

Lab 4

Pharmacognosy

PHG112



The background features a dark blue gradient with a large, stylized green shape on the left side that resembles a leaf or a ribbon. On the right side, there is a faint, golden-brown outline of a branch with several leaves.

Faculty of **Pharmacy**

Vision

The Faculty of Pharmacy of October University for Modern Sciences and Arts is a pioneer in tutelage, scientific research, and community service at the local and regional levels, and holds an advanced position among its counterparts in international Pharmacy subject ranking

الرؤية

- كلية الصيدلة جامعة أكتوبر للعلوم الحديثة و الآداب كلية رائدة فى مجال التعليم و البحث العلمى و المشاركة المجتمعية على المستوى القومى و الإقليمى و لها ترتيب متقدم فى التصنيف العالمى لكليات الصيدلة.

Mission

•The Faculty of Pharmacy of October University for Modern Sciences and Arts is nationally accredited, has British partnership, and is committed to producing graduates who are able to compete in national and international job markets and entrepreneurship, and to be an effective member of the medical team providing best medical care, while heeding professional ethics, through an outstanding academic programme and proficient academic staff. The faculty is devoted also to provide effective community services, and exceptional applied scientific research.

الرسالة

• كلية الصيدلة جامعة أكتوبر للعلوم الحديثة والآداب معتمدة محليا، بشراكة بريطانية، تلتزم بتخريج صيدلى قادر على المنافسة فى أسواق العمل المحلية و الدولية و قيادة الأعمال، و أن يكون عضو فعال فى الفريق الطبى بتقديم أفضل رعاية صحية، مراعىاً أخلاقيات المهنة، من خلال برنامج تعليمى متميز و أعضاء هيئة تدريس أكفاء، وكذلك تلتزم الكليه بتقديم خدمات مجتمعية فعالة و أبحاث علمية تطبيقية متميزة.

Pharmacognosy

PHG112

Items	Marks
Quizzes	5 Marks
Assignment	15 Marks (10+5)
Practical Exam(s)	40 Marks (15+15+10)
Mid Term Exam	30 Marks
Final Exam	60 Marks
TOTAL	150 Marks



Pharmacognosy

PHG112

RULES

- Lab evaluation –10 marks
- Attendance
 - (only 15 min late is allowed)
 - (sign for yourself).
- Lab coat:
 - (not allowed to be in the lab without it).
 - (take it on and off before and after you get to the lab).
- Drawing:
 - (during the lab time).
 - (in a specific note using pencil).



Pharmacognosy PHG112 RULES

- Lab evaluation --10 marks
- Work place and tools:

- (waste disposal → don't throw anything in the **Sink**).
- (microscope → **switch it OFF**).

- Behavior:

- (may get you to loose the whole 5 marks).



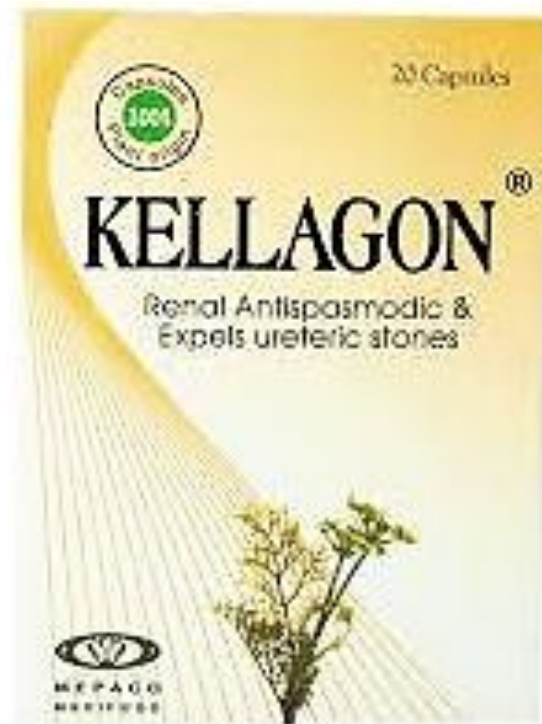
Ammi visnaga

Origin:

It is the dried ripe fruit of *Ammi*

visnaga

family Apiaceae



Morphology:

Shape: Small ovoid

Colour: Brownish green with violet tinge

Odour: Slightly aromatic

Taste: Bitter

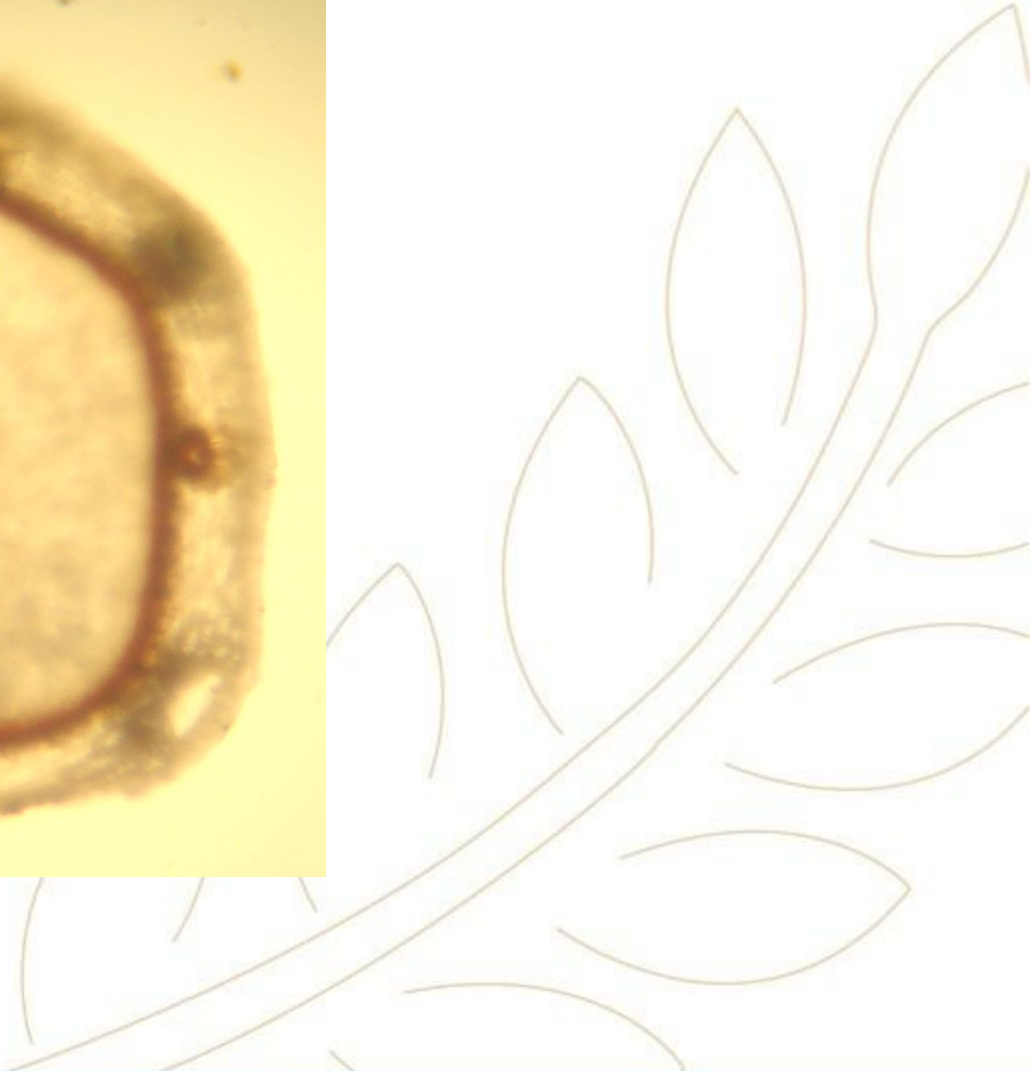
Surface:

Primary ridge

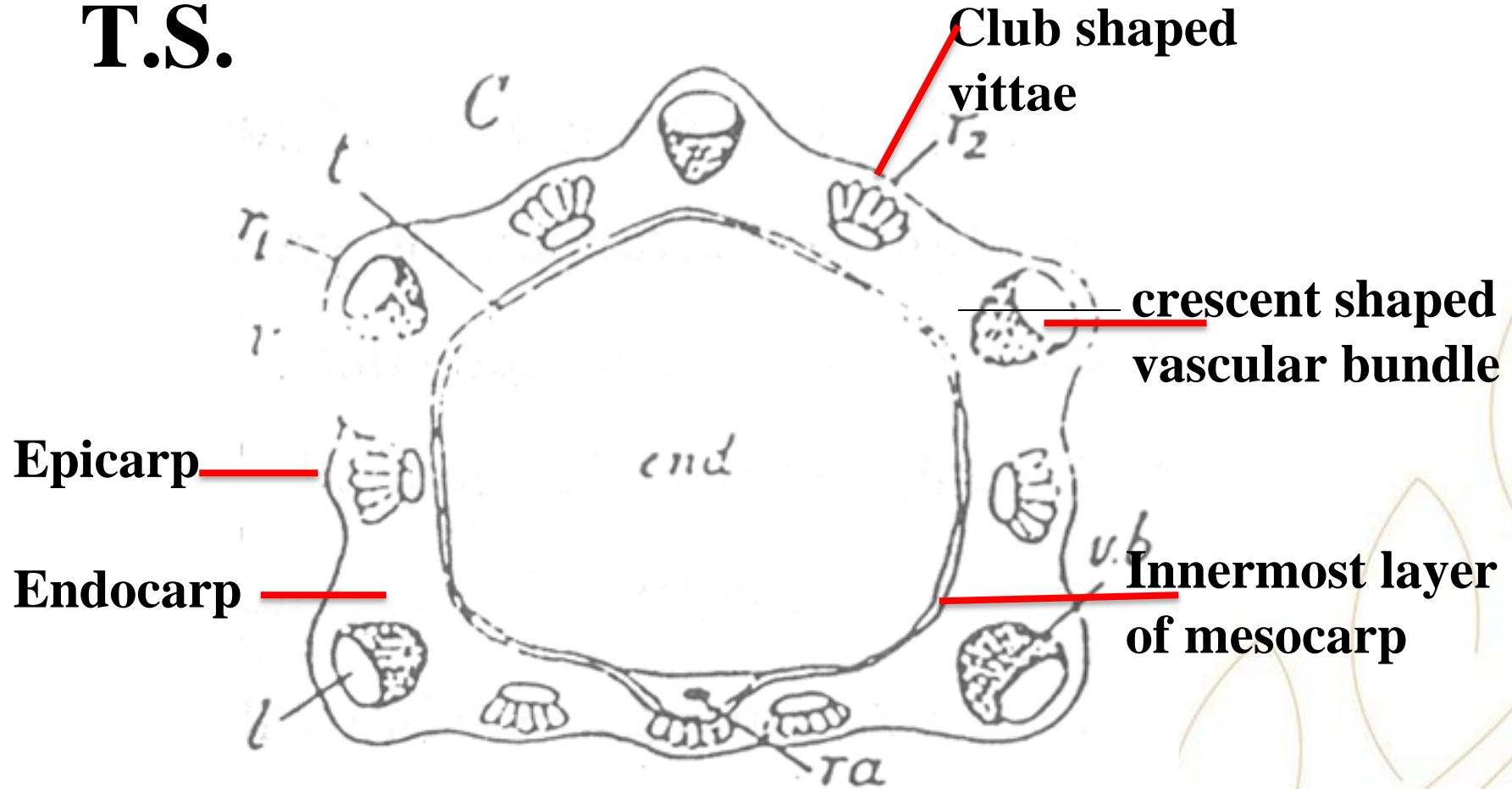
Secondary ridge



T.S.



T.S.



T. S. of Ammi visnaga mericarp (diagram)

Powder:

Condition: Fine powder

Colour: Brownish green

Odour: Slightly aromatic

Taste: Bitter

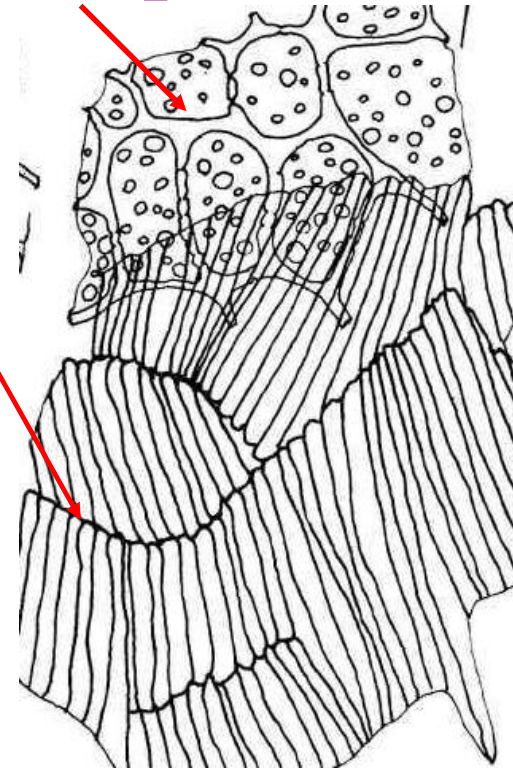
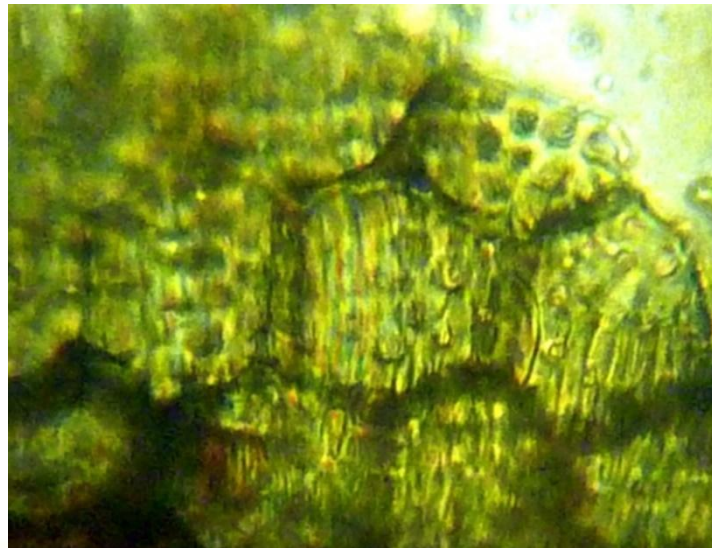


Powder:

1- Fragments showing innermost layer of mesocarp (porous layer) accompanied by parquetry endocarp

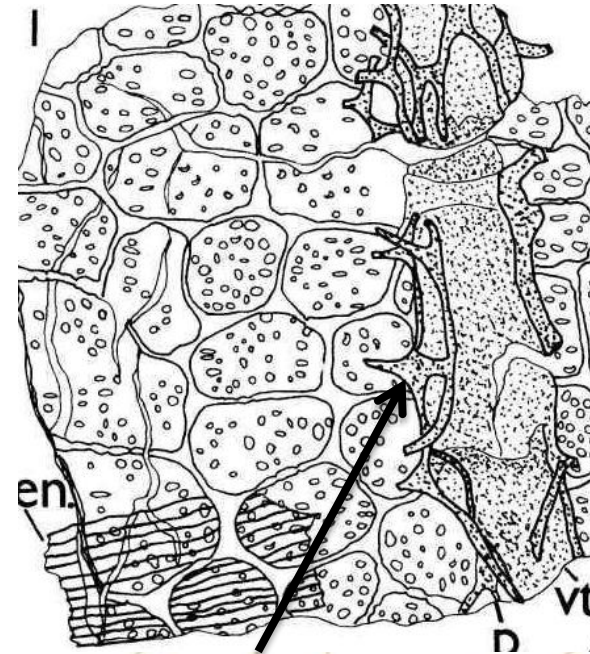
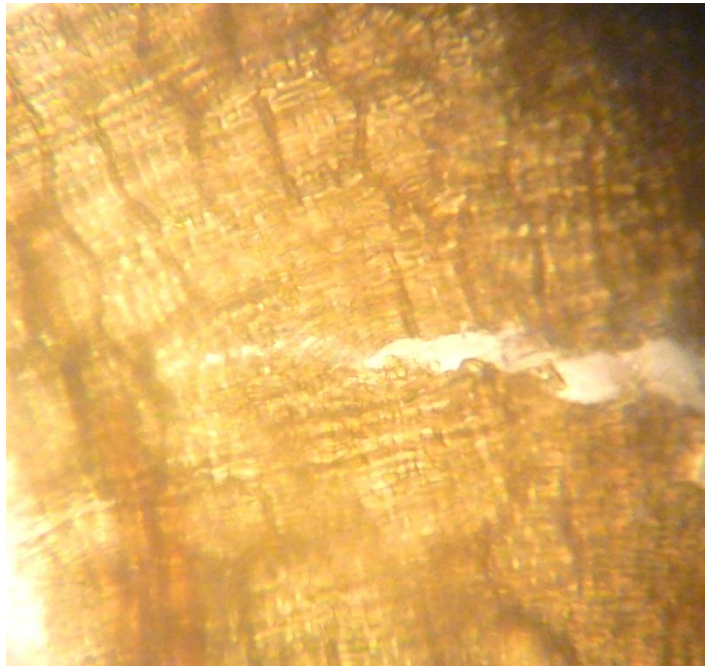
Inner most layer of mesocarp

Parquetry endocarp



Powder:

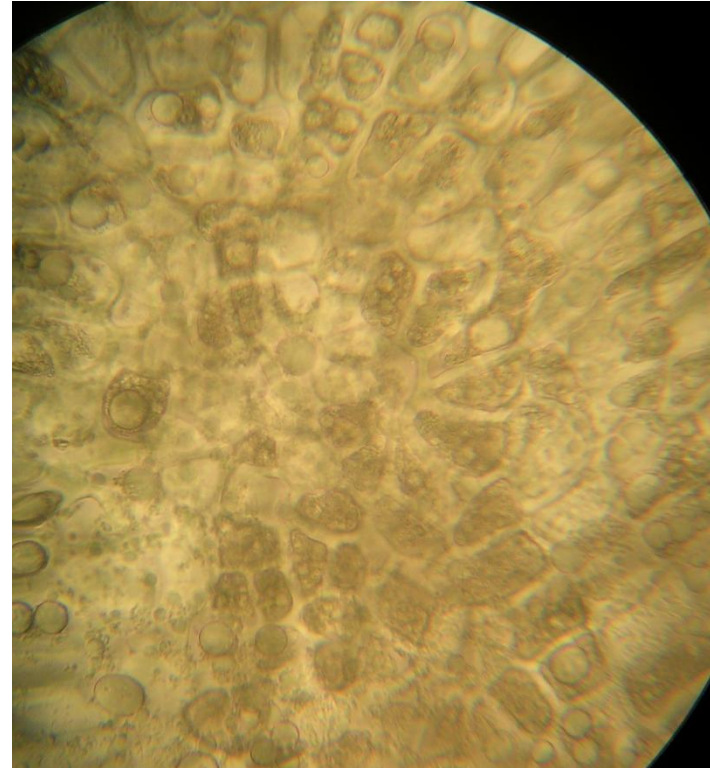
2- Fragments showing innermost layer of mesocarp (porous layer) accompanied by parquetry endocarp and club shaped vittae.



**Club shaped vittea
with radiating cells**

Powder:

3- Numerous fragments of endosperm showing aleurone grains, containing micro-rosette crystals of calcium oxalate.



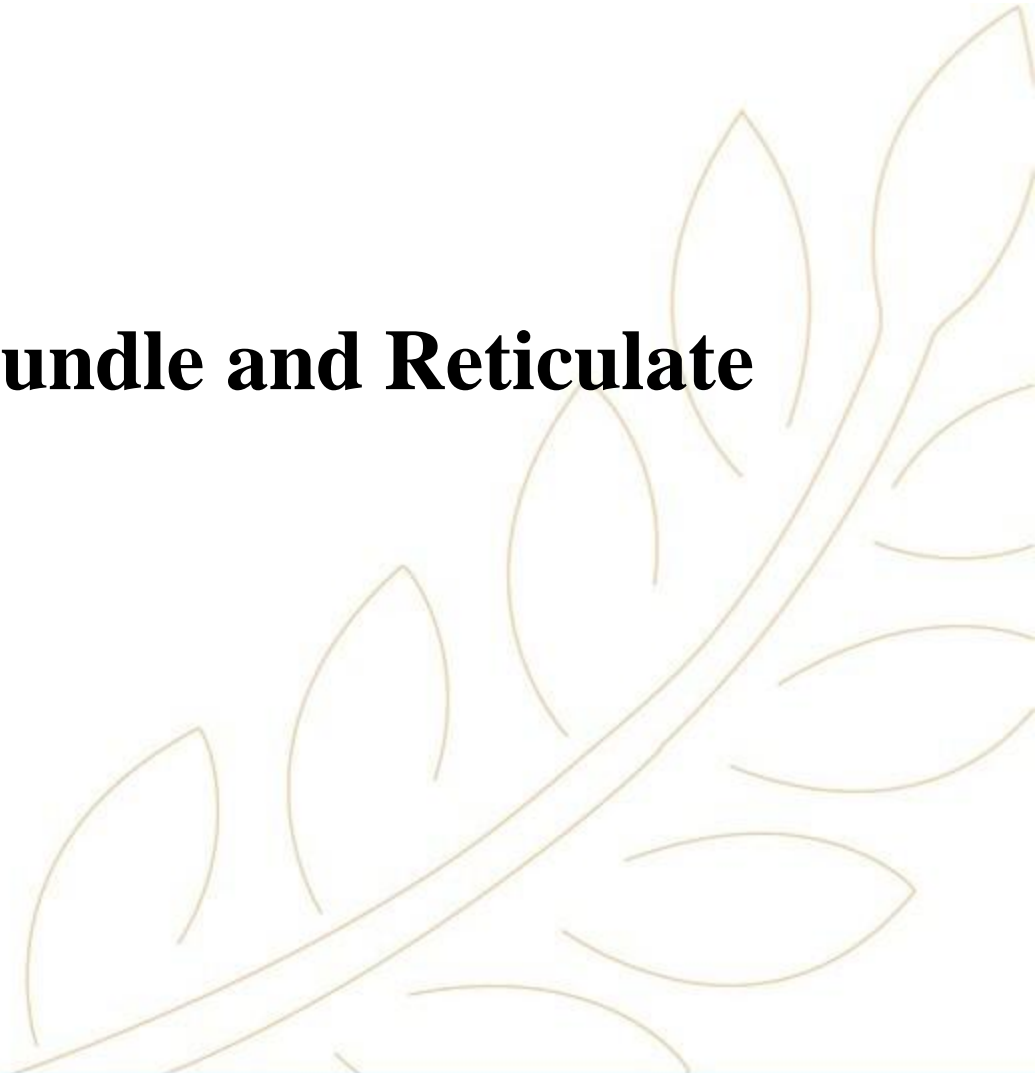
Microscopical Character:

Mount in KOH: All key elements

Mount in Phloroglucinol : Vascular bundle and Reticulate

lignified parenchyma

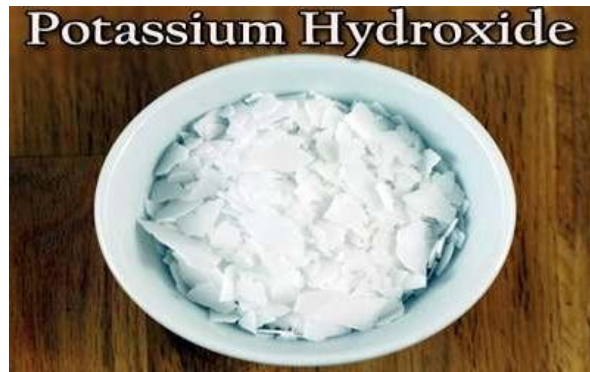
Mount in Water: Negative



Chemical test:

Khellin test:

Put the ammi visnaga powder in a filter paper and add few specks of KOH solid (pellets)



after 1-2 mins



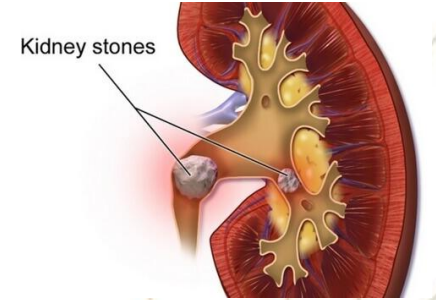
Uses

1- Whooping cough and in bronchial asthma.



2- Treat cramp-like conditions of GIT, biliary colic, and painful menstruation.

3- Removal of gall bladder and kidney stones by relaxing the muscles of the ureter.



4- The drug relaxes the coronary arteries, helps to improve the blood supply to the heart muscle and thereby eases angina pectoris.



5- Spasmolytic especially on the muscles of the bronchi, GIT, biliary tract, urogenital system and the coronary vessels.

Coriander

Origin:

It is the dried ripe fruits of *Corandrum sativum* family
Apiaceae.



Morphology:

Shape: Spherical

Colour: Yellowish buff

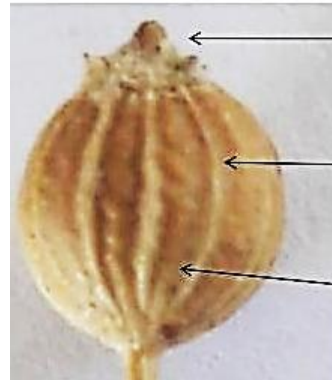
Odour: Aromatic odour

Taste: Aromatic taste

Surface:

Primary ridge

Secondary ridge



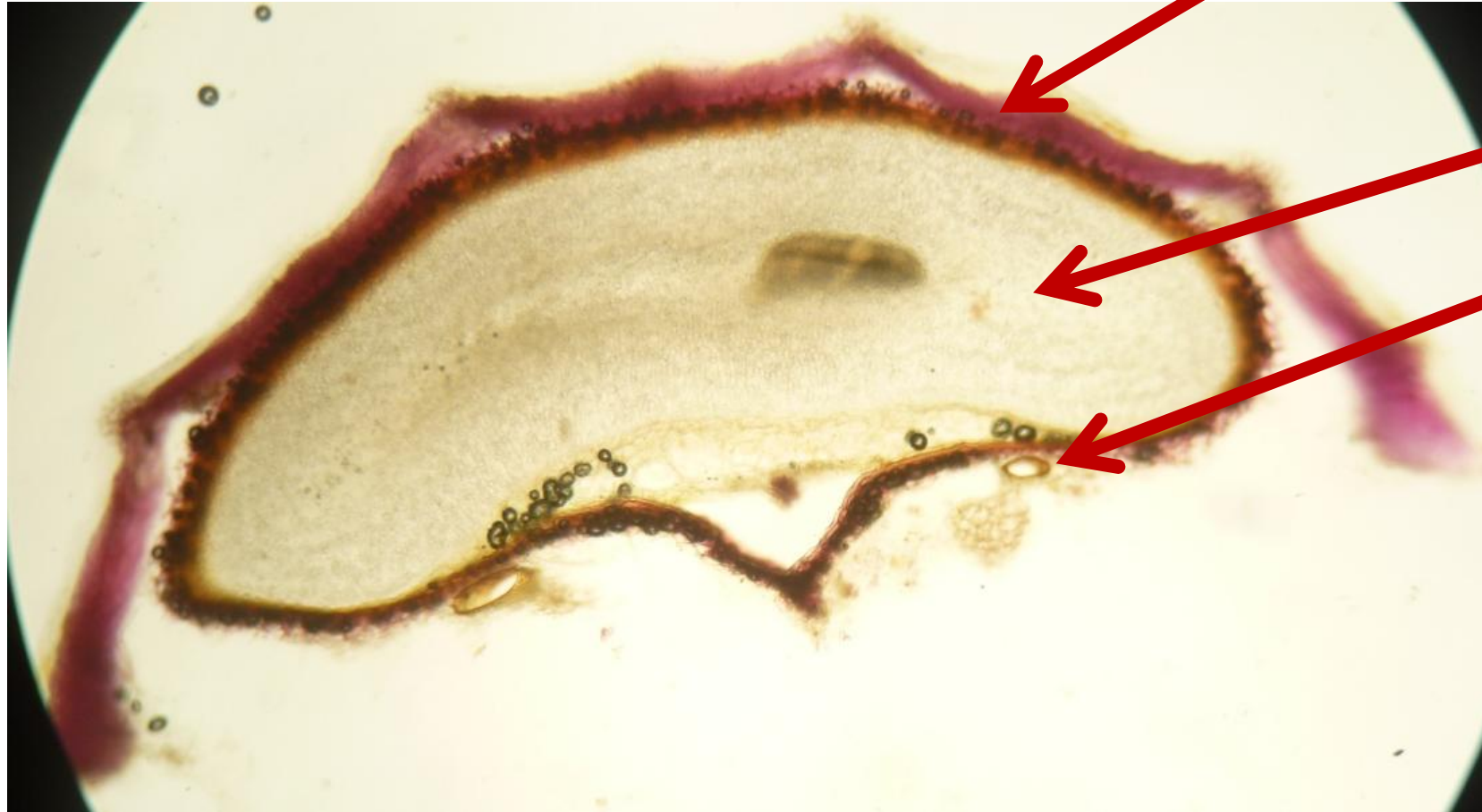
← Remains of calyx

← Straight more prominent 2ry ridge

← Wavy less prominent 1ry ridge



T.S.:



Crossed wavy fibers

Endosperm

Simple vittae

Powder:

Condition: Fine powder

Colour: Yellow

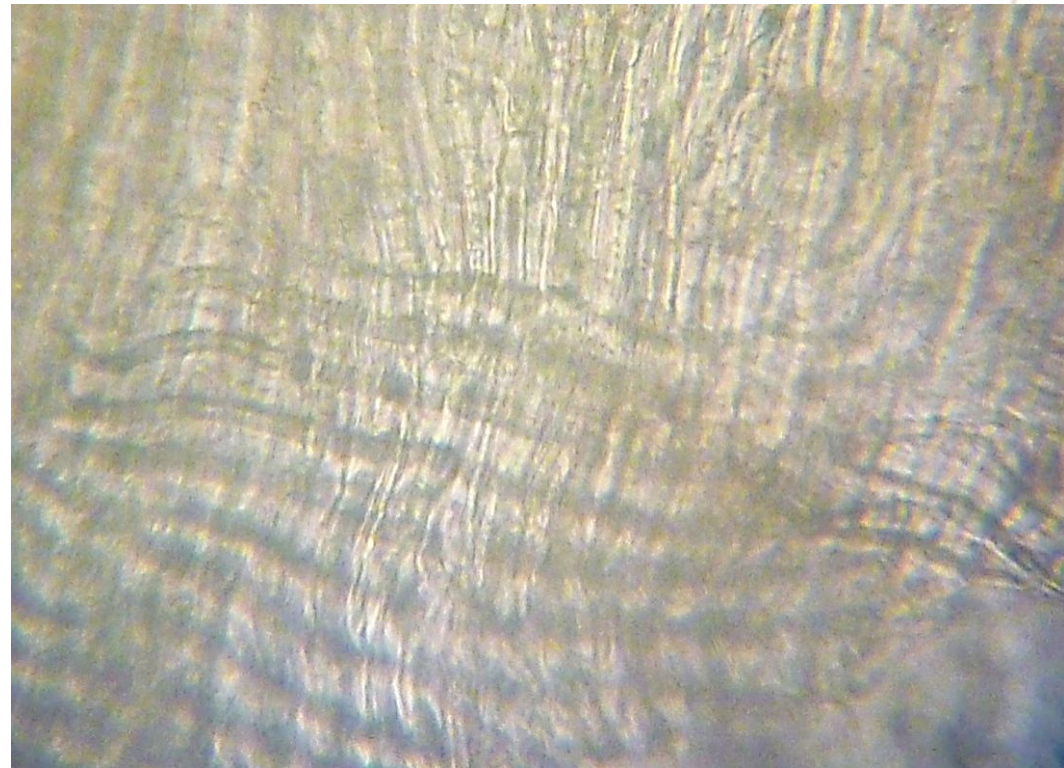
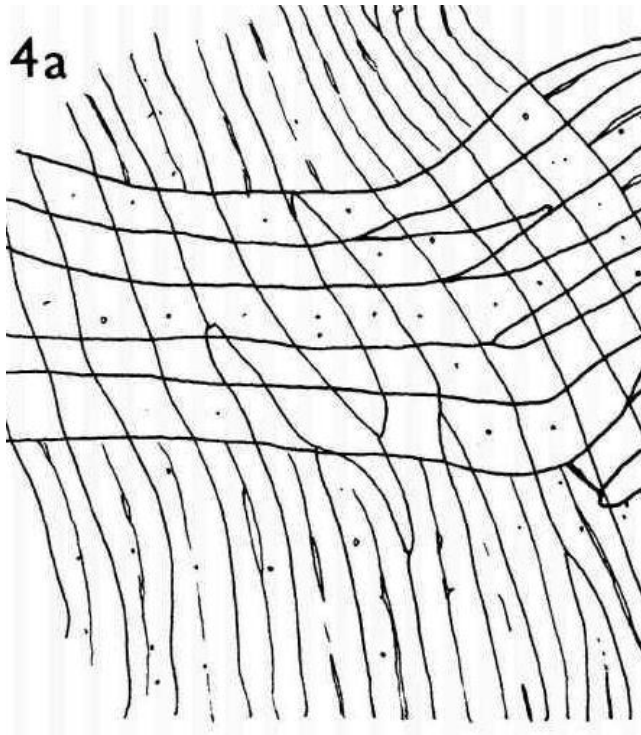
Odour: Aromatic odour

Taste: Aromatic taste



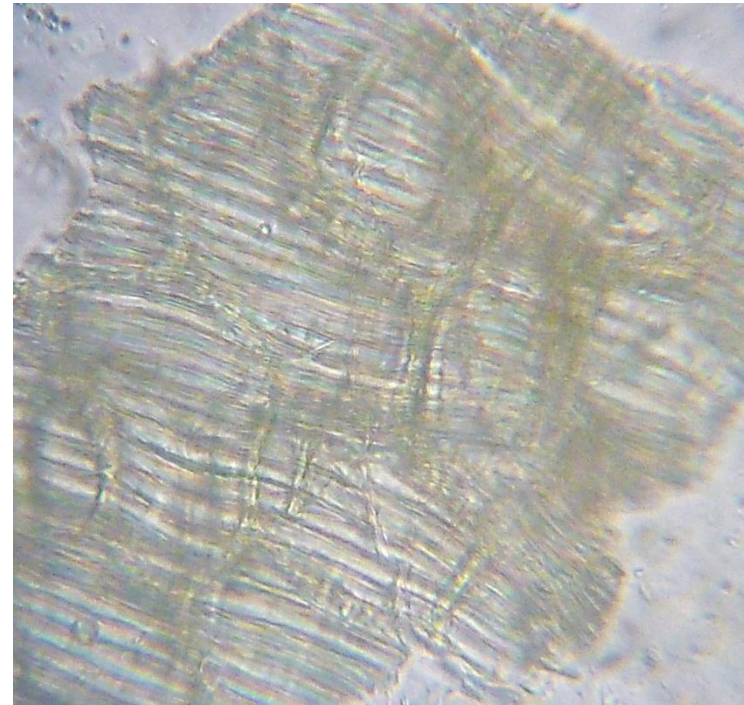
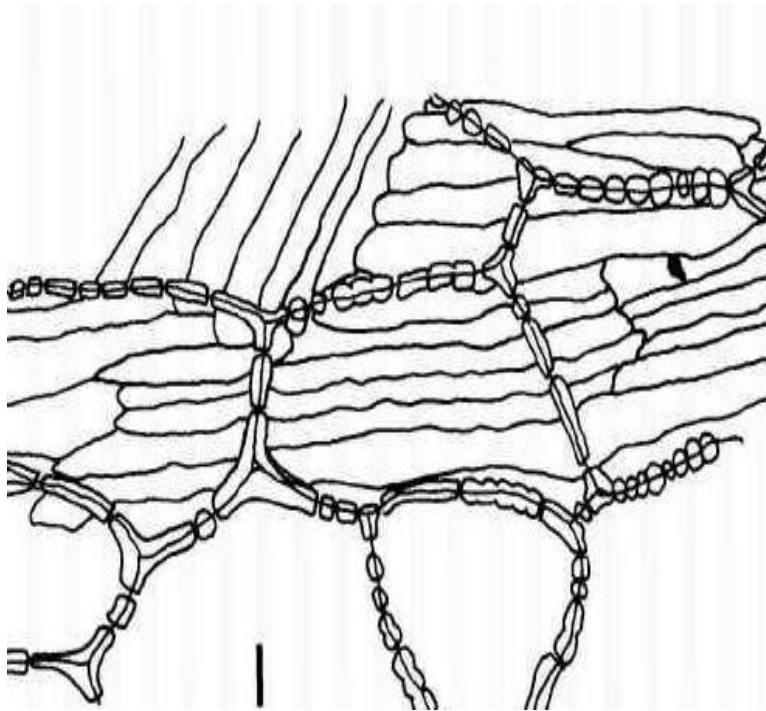
Powder:

Fragments of irregularly curved, pitted lignified fusiform sclerenchymatous fibers of mesocarp, in sinuous rows, often crossing at right angle.



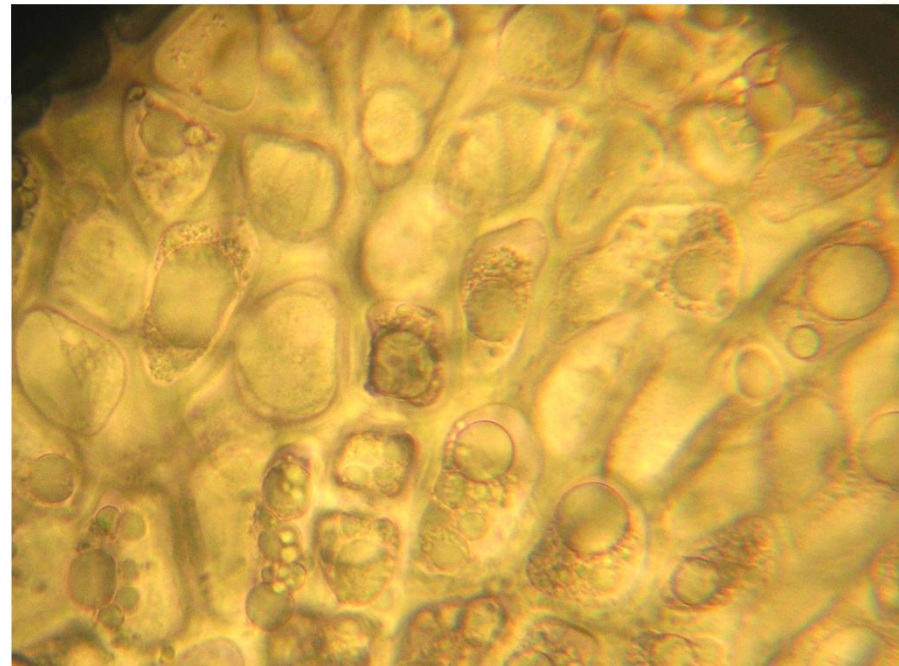
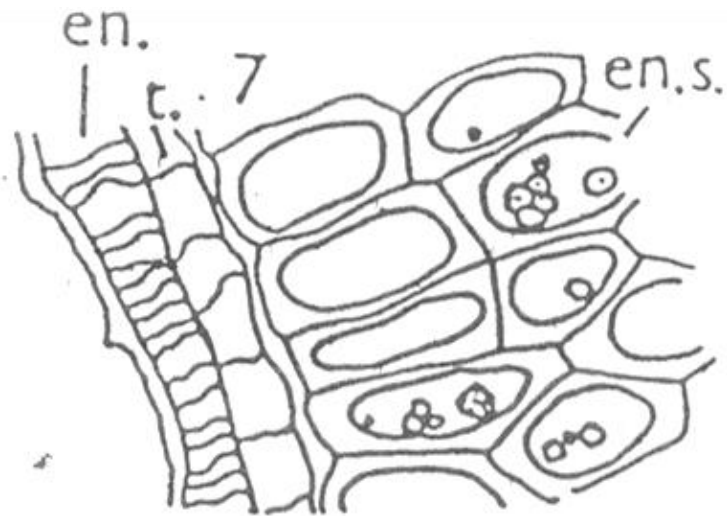
Powder:

Inner most layer of mesocarp with variously oriented endocarp



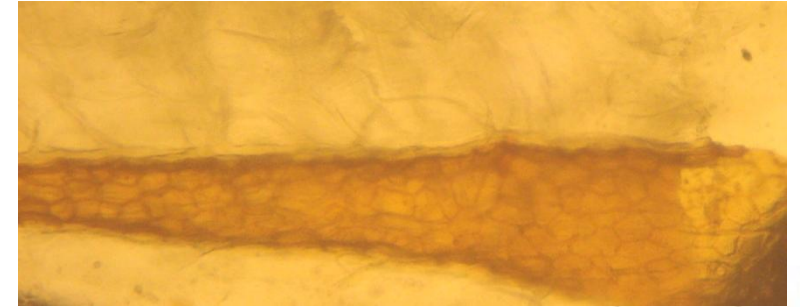
Powder:

Numerous fragments of endosperm cells containing globules of fixed oil and aleurone grains containing micro-rosette crystals of calcium oxalate.

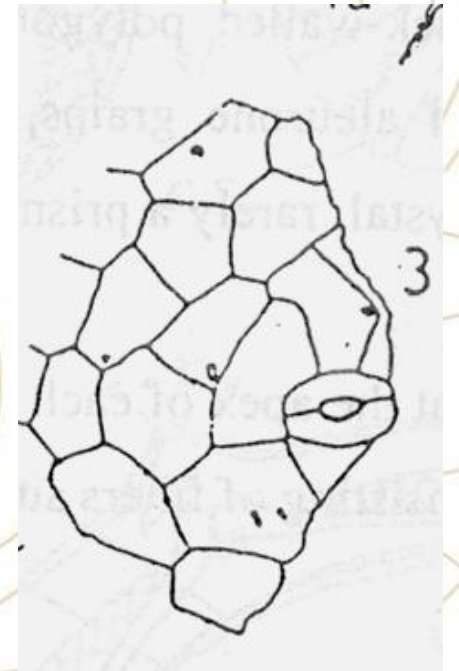


Powder:

4- Few pieces of **yellowish-brown vittae**.



5- Fragments of epicarp showing **thick-walled cells**, occasional small **prismatic crystals of calcium oxalate**, few **stomata of cruciferous type** and no hairs.



Microscopical Character:

Mount in KOH: All key elements

Mount in Phloroglucinol : Vascular bundle, Reticulate lignified parenchyma and fusiform sclerenchymatous fibers of mesocarp.

Mount in Water: Negative



Uses

- 1- Spice & flavoring agent.
- 2- It has bactericidal and fungicidal properties.
- 3- It is useful for gastritis, and dyspepsia.
- 4- Spasmolytic, carminative added to purgative preparations to prevent the gripping effect.
- 5- It has strong lipolytic activity.

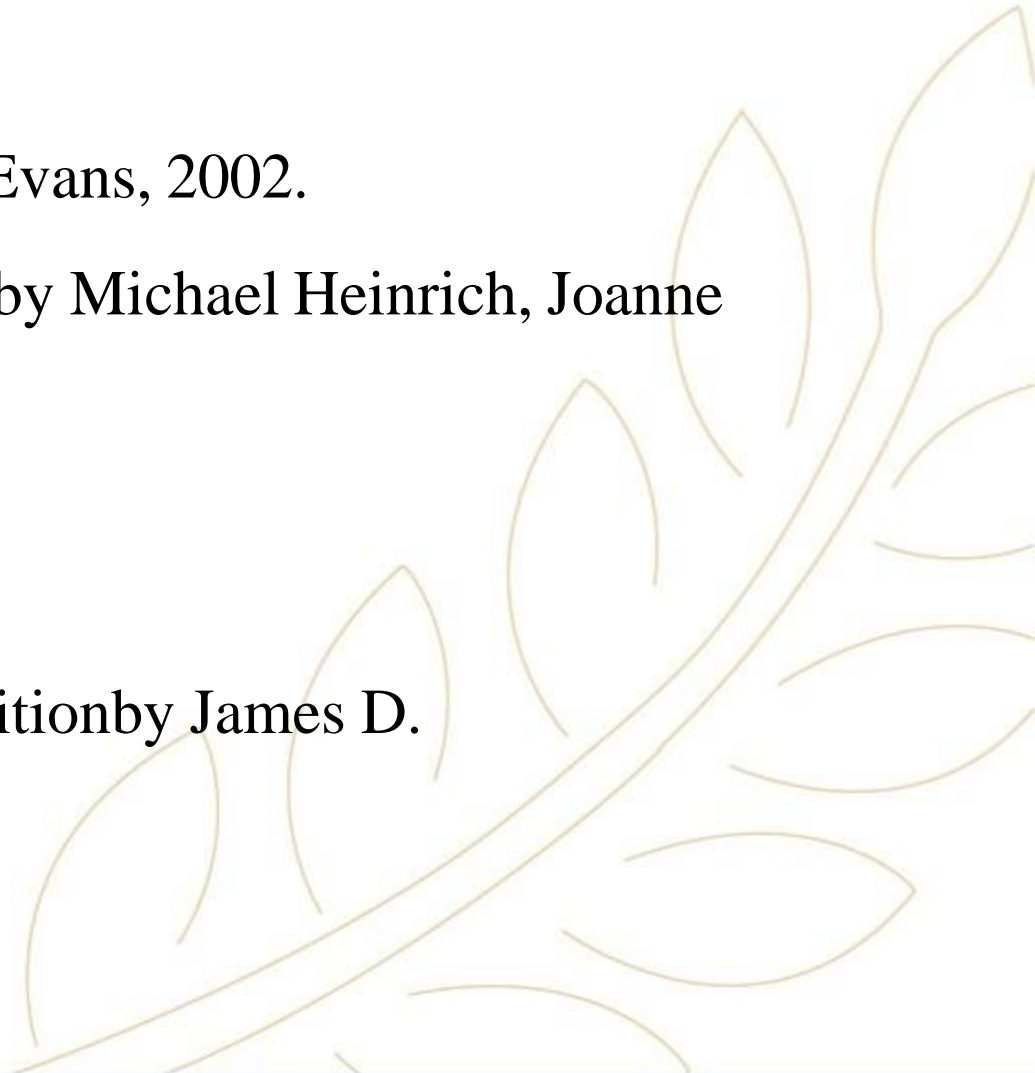


References:

1. Trease & Evans' Pharmacognosy by William Charles Evans, 2002.

3. Fundamentals of Pharmacognosy and Phytotherapy by Michael Heinrich, Joanne Barnes,
Simon Gibbons, and Elizabeth M. Williamson, 2004.

2. Botany : An introduction to Plant Biology, Third edition by James D. Mauseth, 2008.



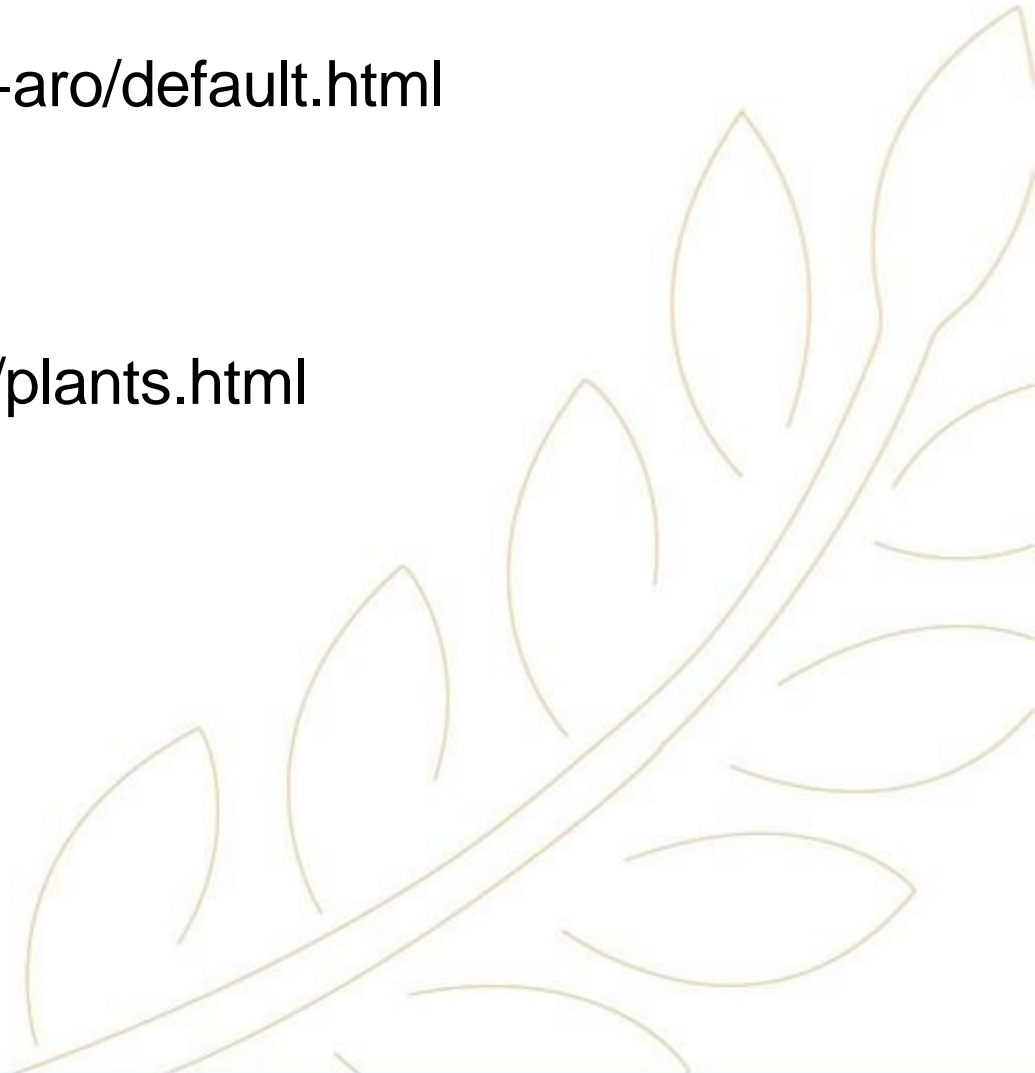
Useful links:

<http://www.hort.purdue.edu/newcrop/med-aro/default.html>

<http://www.herbmed.org/>

<http://www.danish-schnapps-recipes.com/plants.html>

<http://www.botanical.com/>





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Thank You!

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