



FRUITS

SEMESTER VI

TYPES

Dr. Varghese M. C.
Department of Botany
Devamatha College Kuravilangad

The dry dehiscent fruits

- The dry dehiscent fruits are usually dry and they burst along the suture to release their seeds.
- They produce more than one seed in a carpel.
- It is classified as

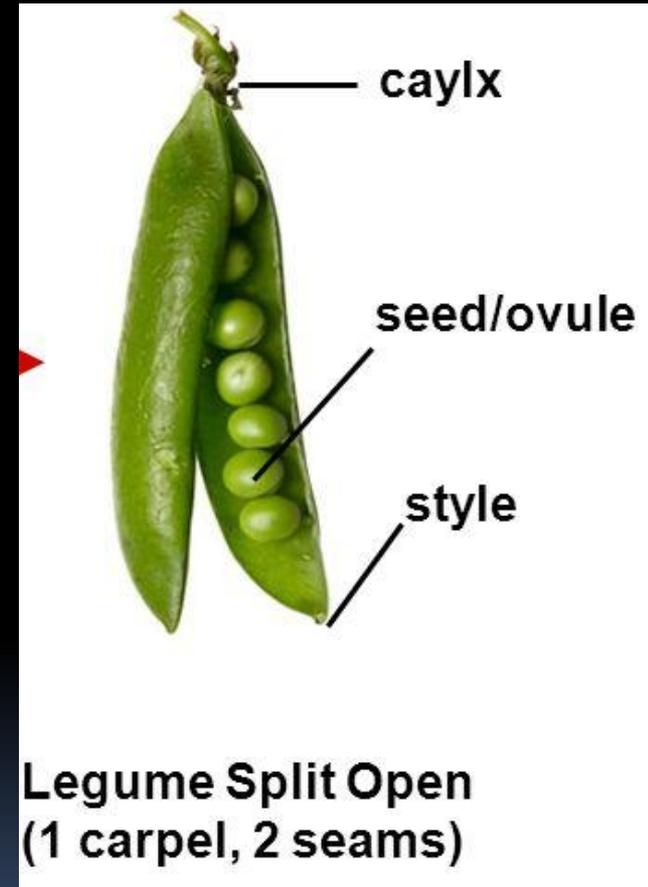
1. Legume, 2. Siliqua, 3. Follicle,

4. Capsules –

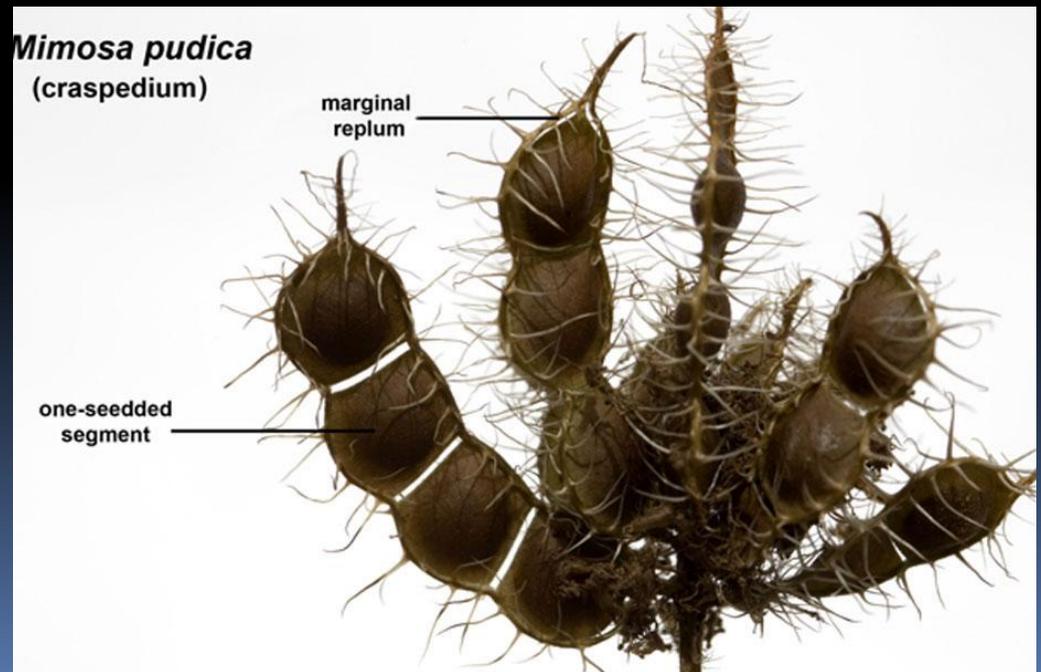
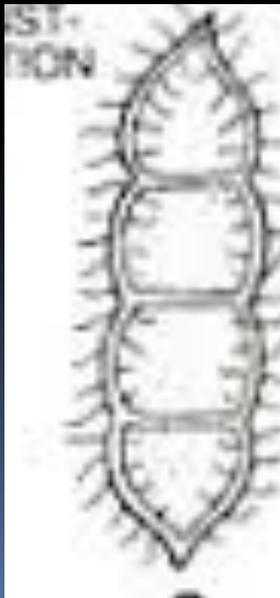
- | | |
|---------------------------|-------------------------|
| i. Loculicidal capsule, | ii. Septicidal capsule, |
| iii. Septifragal capsule, | iv. Porecidal capsule, |
| v. Valvular capsule, | vi. Utricle and |
| vii. Pyxidium. | |

1. Legume

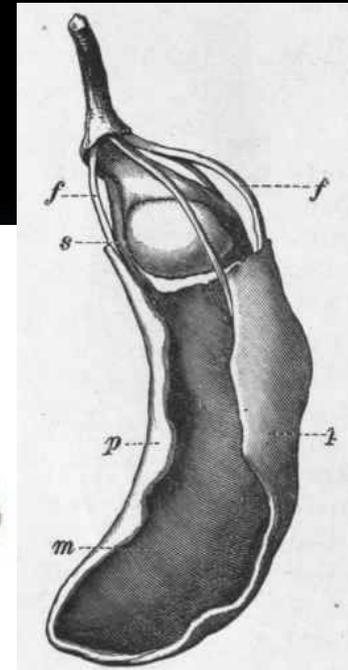
- Fruit developed from a superior monocarpellary pistil.
- They dry when mature and splits open by two sutures, ie. along the dorsal and ventral sutures.
- When the legume is an inflated fruit, then it is called a pod.
- Eg. *Phaseolus*, *Abrus* etc.



- The leguminous fruits undergo several transformations.
- In Mimosa, the fruit does not break open, but break off transversely into several bits, each with a seed in it.
- Such a fruit is called a **lomentum**.

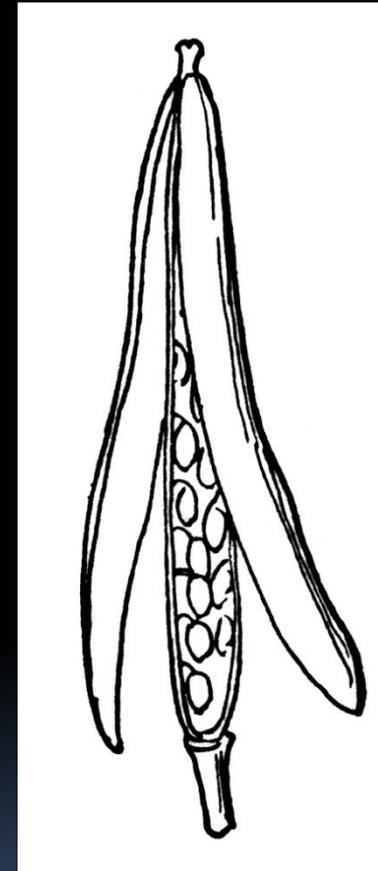


- In *Tamarindus*, *Cassia fistula* etc., the mesocarpic region of the pericarp is developed into a fleshy mass, while the epicarpic portion remains hard and brittle.

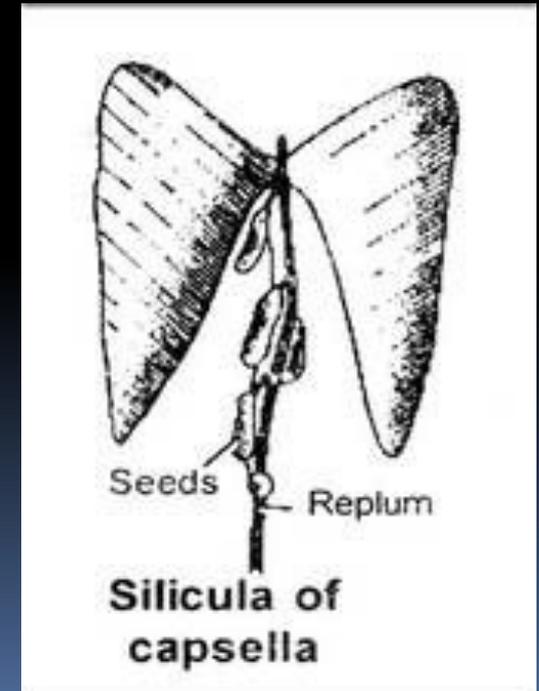


2. Siliqua

- Siliqua is a dry dehiscent fruit developed from a bicarpellary, syncarpous, superior pistil with parietal placenta.
- The ovary is initially one chambered but subsequently becomes two chambered due to the formation of a **false septum**, visible on the outside in the form of a rim known as **replum**.
- The two carpels split open from base upwards into two valves.



- The seeds remain attached to a false septum or to the replum.
- Eg. Brassica, Cleome.
- When the siliqua fruit is very short and flat, they are called silicule.
- Eg. *Capsella bursa-pastoris*



3. Follicle

- A fruit developed from a superior monocarpellry or apocarpous pistil and when ripe, it breaks open along the ventral suture (one suture).

Eg. *Tabernae-montana*, *Calotropis* etc.

- In **Michelia**, the follicle splits transversely on the dorsal suture and in *Helicteris isora*, the follicle consists of five carpels twisted together and may be mistaken for a capsule, but break open along the ventral suture.



**Fruitlets
(follicles)**

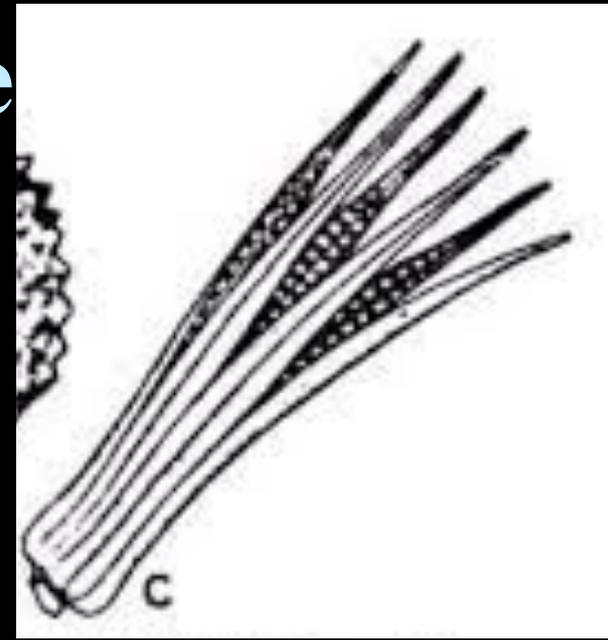
Etaerio of follicles in michelia

4. Capsule.

- This fruit is developed from a multicarpellary, syncarpous superior or inferior ovary.
- When they ripe, the fruits split open and let the seeds out.
- According to the nature of dehiscence, follicles are classified as –
 - i. Loculicidal capsule, ii. Septicidal capsule, iii. Septifragal capsule, iv. Porecidal capsule, v. Valvular capsule, vi. Utricle, and vii. Pyxidium

i. Loculicidal capsule

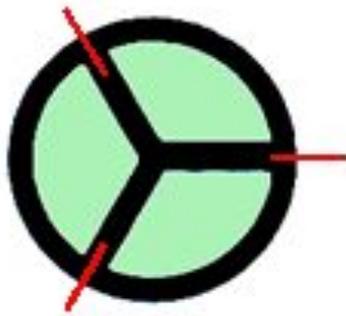
- It breaks open along the dorsal suture of every carpel when ripe.



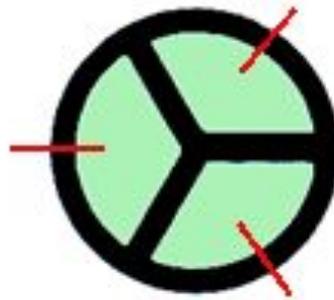
Eg. *Hibiscus esculentum*.

- In *Cardiospermum*, it is an inflated loculicidal capsule

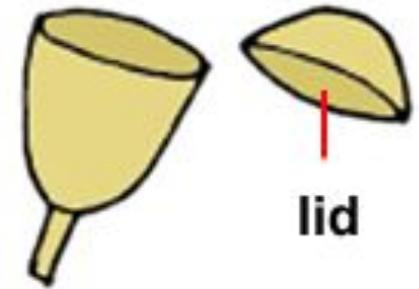




1. Septicidal
(split along septa)
e.g. *Yucca*

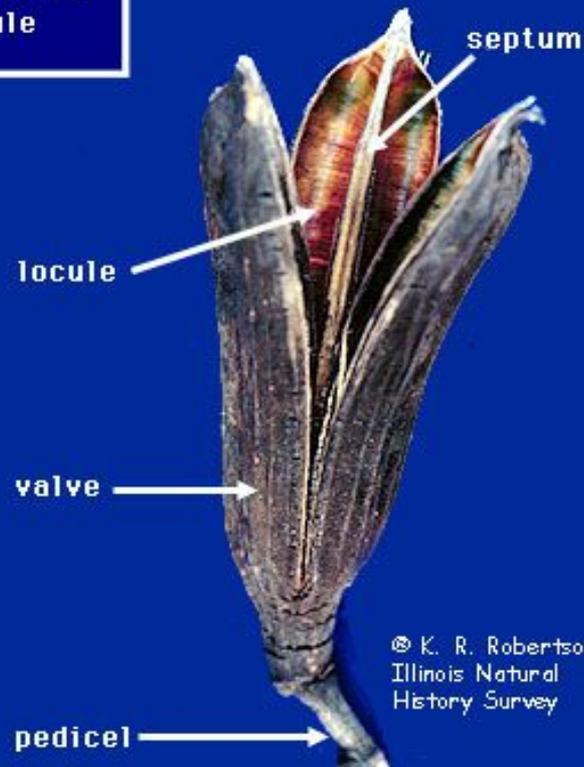


2. Loculicidal
(split along locules)
e.g. *Iris*



3. Circumscissile
(opens by a lid)
e.g. *Portulaca*

Loculicidal
capsule



© K. R. Robertson
Illinois Natural
History Survey

ii. Speticidal capsule

- The capsule breaks along the septa making all the carpels free from one another, and each of them splits along the ventral suture.

Eg. *Aristolochia*

- In *Aristolochia* the split capsule often hangs like a 'flower basket' (basket fruit).

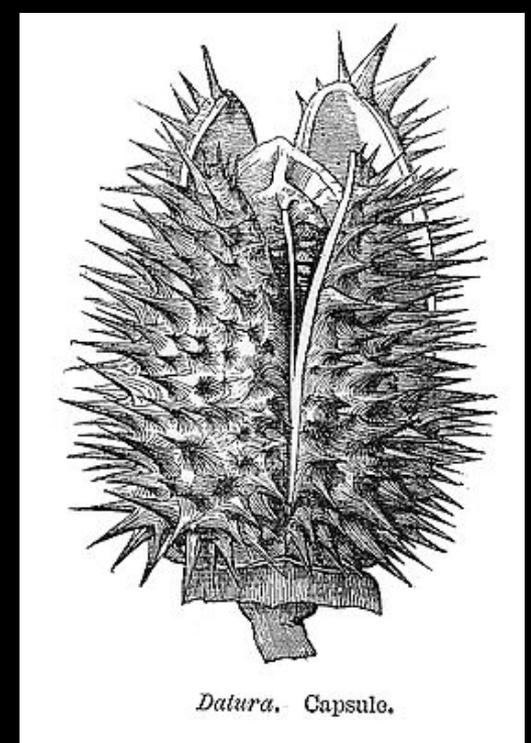


iii. Septifragal capsule.

- In this type, the pericarp breaks off from the septa which remains like a central column.
- The pericarp further splits into several valves.

Here, the capsule splitting so that valves fall off leaving seeds attached to central axis.

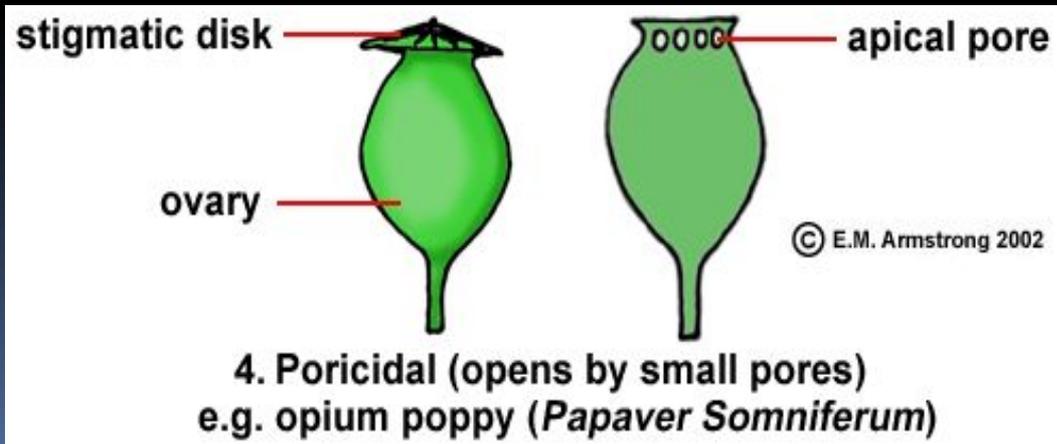
Eg. *Datura*, *Swetenia*



iv. Porecidal capsule

- It is developed from a multicarpellary syncarpous pistil.
- The capsule leaves certain small holes beneath the radiating stigmatic lobes when they are ripe.
- The seeds escape out when the capsules are violently shaken.

Eg. *Papaver*



v. Valvular capsule

- This fruit is also developed from a syncarpous pistil.
- When the capsules are ripe, they open by a split at the top of each loculus.
- The pericarp opens out by slits.

Eg. *Sessamum indicum*

- In *Hypericum* the 3 carpels open out along the septa splitting by the parietal placenta into three valves.



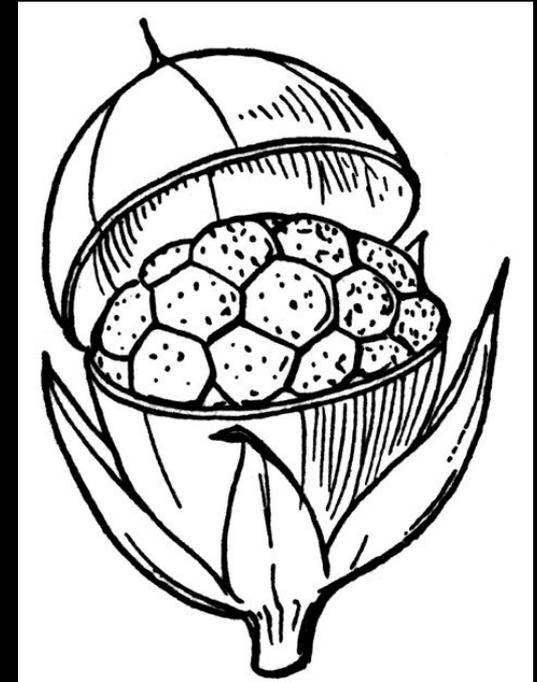
vi. Utricle

- This is a special type of fruit seen in *Celosia*, *Portulacca* etc.
- It is formed from a syncarpous unilocular pistil with basal or free central placentum.
- When the fruit is ripe, it breaks open by a transverse cut of its membranous wall.



vii. Pyxidium / Circumscissile

- Developed from a syncarpous, unilocular pistil.
- When the fruit is ripe, the pericarp is thick and woody and dehisce by a transverse cut so that the top comes as a lid or operculum.



Eg. *Eucalyptus*, *Plantago*, *Anagalis* etc.

Exceptions in capsules

- Though capsules are dry dehiscent fruits, there are some exceptions where the pericarp is completely fleshy, as in *Myristica*.
- But they break open when they ripe.
- The *Emblica* has got a hard shell-like inner and fleshy outer portion for the pericarp.
- The fruit break open like a loculicidal capsule when the fleshy portion is decayed





THANK YOU