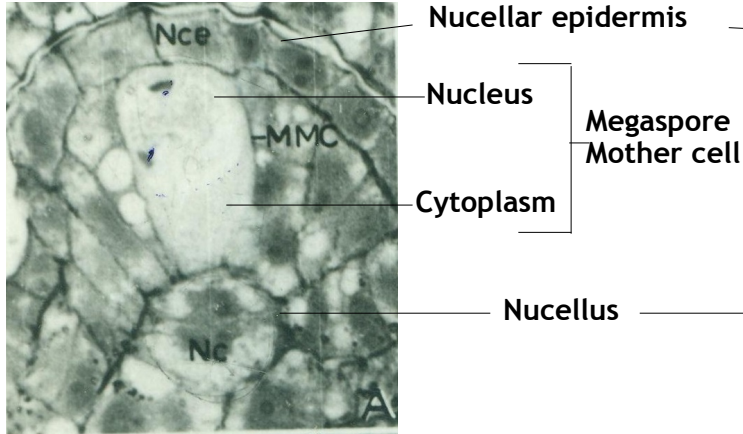
L.s. bitegmic, tenuinucellate ovule with megaspore mother cell

EMBRYO SAC DEVELOPMENT

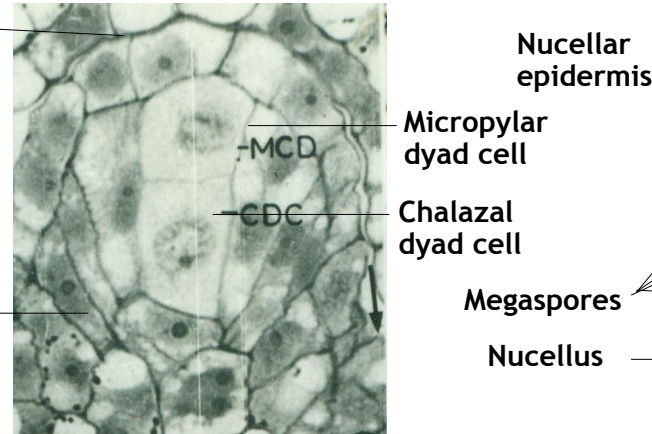


L.s. bitegmic, crassinucellate ovule with megaspore mother cell

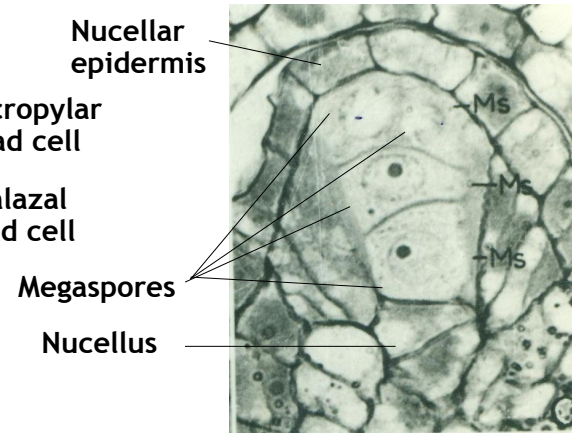
Embryo Sac Development - Monosporic Polygonum Type



L.S. Ovule at megaspore mother cell stage

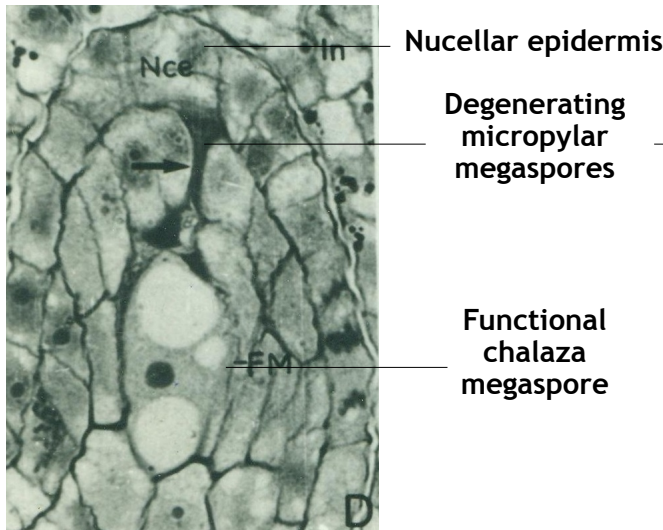


L.S. Ovule at dyad stage

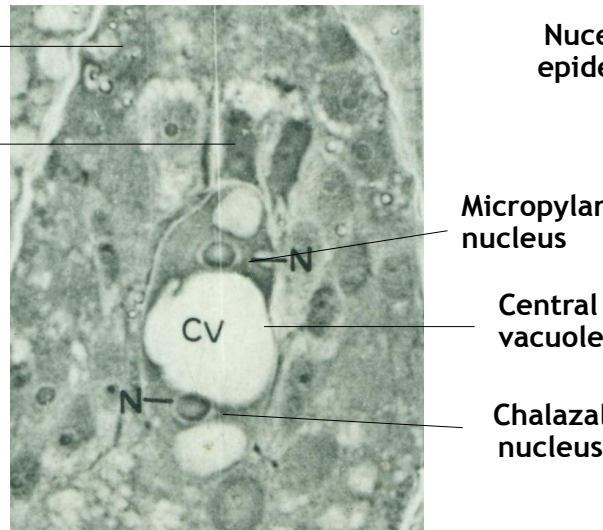


L.S. Ovule with a tetrad of megaspores

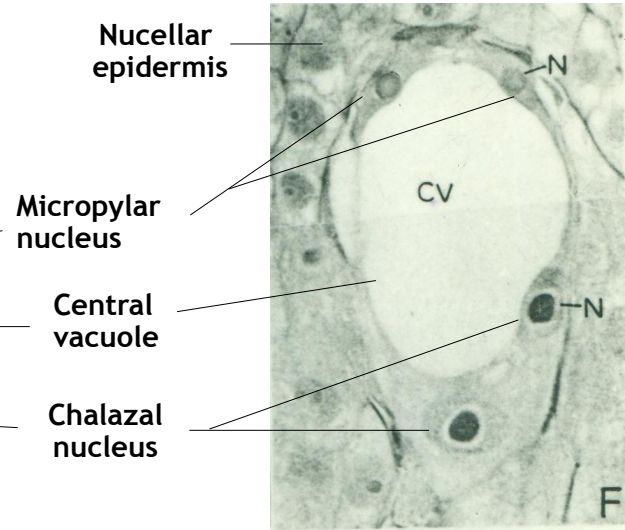
PC © Dyal Singh College



L.S. Ovule showing functional megaspore

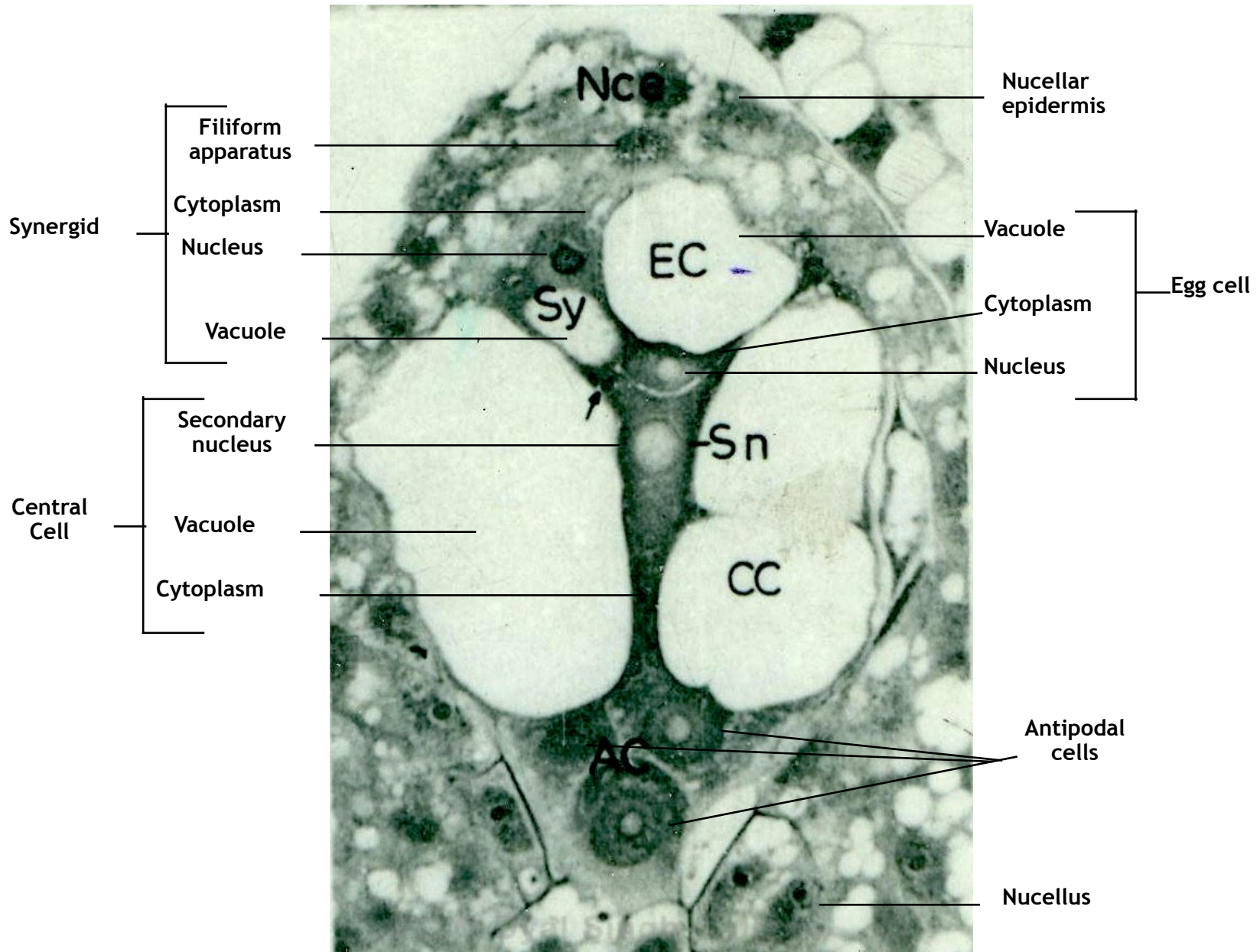


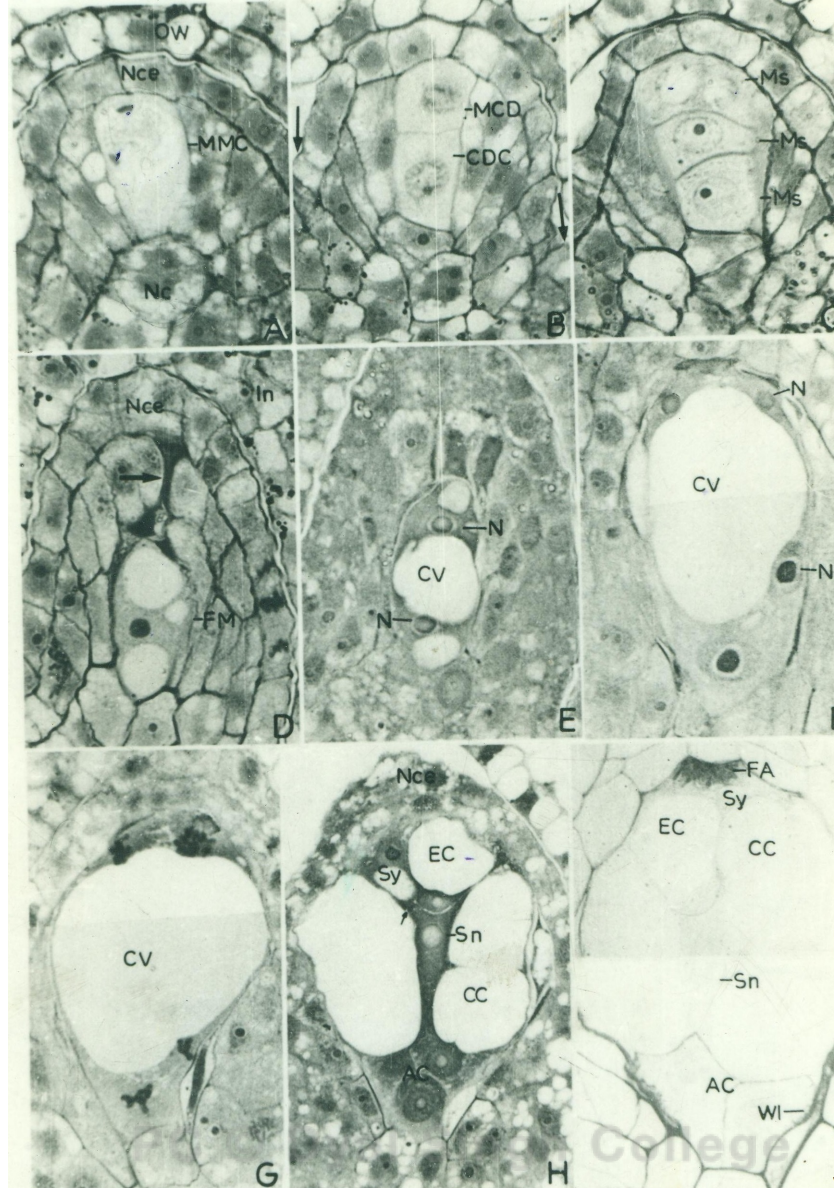
L.S. Ovule showing 2-nucleate megagametophyte



L.S. Ovule showing 4-nucleate megagametophyte

Mature Embryo Sac

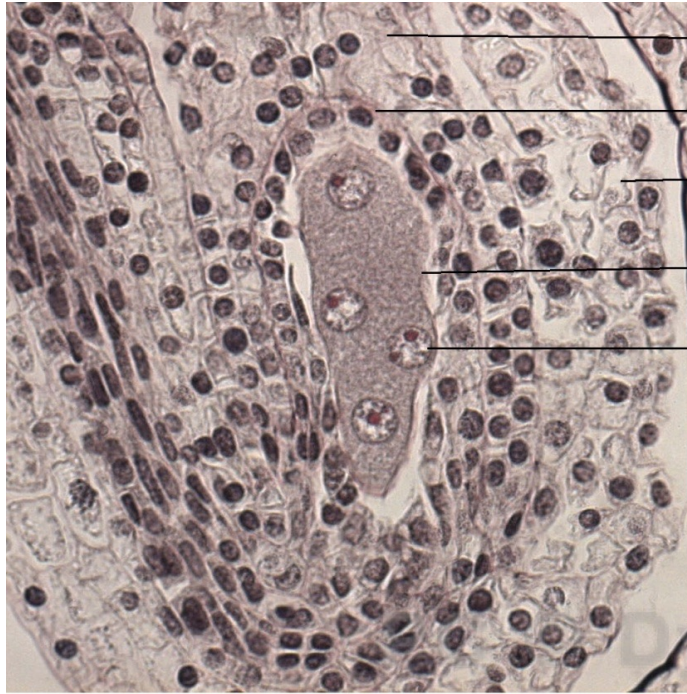




Monosporic (Polygonum) type of embryo sac development

AC- antipodal cells, CC- central cell, CDC- chalazal dyad cell, CV- central vacuole, EC- egg cell, FA- filiform apparatus, FM- functional megaspore, In- integument, MCD- micropylar dyad cell, MMC- megaspore mother cell, MS- megaspore, N- nucleus, Nc- nucellus, Nce- nucellar epidermis, OW- ovary wall, Sn- secondary nucleus, Sy- synergid, WI- wall ingrowths.

TETRASPORIC MEGAGAMETOPHYTE OF *Fritillaria*



Inner integument

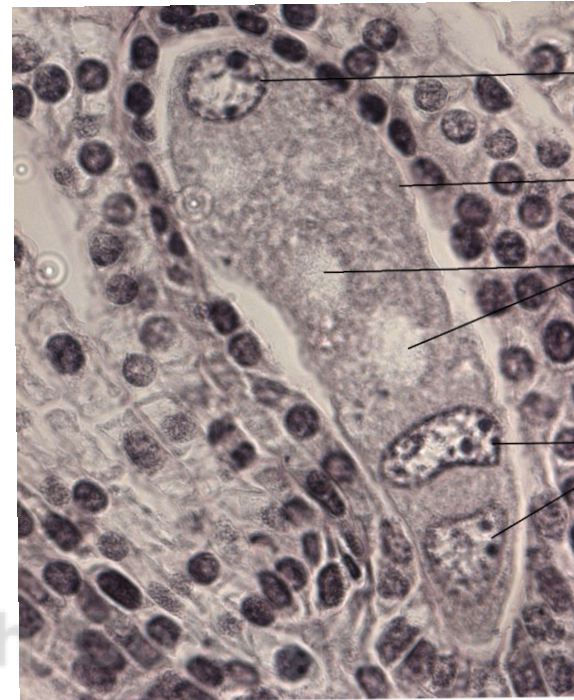
Nucellar epidermis

Outer integument

Coenomegaspore

Nucleus

L.s. ovule with a coenomegaspore



Haploid Nucleus at micropylar region

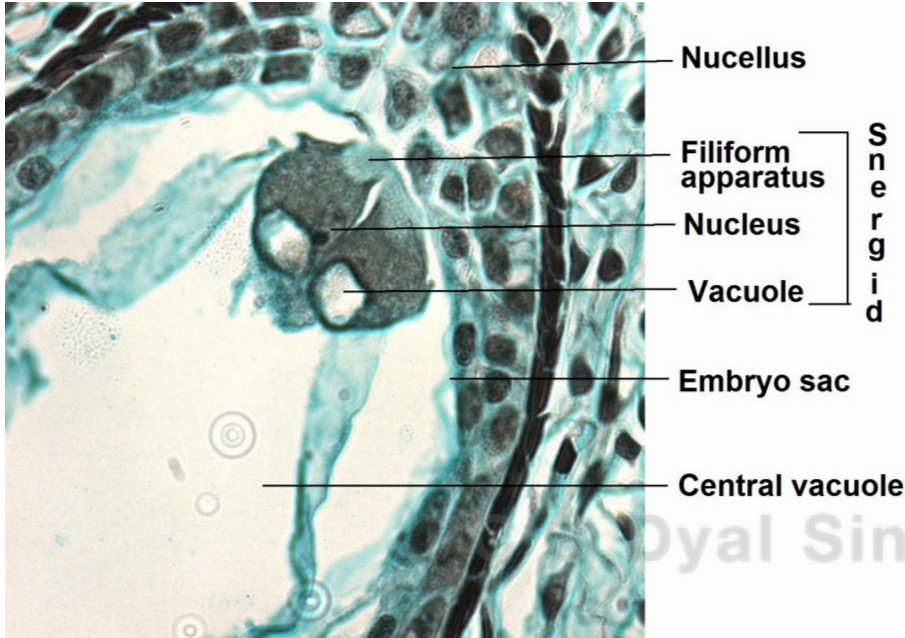
Coenomegaspore

Vacuoles

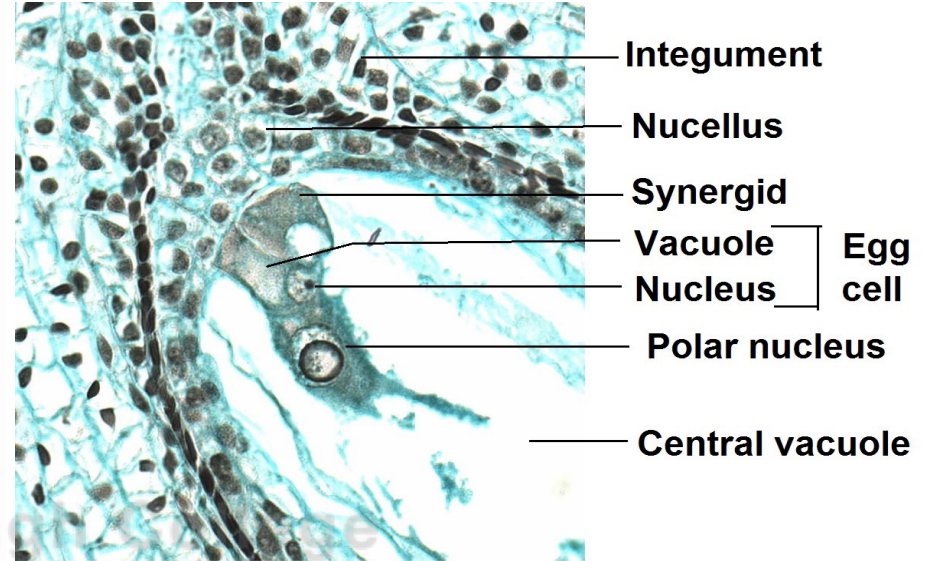
Triploid Nuclei at chalazal region

L.s. ovule with coenomegaspore

CELLS OF EGG APPARATUS



L.s. ovule showing two synergids



L.s. ovule showing micropylar region of embryo sac



***Commelina forskaolii* with aerial and underground flowers**

(Aerial spathe contains a monochasial inflorescence of generally 3 or 4 flowers, first flower is a brightly coloured chasmogamous male flower, second a brightly coloured chasmogamous bisexual flower, 3 and 4 pale cleistogamous bisexual flowers)



Video of explosive ejection of pollen grains in *Pouzolzia zeylanica*

STAMEN



Apical pore

Anther

Basal pore

Anther

Senna occidentalis



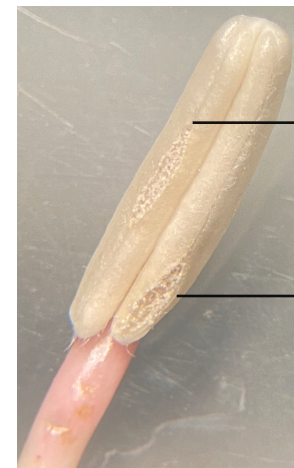
Cassia roxburghii



Horizontal line of dehiscence

Dehisced anther

Phyllanthus amarus



Longitudinal line of dehiscence

Anther

Bauhinia variegata

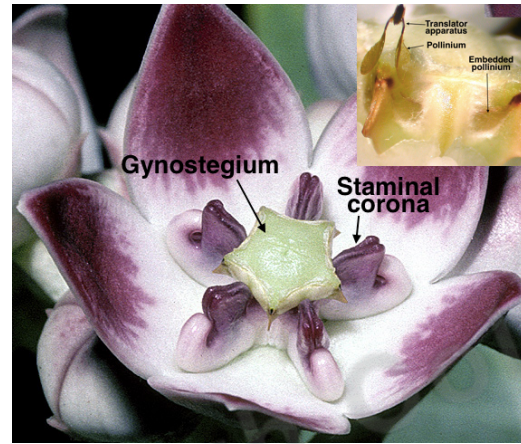
CONTRIVANCES FOR CROSS POLLINATION

Chasmogamy and Decliny



Jatropa

Herkogamy



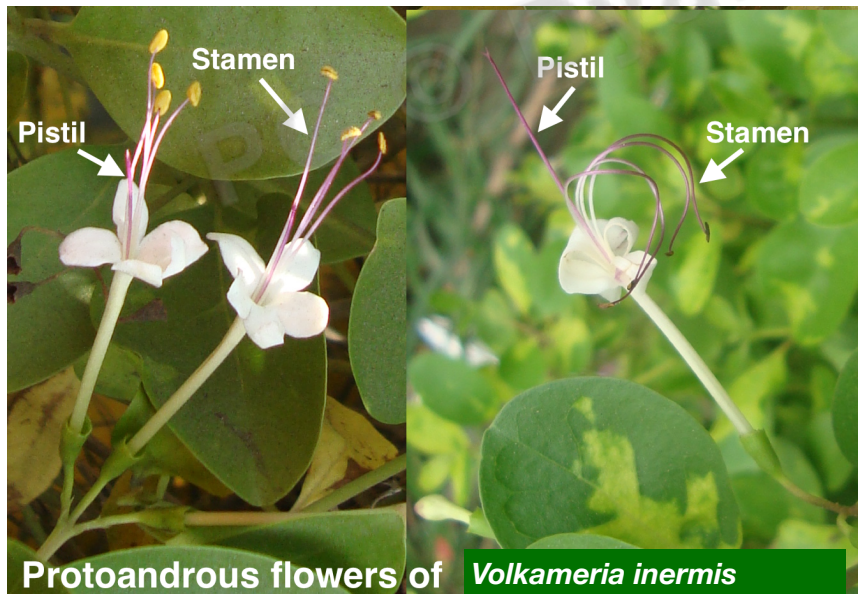
Calotropis

Heterostyly



Primula

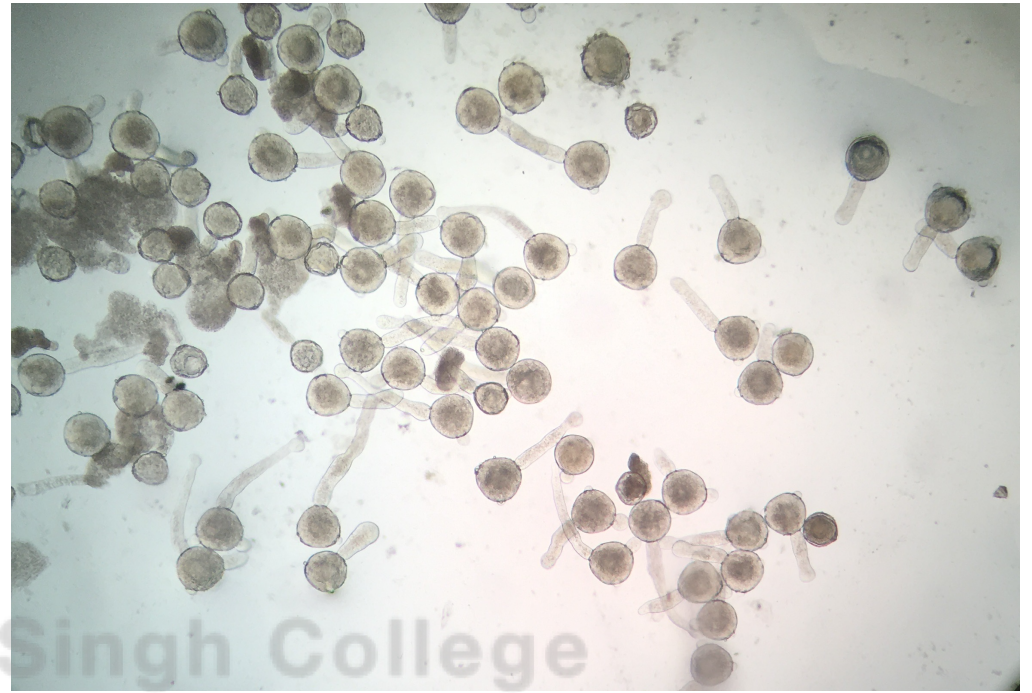
Dichogamy and Herkogamy



Pollen Germination

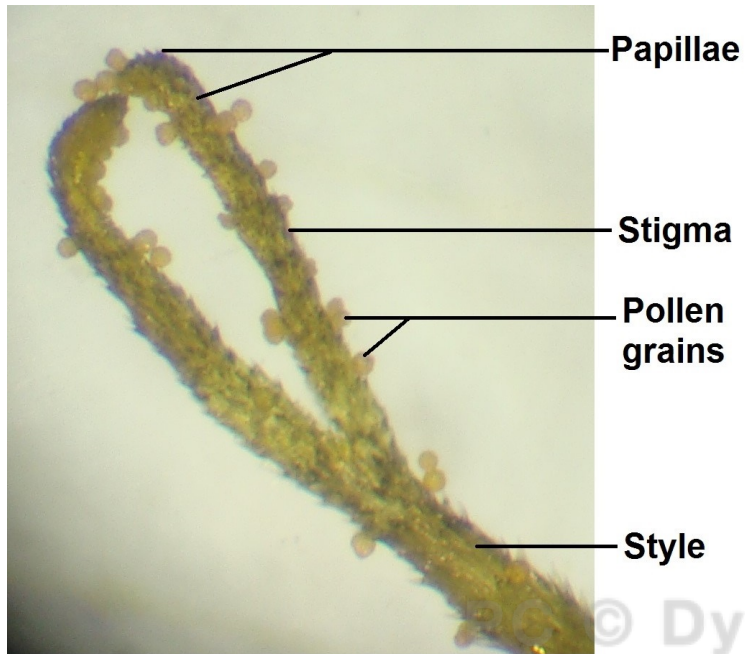


Germinating pollen grains of
Impatiens balsamina

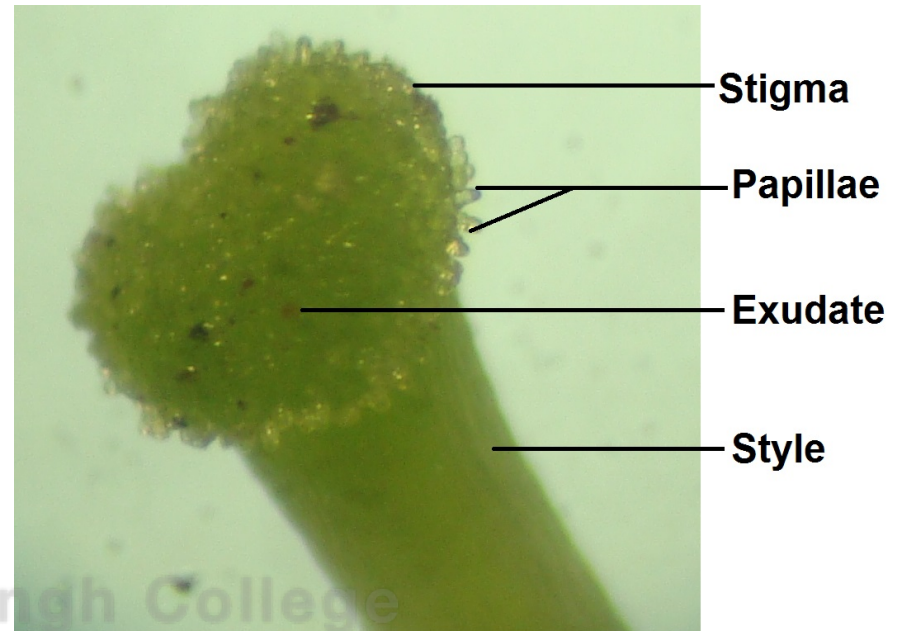


Germinating pollen grains of
Catharanthus roseus

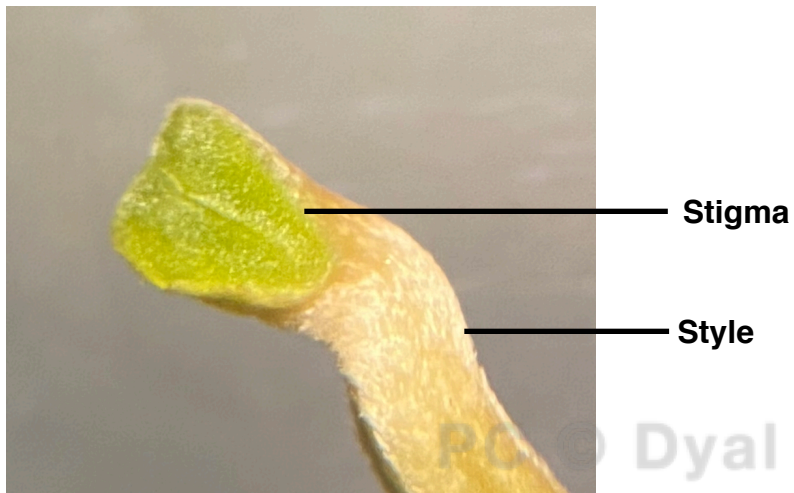
STIGMA TYPES



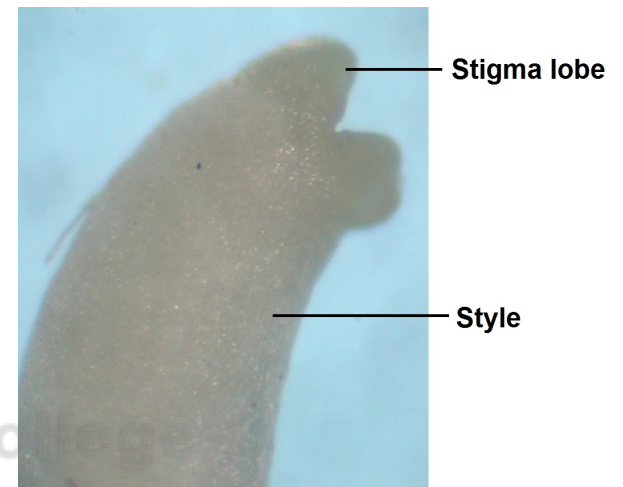
Dry papillate stigma of *Sonchus*



Wet papillate stigma of *Solanum*



Dry stigma of *Bauhinia purpurea*



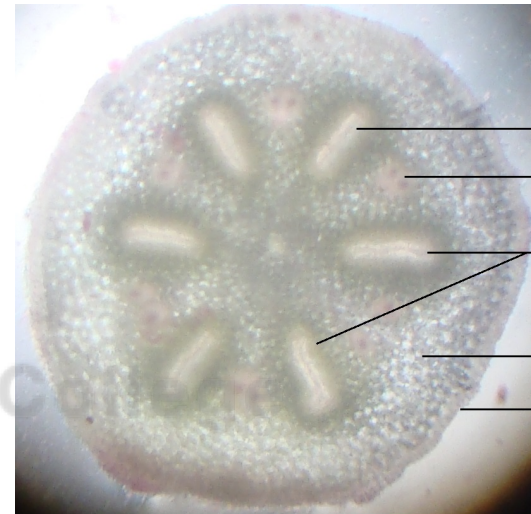
Dry stigma of *Justicia*

STYLE TYPES



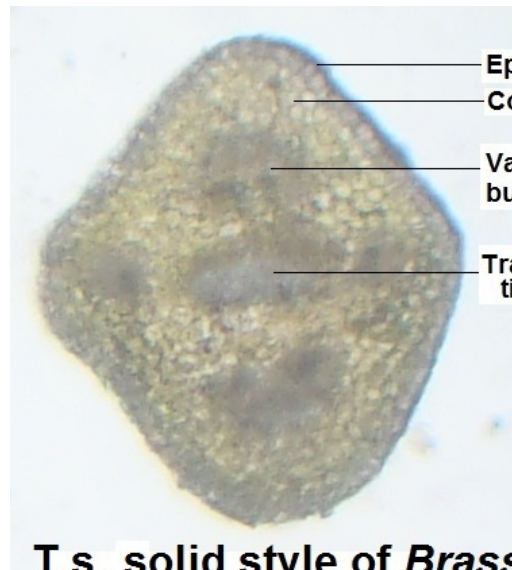
- Epidermis
- Cortex
- Canal
- Secretory layer
- Vascular bundle

T.s. hollow style of *Tropaeolum majus*



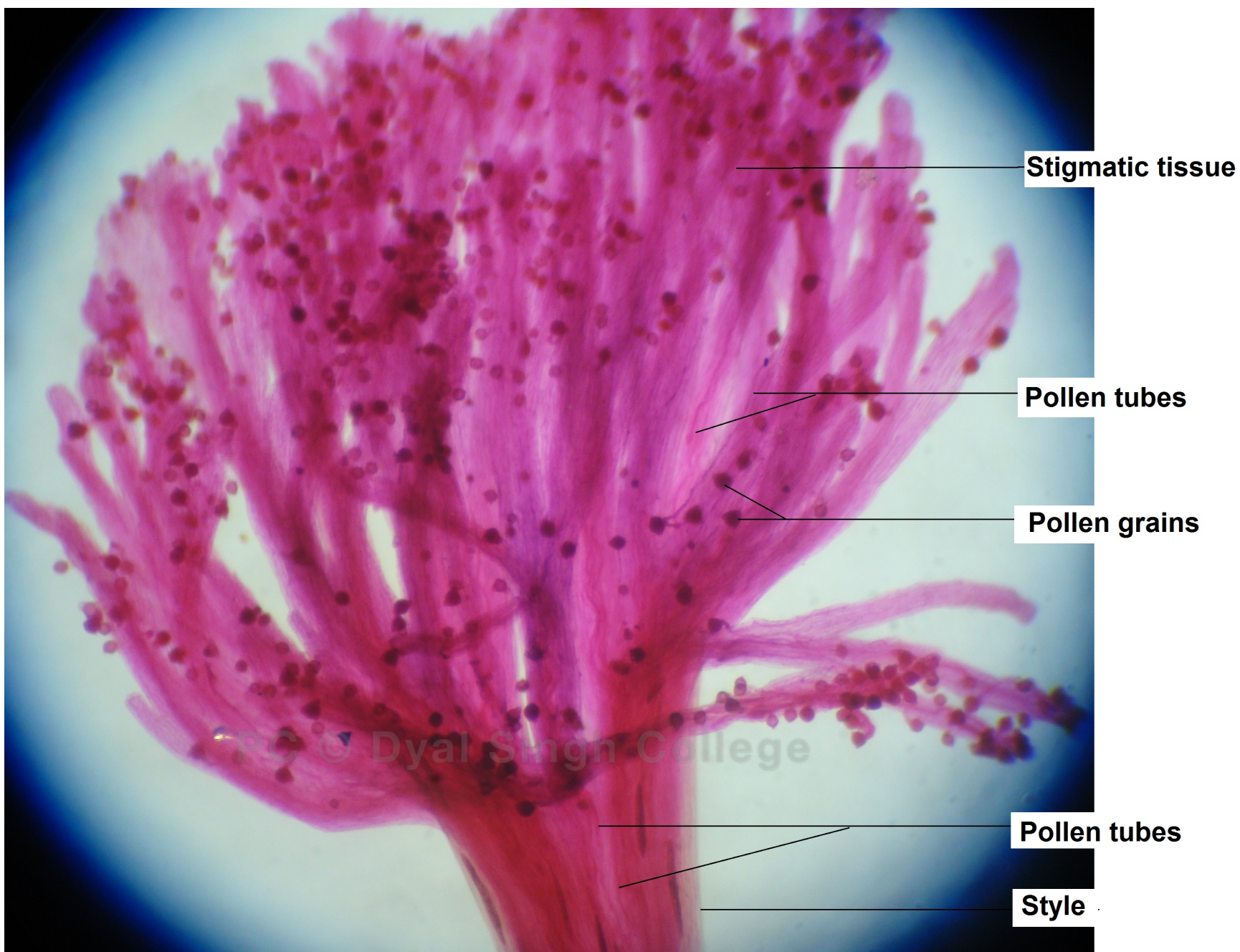
- Secretory layer
- vascular bundles
- Canals
- Cortex
- Epidermis

T.s. Hollow style of *Citrus*



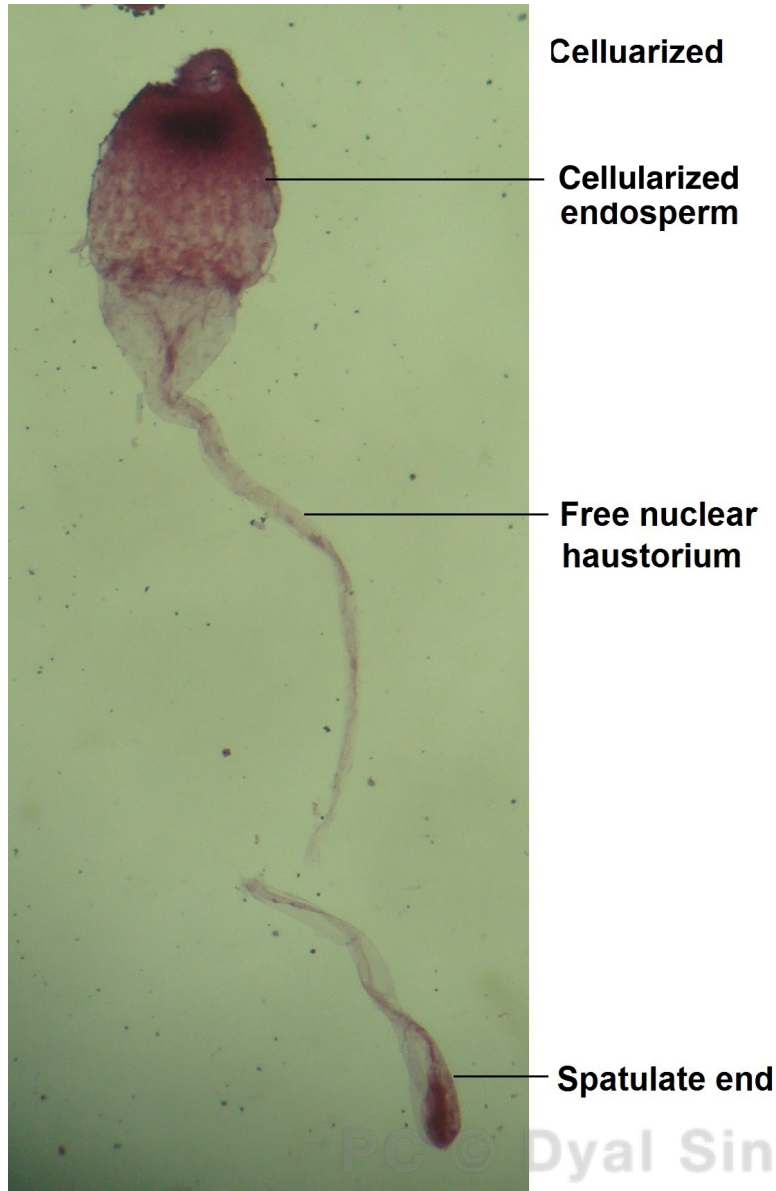
- Epidermis
- Cortex
- Vascular bundle
- Transmitting tissue

T.s. solid style of *Brassica*

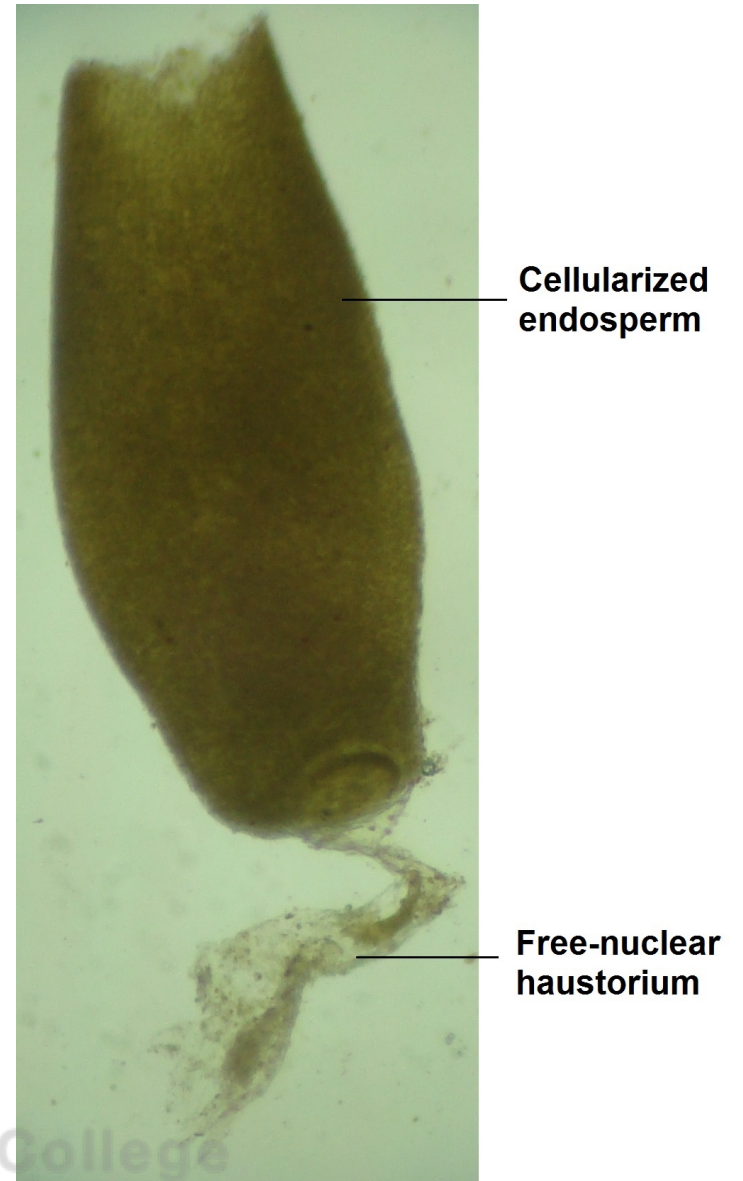


Pollen tubes in cleared stigmatic and stylar tissue

YOUNG DISSECTED ENDOSPERM

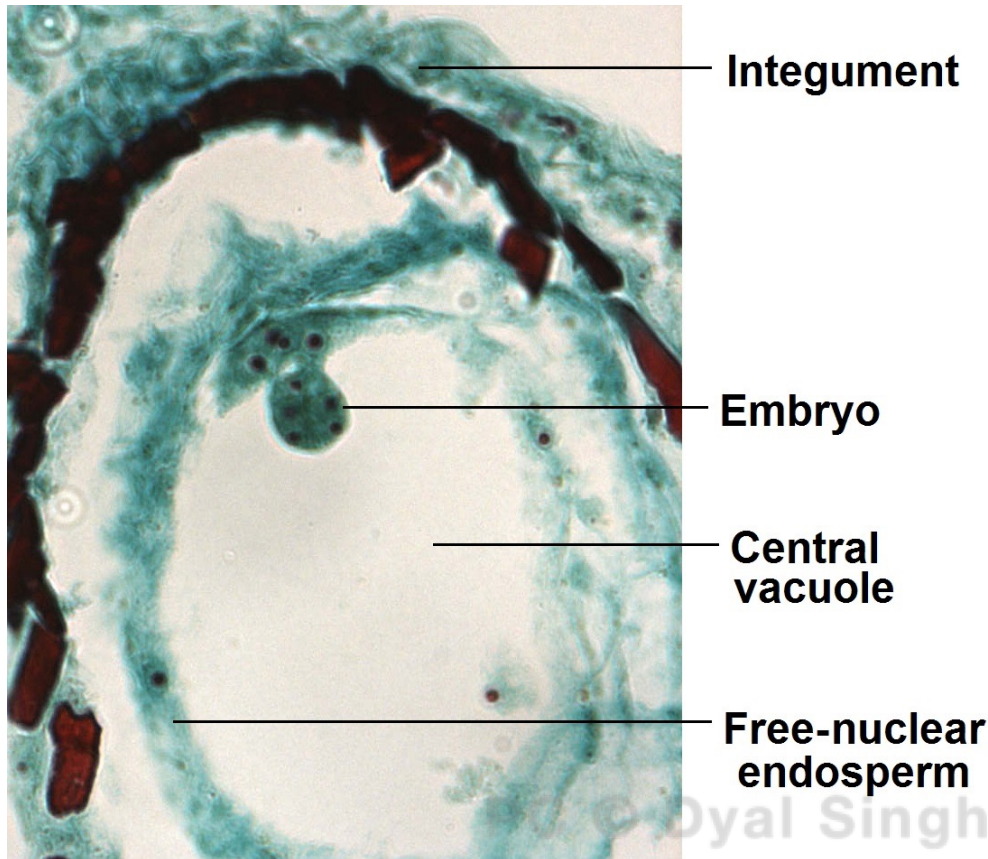


**W.m. endosperm of
*Cucumis sativus***

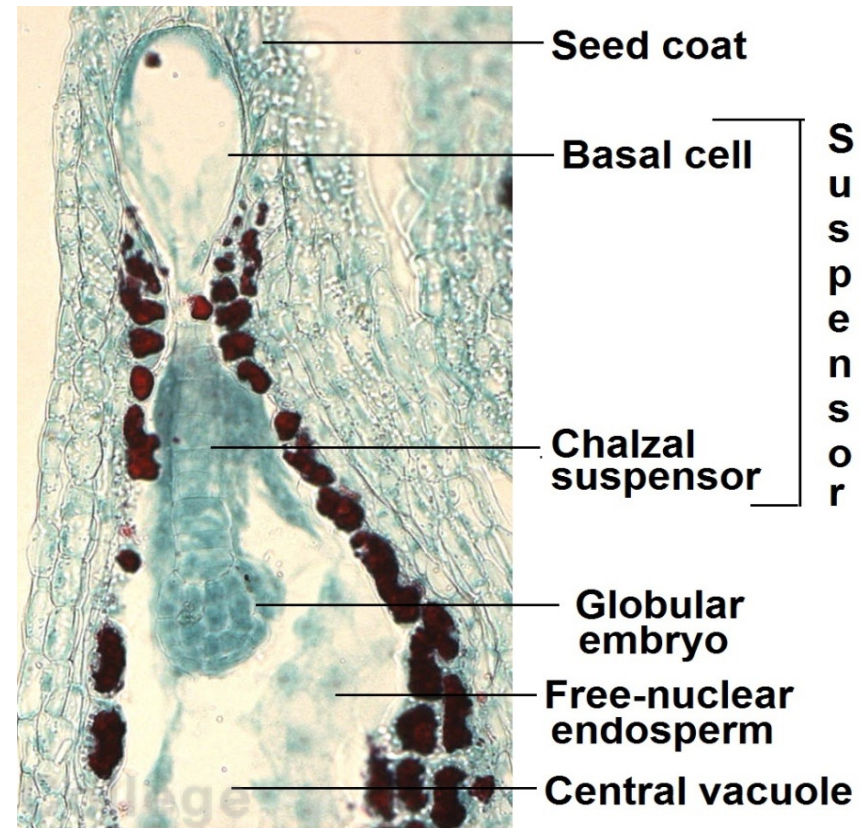


**W.m. endosperm of
*Senna occidentalis***

EMBRYO DEVELOPMENT IN *Capsella bursa-pastoris*

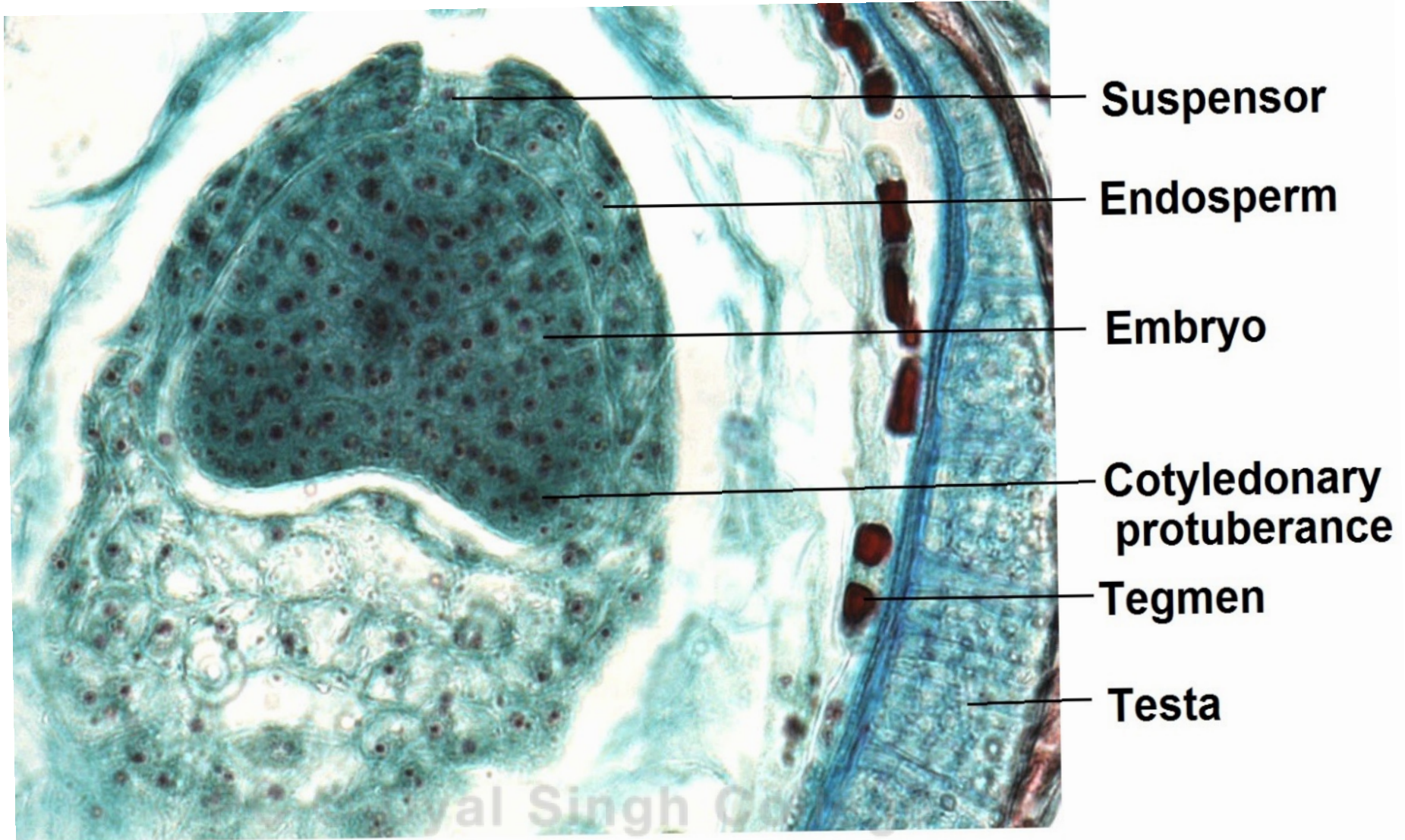


L.s. fertilized ovule with proembryo



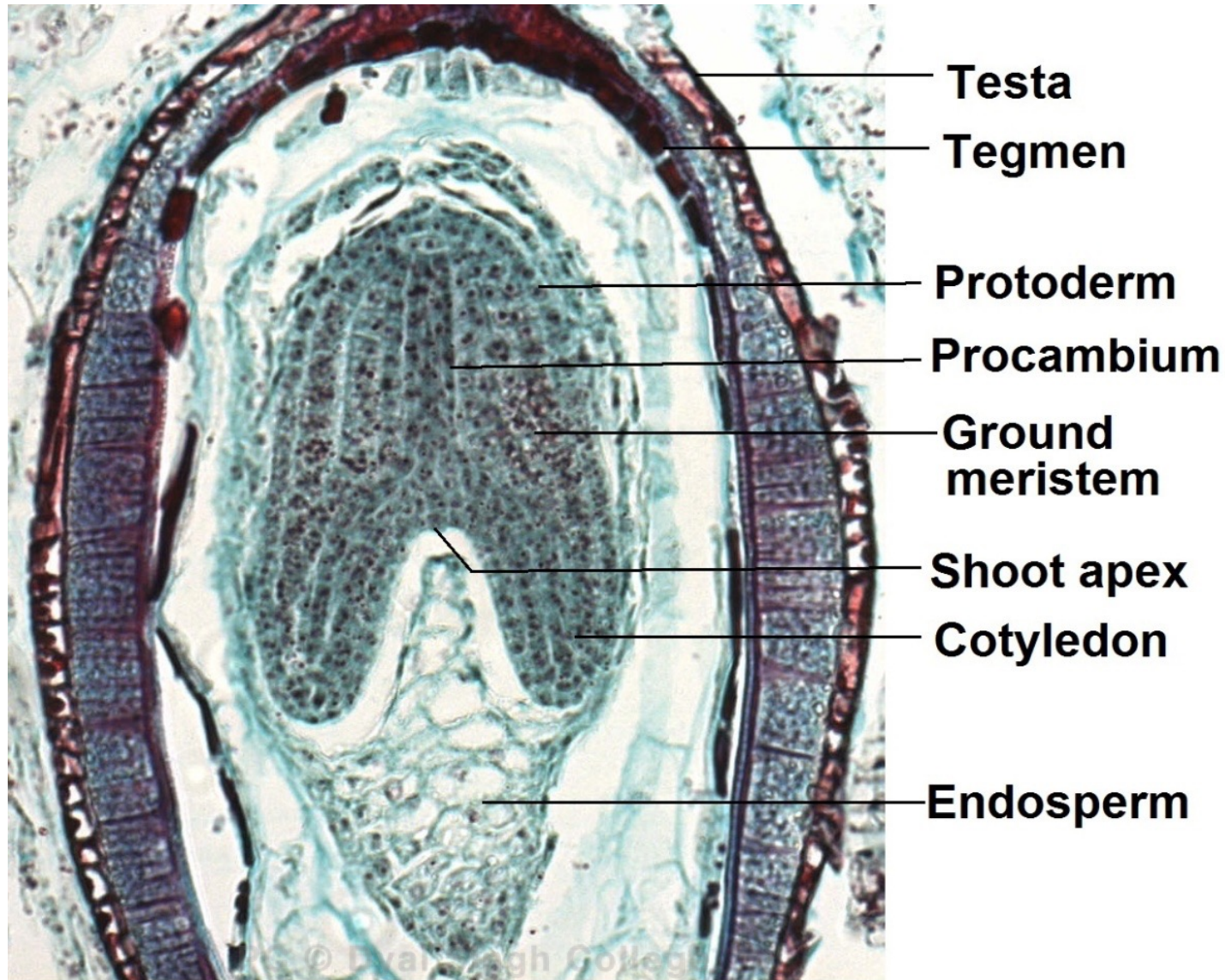
L.s. young seed with globular embryo

EMBRYO DEVELOPMENT IN *Capsella bursa-pastoris*



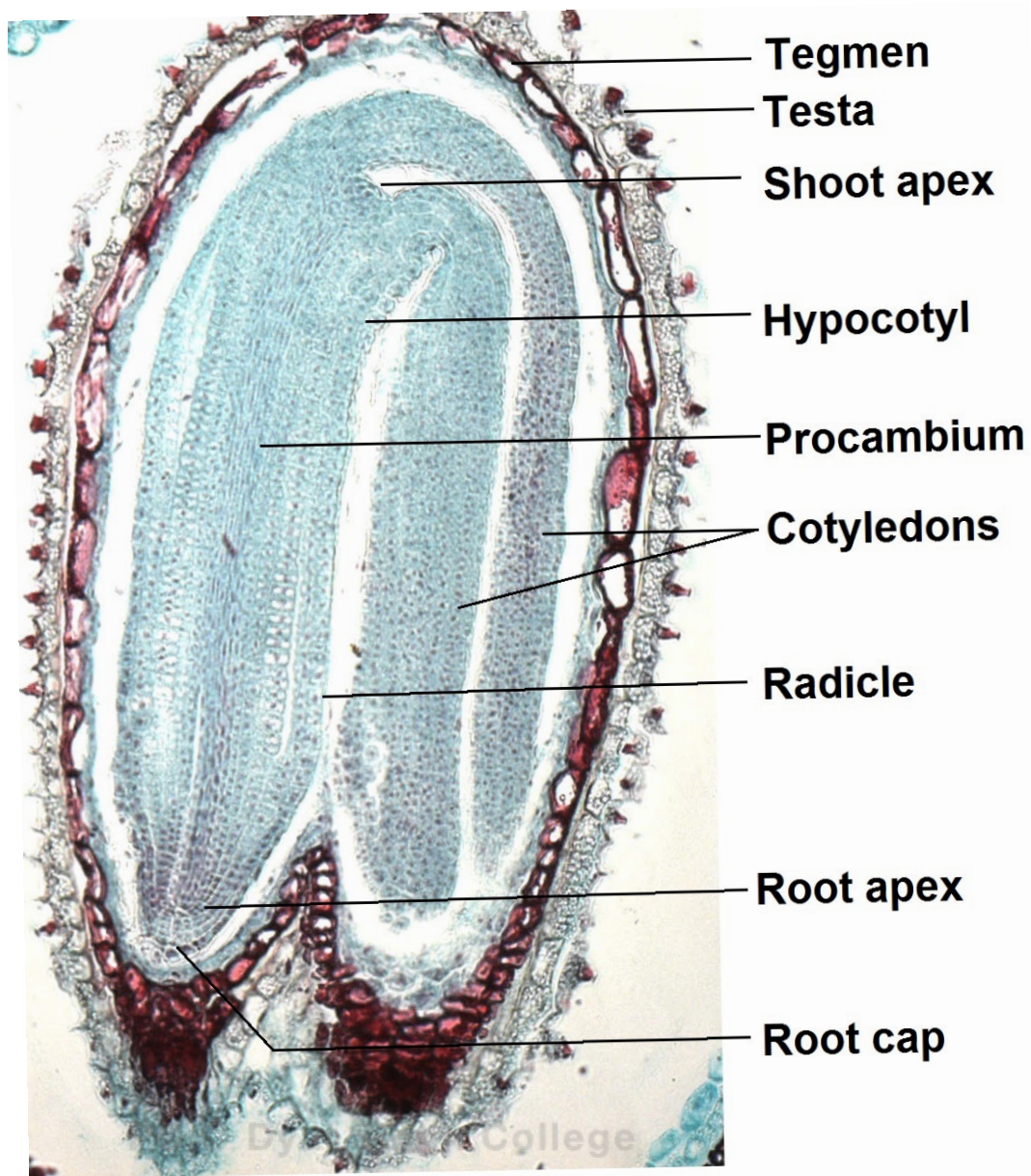
T.s. young seed with heart-shaped embryo

EMBRYO DEVELOPMENT IN *Capsella bursa-pastoris*



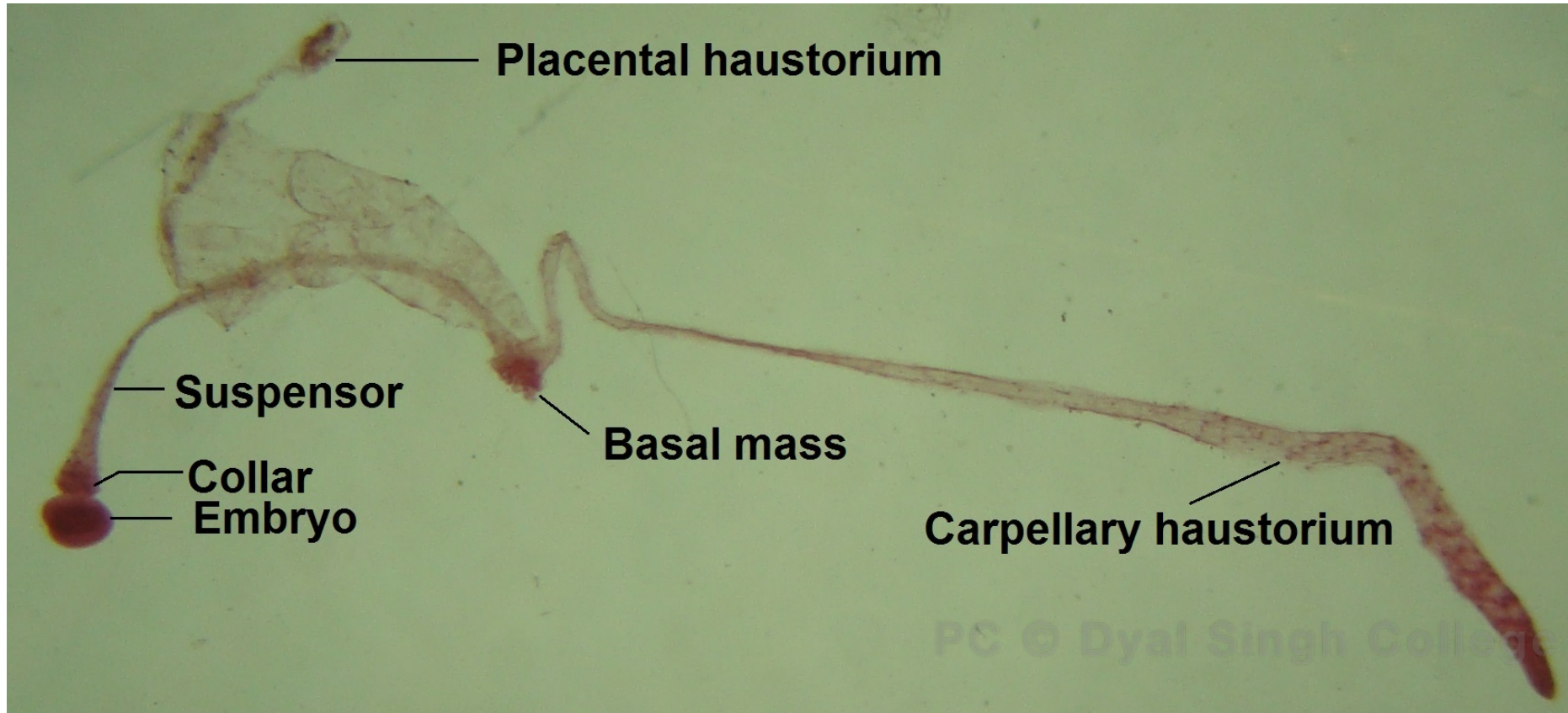
L.s. young seed with torpedo-shaped embryo

EMBRYO DEVELOPMENT IN *Capsella bursa-pastoris*



L.s. Mature dicotyledonous seed

EMBRYO WITH SUSPENSOR HAUSTORIA



**W.m. embryo with suspensor haustoria of
*Tropaeolum majus***