



MSA UNIVERSITY
معة أكتوبر للعلوم الحديثة والآداب

Pharmacognosy

PHG 112

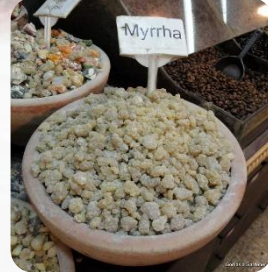
Spring 2026

Pharmacognosy

PHG 112



potato tubers



Myrrh



ginger rhizome

Spring 2026

Lab 3



Intended Learning Outcomes (ILOs)

By the end of this laboratory session, students will be able to:

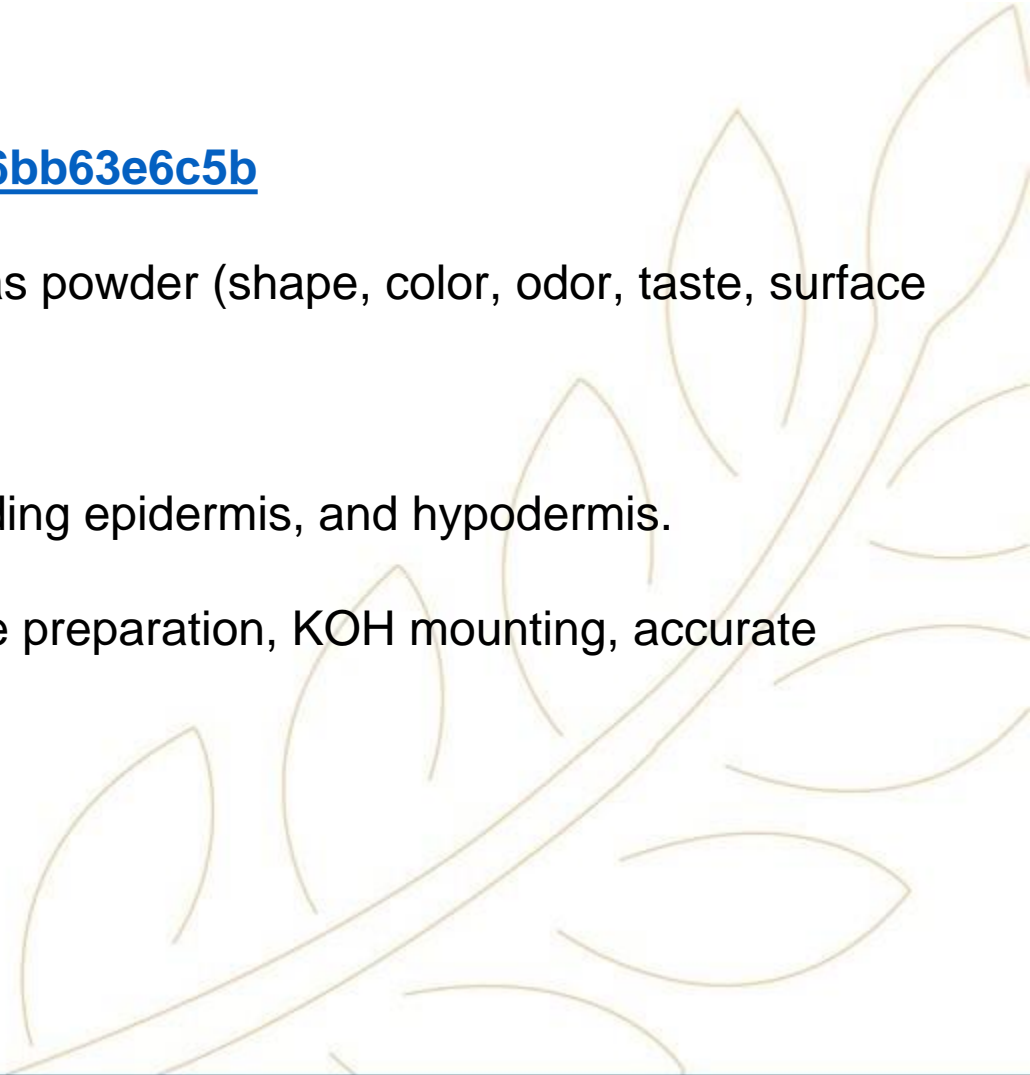
1. Performing formative quiz on previous labs (Seeds):

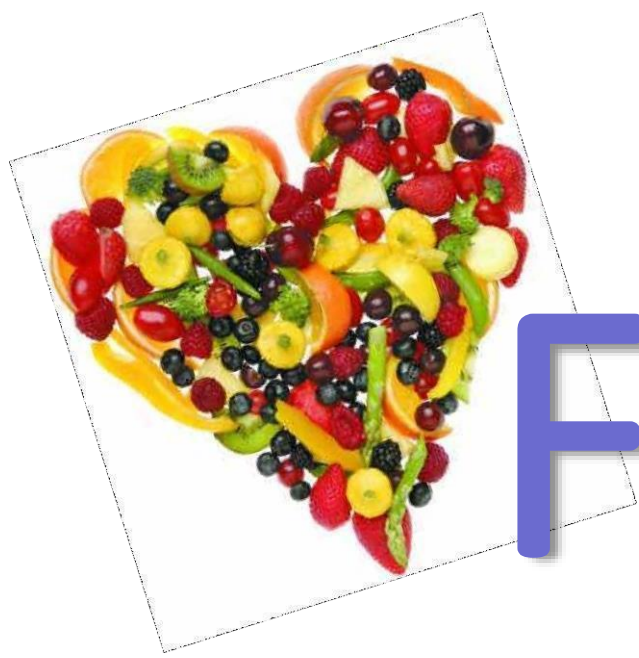
<https://wayground.com/admin/activity/classic/6999d7fee5804a6bb63e6c5b>

2. Describe the macroscopic morphology of *Fennel* entire and as powder (shape, color, odor, taste, surface characters, and scars).

3. Identify the microscopic diagnostic features of *Fennel*, including epidermis, and hypodermis.

4. Apply proper laboratory skills and safety rules, including slide preparation, KOH mounting, accurate drawings, waste disposal, and lab conduct.



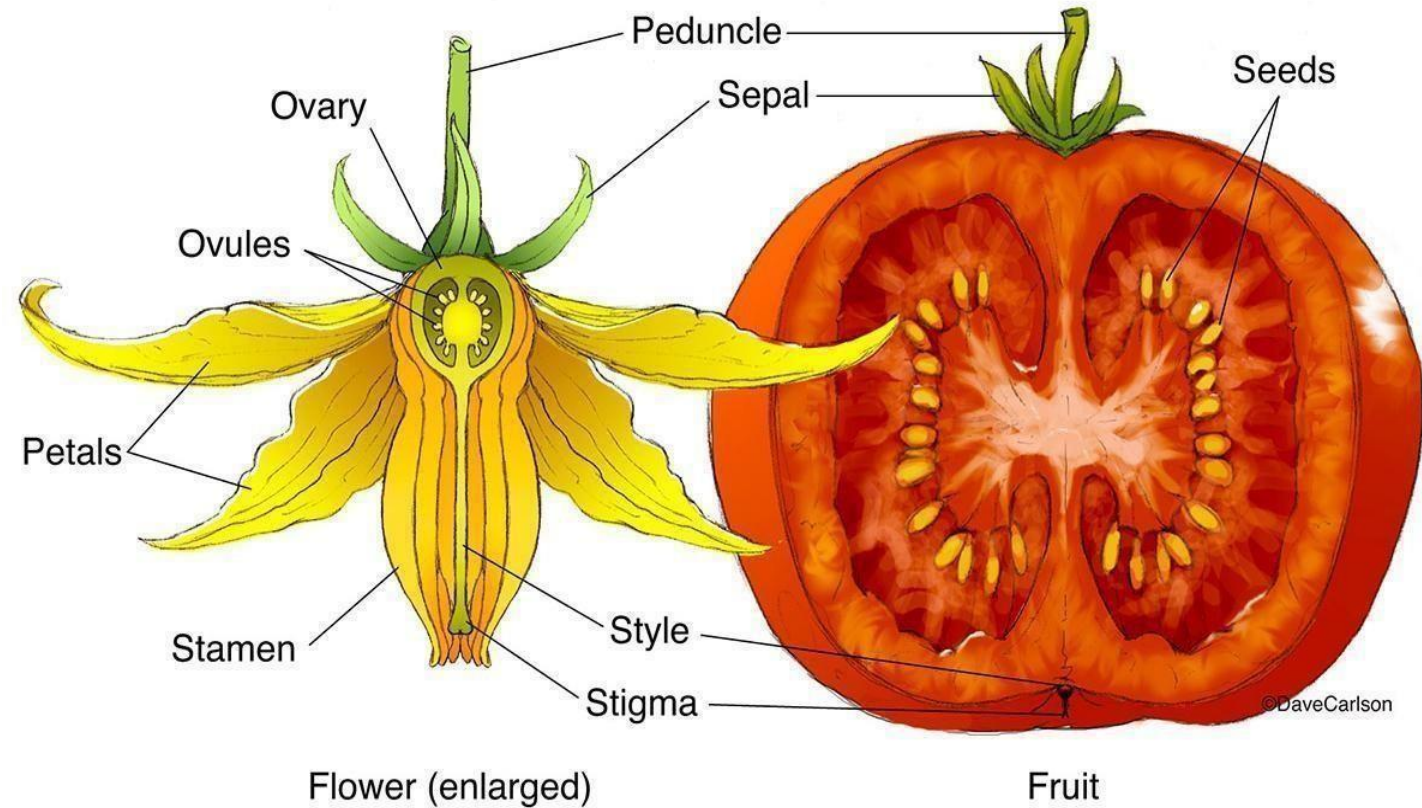


Fruits



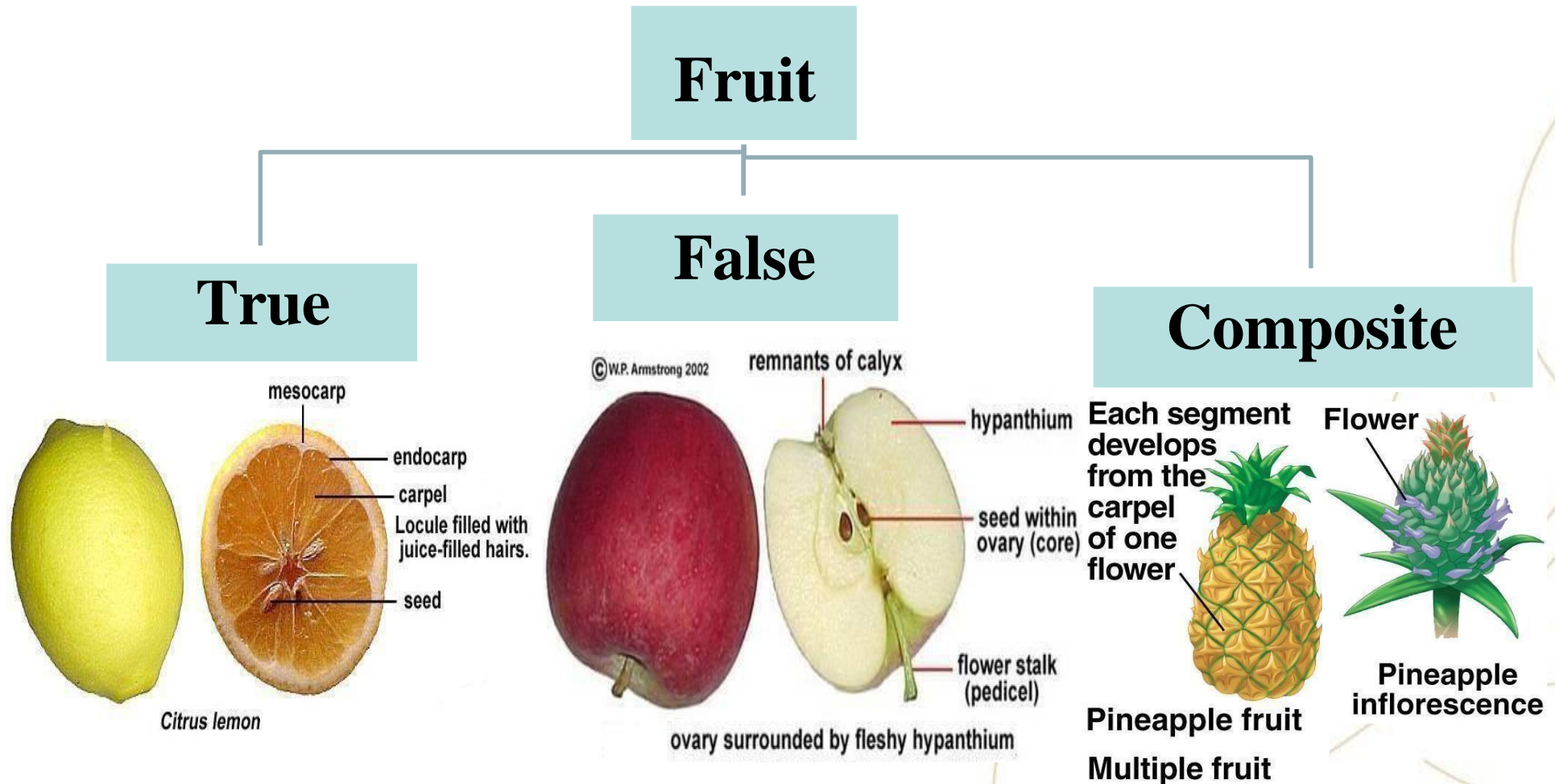
Definition:

The whole product of development of gynaecium after fertilization



Classification

- According to the floral parts used:

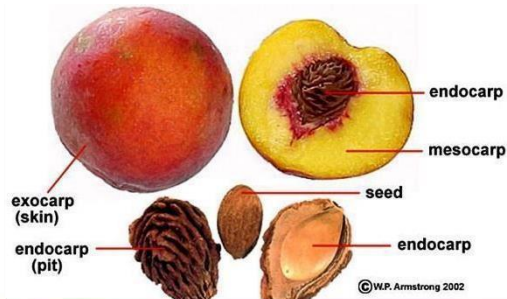
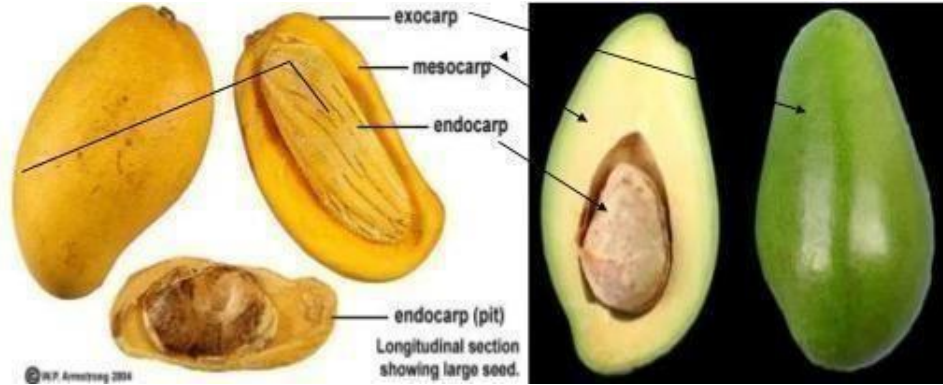


Classification

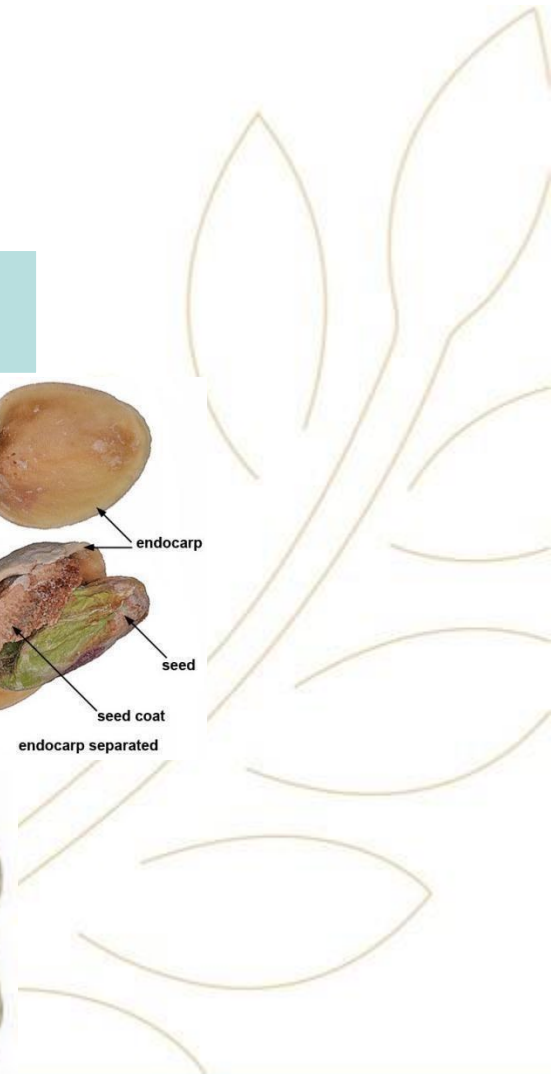
- According to the type of pericarp:

Simple

Succulent

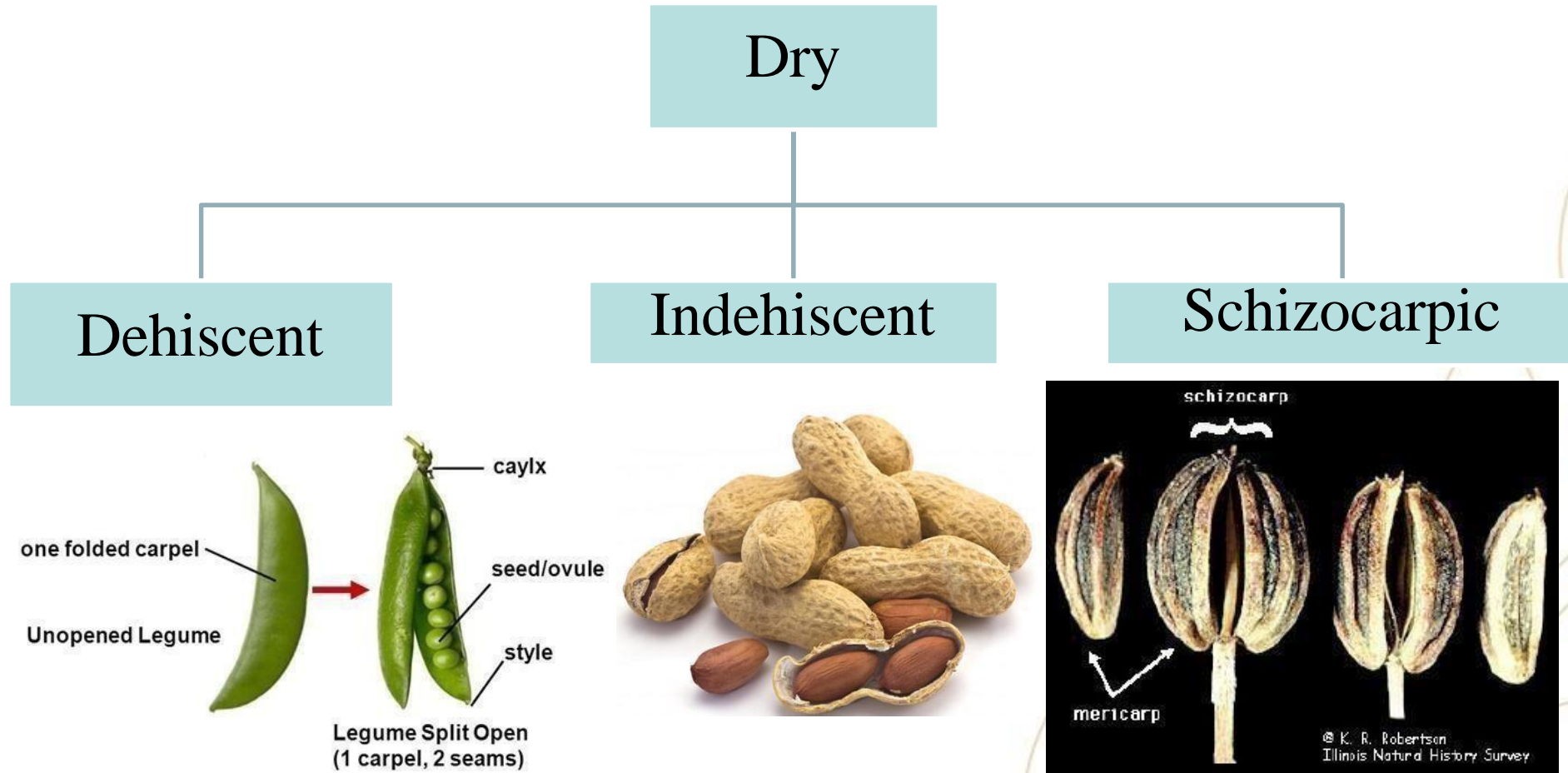


Dry



Classification

- According to the behaviour after ripening:



Fennel

- Origin:

It is the dried ripe fruits of *Foeniculum vulgare* family Apiaceae (Umbelliferae).



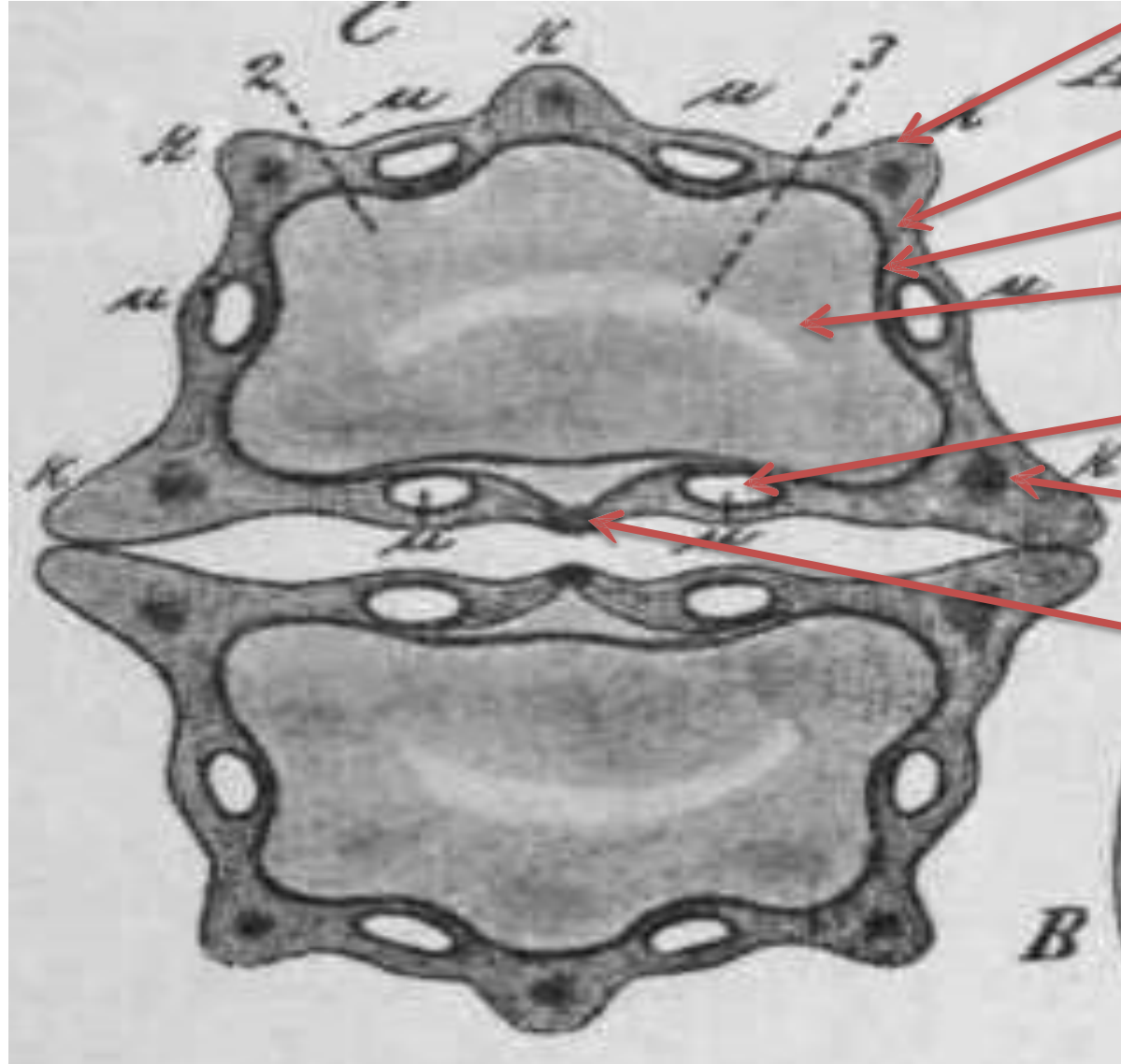
Morphology:

- **Shape:** Cylindrical
- **Colour:** Yellowish green
- **Odor:** Aromatic
- **Taste:** Sweet taste
- **Surface:** Glabrous

Primary ridge
Secondary ridge



T.S.



pericarp

mesocarp

endocarp

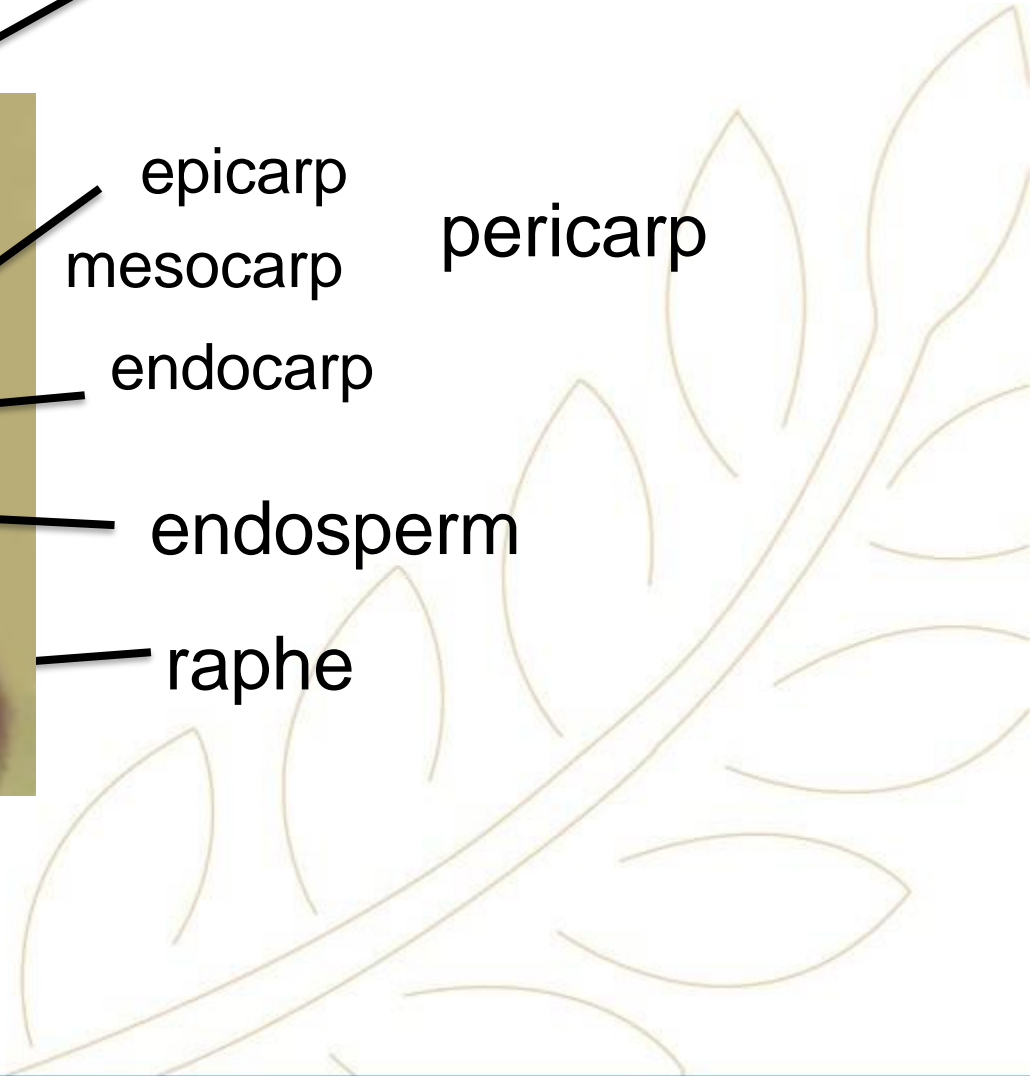
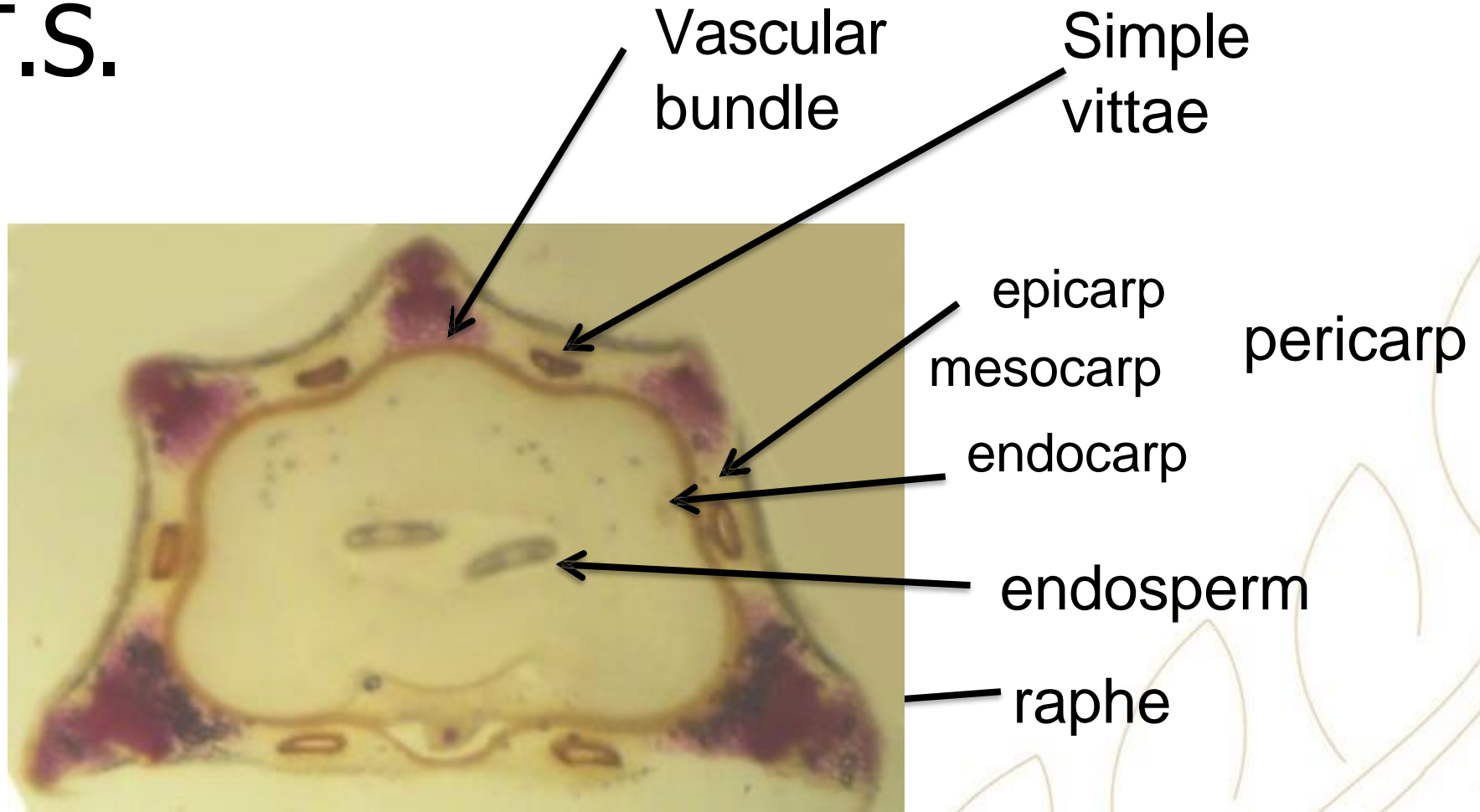
endosperm

vittae

Vascular

bundle raphe

T.S.



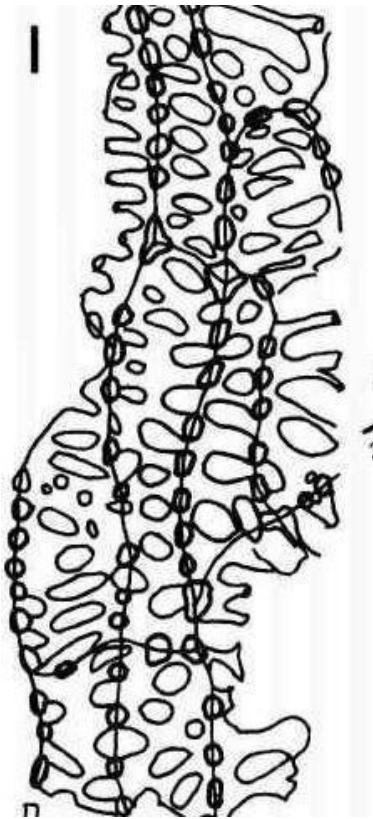
Powder:

- **Condition:** Fine powder
- **Colour:** Yellowish green
- **Odour:** Aromatic odour
- **Taste:** Aromatic taste

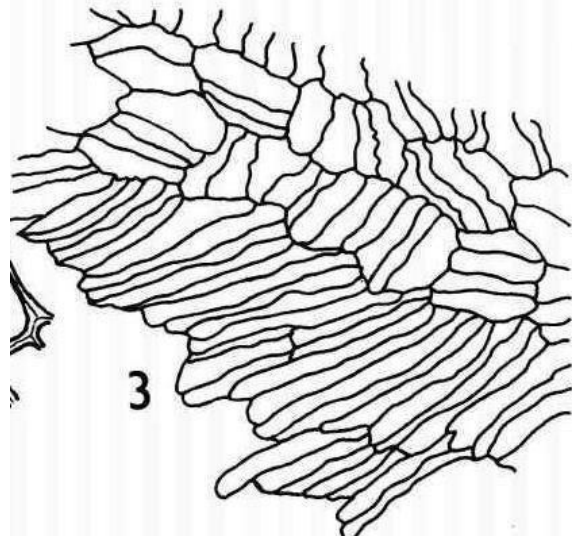


Key elements:

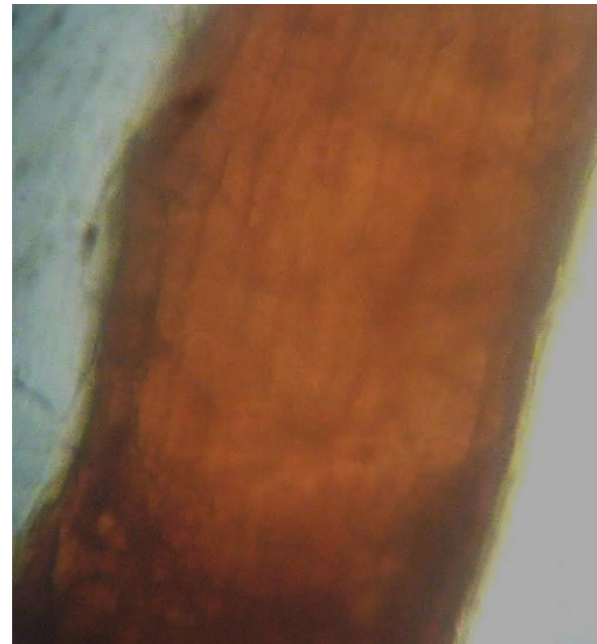
**Reticulate lignified
parenchyma**



Parquetry endocarp

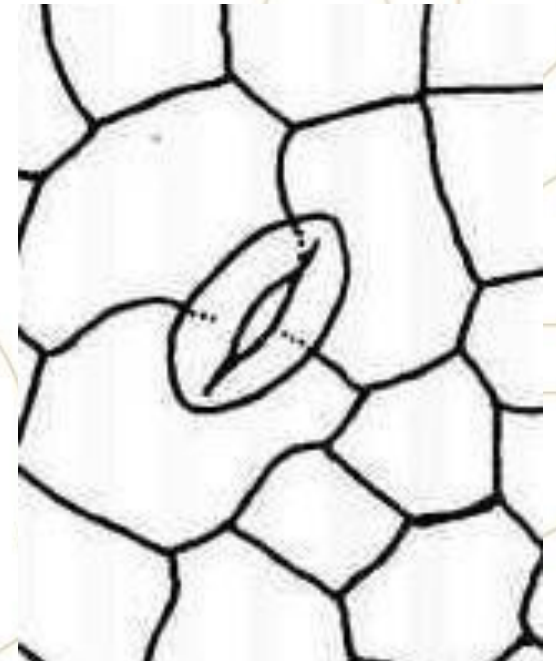


Simple vittae



Epicarp

Straight wall, smooth
cuticle,
anomocytic
stomata.

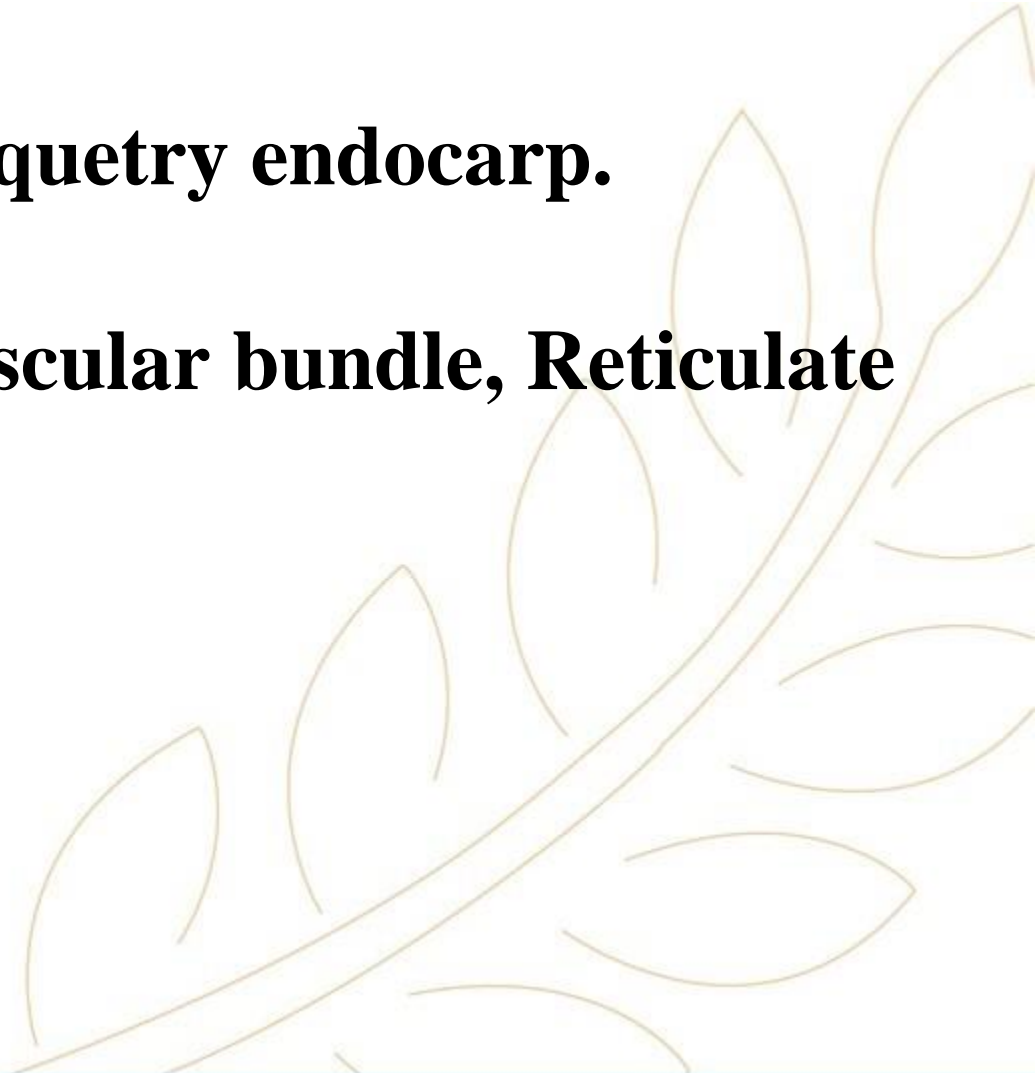


Microscopical Character:

Mount in KOH: Simple vittae and Parquetry endocarp.

Mount in Phlouroglucinol : Raphe, Vascular bundle, Reticulate lignified parenchyma and Carpophore

Mount in Water: xylem vessels.



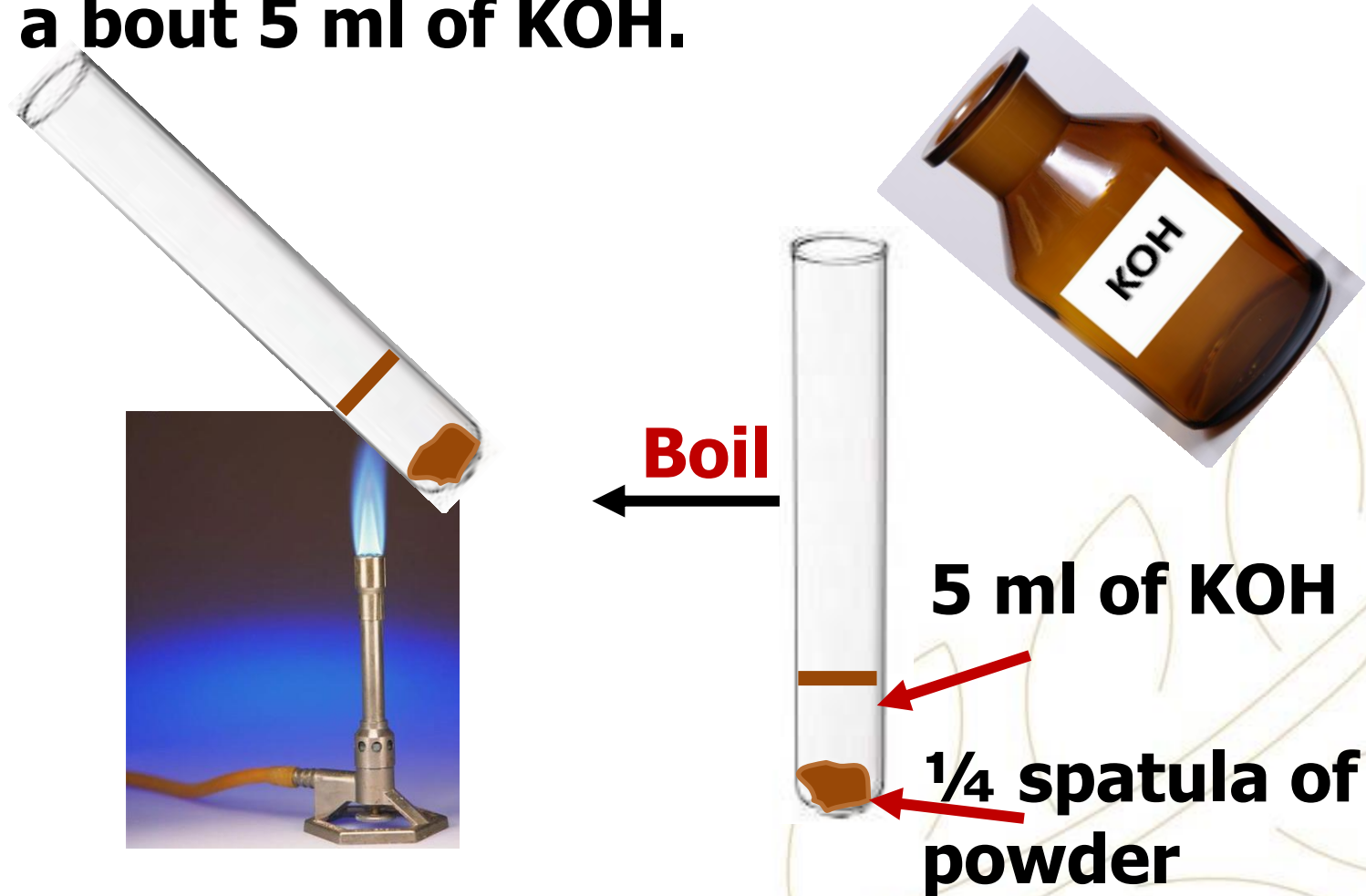
Uses

1. **Carminative** (relative the associated pain and cramping in GIT).
2. **Lactagogue.**
3. **Mild expectorant.**
4. **Aid to weight loss.**



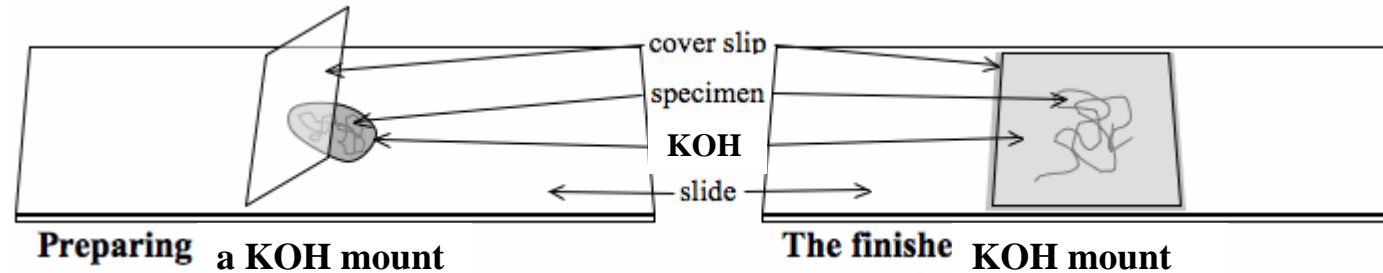
Practical work:

1- Boil a quarter spatula of the powdered seed in a bout 5 ml of KOH.



Practical work:

2- Prepare your slide and check the key elements.



3- Complete your drawings.

P.S.



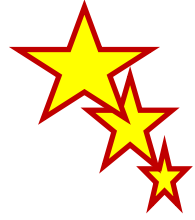
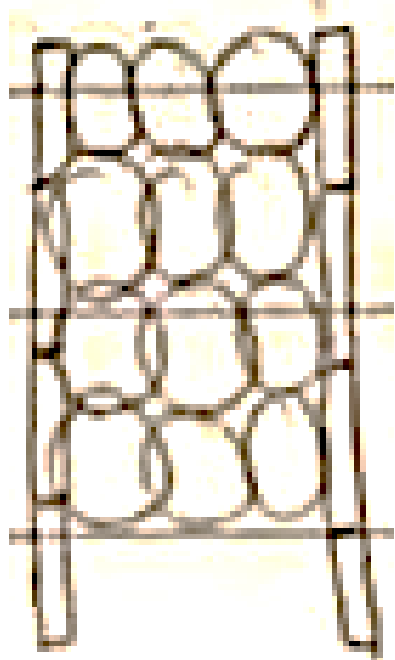
Keep your work place and tools clean.

Dispose the left KOH in the container not in the sink.

Main Key Elements Drawings:

1

Simple vittae



2

Parquetry endocarp



3

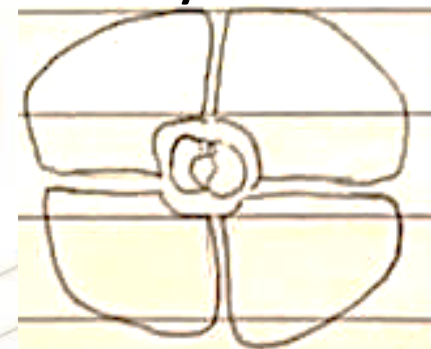
Reticulate lignified parenchyma



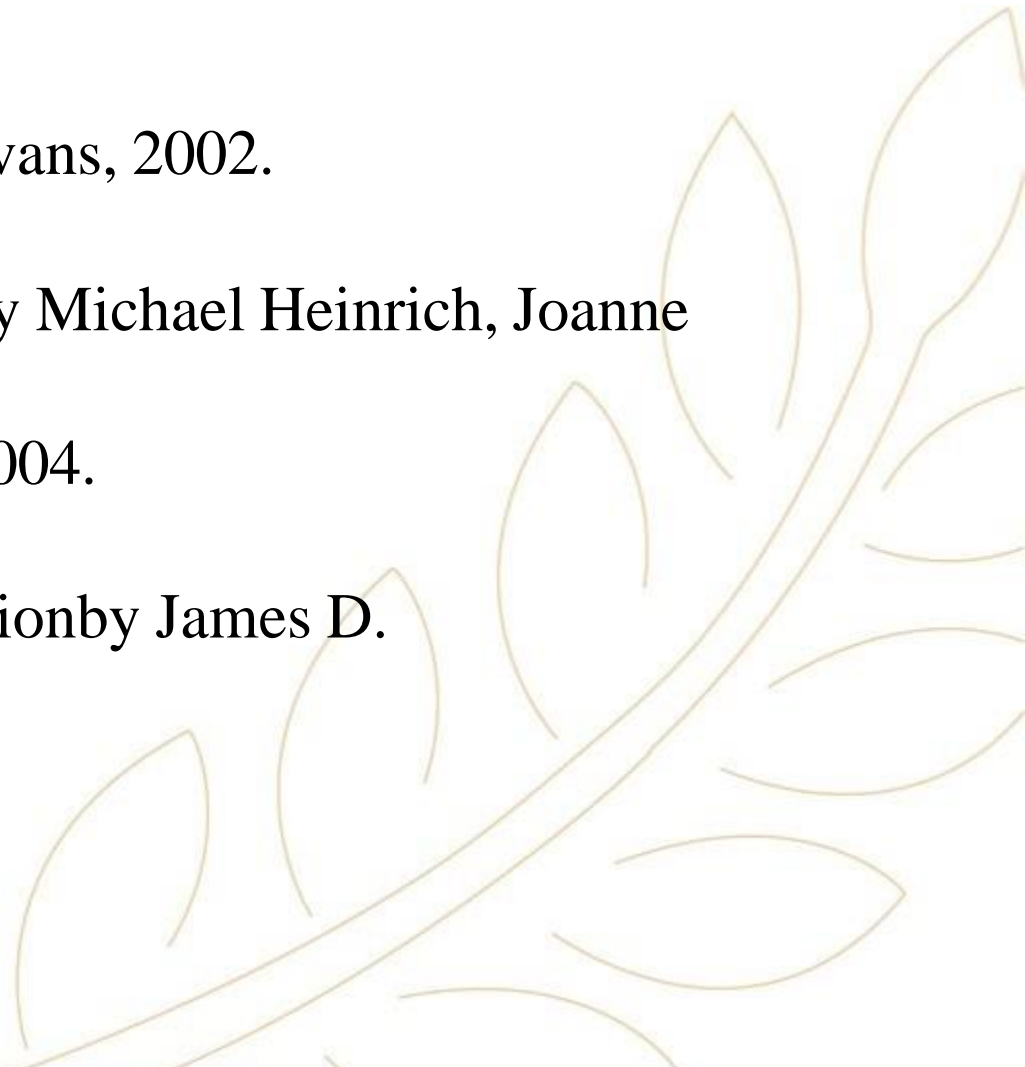
4

Epicarp

Straight wall, smooth cuticle, anomocytic stomata.



References:

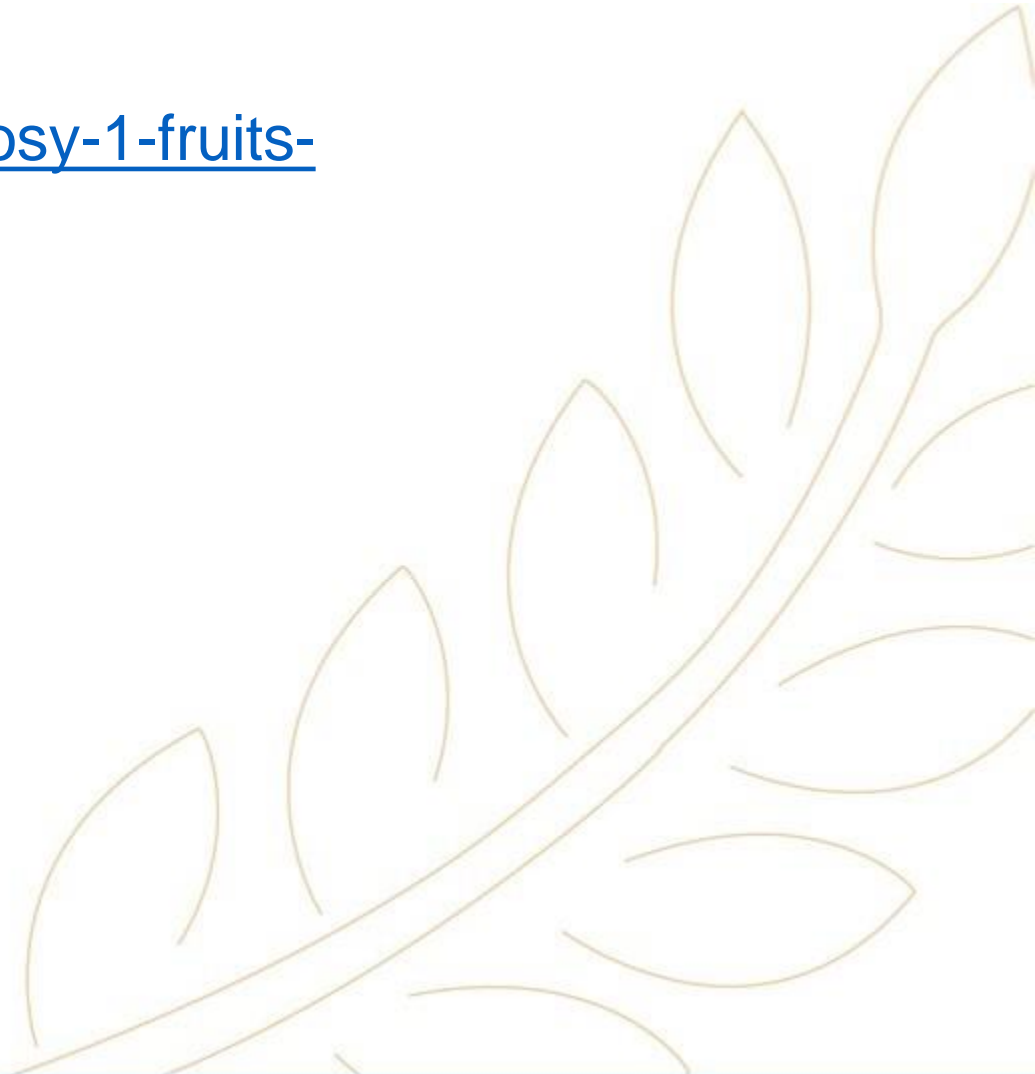
1. Trease & Evans' Pharmacognosy by William Charles Evans, 2002.
 2. Fundamentals of Pharmacognosy and Phytotherapy by Michael Heinrich, Joanne Barnes, Simon Gibbons, and Elizabeth M. Williamson, 2004.
 3. Botany :An introduction to Plant Biology, Third edition by James D. Mauseth, 2008.
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Useful links:

<https://www.slideshare.net/slideshow/pharmacognosy-1-fruits-introduction/256451637>

<https://www.youtube.com/watch?v=mjnJKuFv6X0>

https://www.youtube.com/watch?v=ob6Vgl2_TaQ



THANK YOU!