

PAPILIONACEAE



General characters

Vegetative features

- Climbers or twiners
- Tap root with root nodules →
- Leaves with pulvinate base →



General characters

Reproductive features

- Racemose inflorescence
- Perigynous zygomorphic flowers
- Gamosepalous calyx with odd anterior sepal
- Papilionaceous corolla with descendingly imbricate aestivation
- Stamens usually ten with monodelphous or diadelphous condition
- Monocarpellary unilocular ovary with marginal placenta
- Fruits legume



Key characters

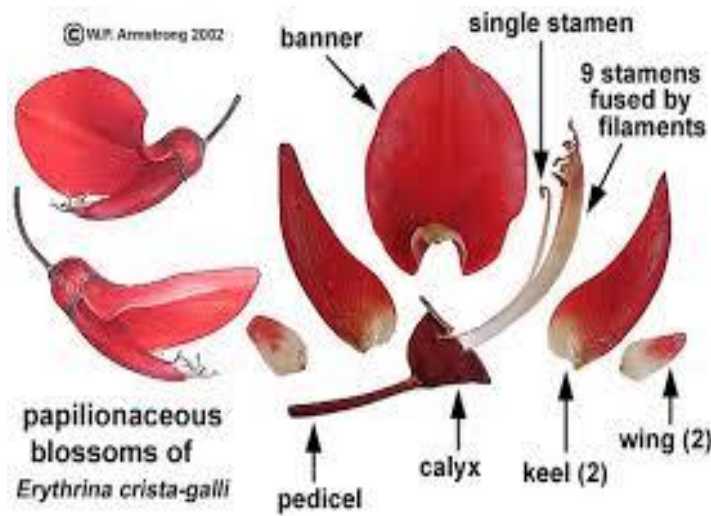
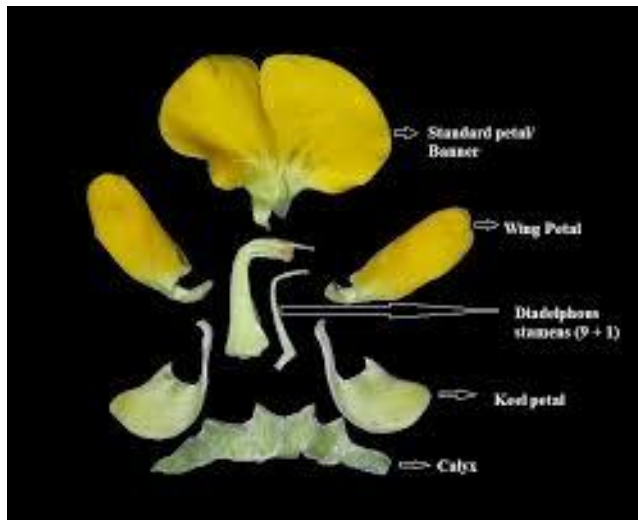
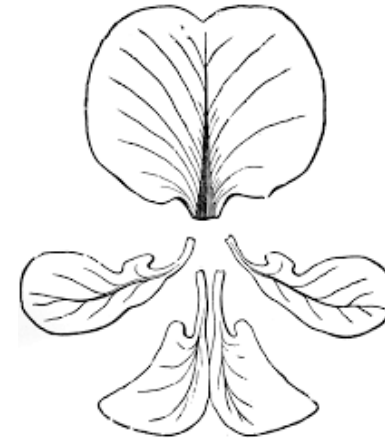
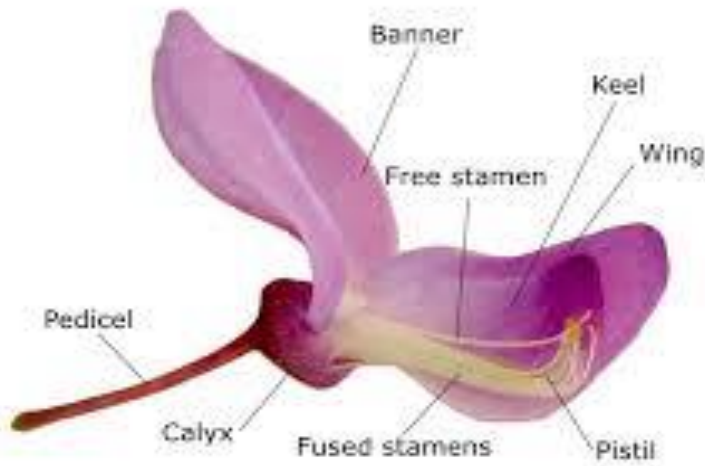
Vegetative features

- Climbers or twiners
- Tap root with root nodules
- Leaves with pulvinate base

Reproductive features

- Papilionaceous corolla with descendingly imbricate aestivation
- Stamens usually ten with monadelphous or diadelphous condition
- Perigynous monocarpellary unilocular ovary with marginal placenta
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Papilionaceous corolla



Abrus precatorius (കുന്നിക്കുരു)



Adenanthera pavoniana (മഞ്ചാടി)



Mucuna pruriens (നായ്ക്കുരമ)



Butea monosperma (flame of the forest / പ്ലാഗ്)



Erythrina indica (മുരിക്ക്)



Dalbergia latifolia (rose wood / 𑄎𑄓𑄔𑄕)



Pterocarpus santalinus (red sandal/ രക്തചന്ദനം)



Gliricidia sepium (ശീമക്കൊന്ന)



Pongamia glabra (ഉണ്ടി)



Pisum sativum (green pea / പട്ടാണി പയർ)



Dolichos biflorus (മുതിര)



Canavalia gladiata (കത്തിപ്പയർ/ വാളരിപ്പയർ)



Cajanus cajan (തൂവര)



Cicer arietinum (chick pea/ கசப்பு)



Phaseolus radiatus (green gram / ചെറുപയർ)



Phaseolus vulgaris



Phaseolus mungo (black gram / ഉഴുന്ന്)



Arachys hypogaea (നിലക്കടല)



Arachis glabrata



Arachis glabrata blossom @ Calicut University Campus



Sesbania grandiflora (humming bird tree/
അഗത്തിച്ചീര)



Indigofera tinctoria (നീലയമരി)



Crotalaria pallida



Crotalaria laburnifolia



Clitoria ternatea (ശംഖുപുഷ്പം)



Centrosema molle (കാട്ടുപയർ)



Flemingia strobilifera



Alysicarpus vaginalis



Desmodium gangeticum (ഓരില)



Pseudarthria viscida (മുവില / ശലപർണി)



Zornia diphylla



Aeschynomene aspera



Ulex europaeus



Primitive characters:

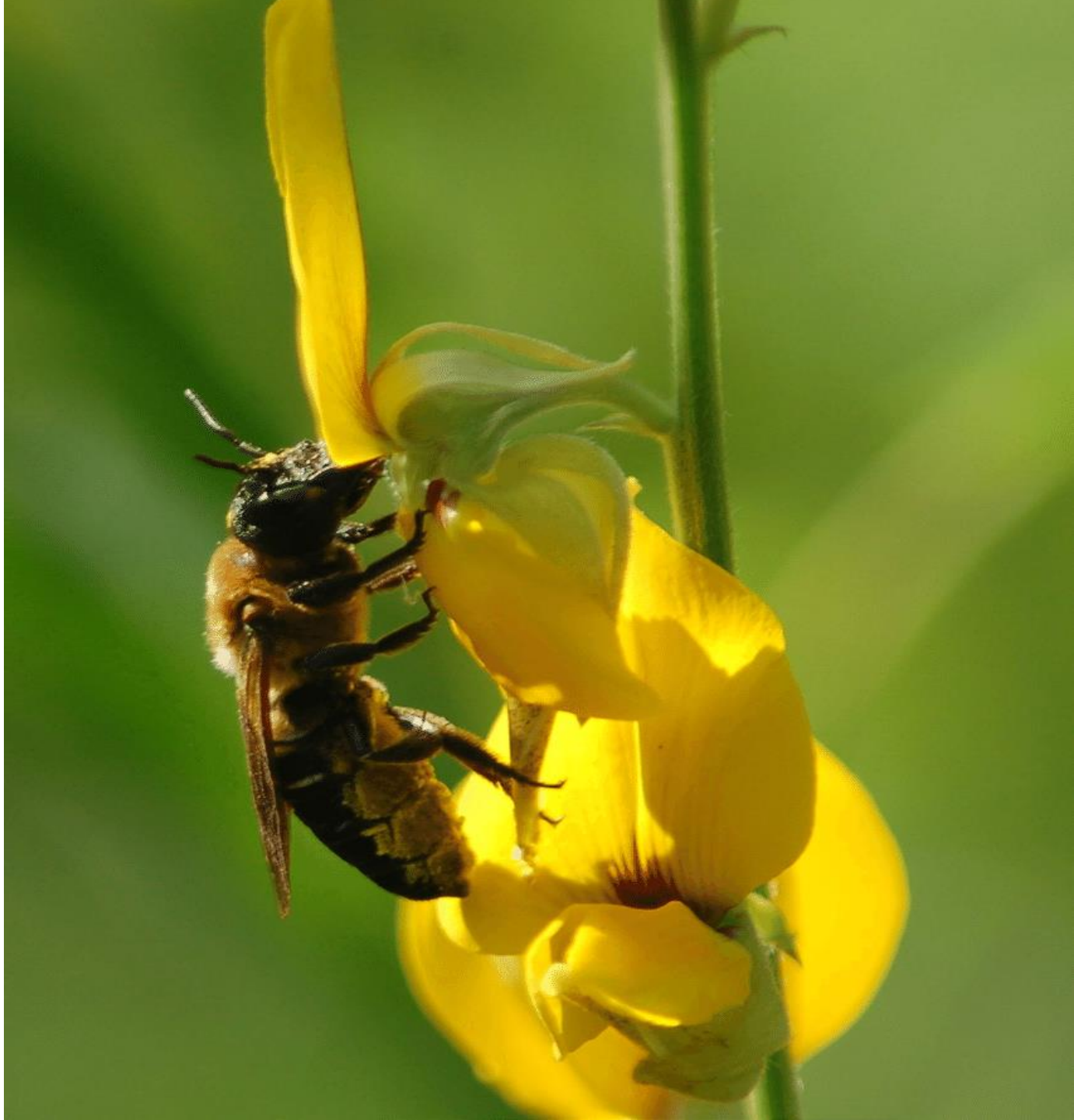
- 1. Leaves alternate, stipulate and simple in some species (*Indigofera cordifolia*, *Heylandia*).
- 2. Flowers hermaphrodite, large and showy.
- 3. Corolla polypetalous.
- 4. Androecium polyandrous in *Ormosia*, *Baphia*, *Sophora*.
- 5. Ovules anatropous.

Advanced characters:

- 1. Plants herbaceous, annual.
- 2. Leaves compound and in many genera leaflets are modified into tendrils (*Pisum*, *Lathyrus*)
- 3. Flowers zygomorphic.
- 4. Calyx gamosepalous.
- 5. Corolla papilionaceous.
- 6. Stamens diadelphous.
- 7. Gynoecium monocarpellary.
- 8. Fruit simple legume.
- 9. Ovules campylotropous.
- 10. Seeds non-endospermic.

Pollination mechanism in the Papilionaceae:

- **The members of Papilionaceae are all pollinated by bees and though they vary greatly in structure yet in the following points all are similar:**
- 1. The flowers more or less horizontal and stigma and anthers are so exposed so as to contact the ventral part of the bee.
- 2. The two petals fuse and form the “keel” protecting the stamens and carpel from rain.
- 3. The two ‘wings’ serve as a platform for the bees and also serve as a lever for depressing the carina.
- 4. The standard serves to make the flower conspicuous.
- 5. Since the reproductive organs have to come in contact with the ventral side of the bee, it is evident that access to honey should be arranged in such a way that the bees have to pass above the reproductive organs. Accordingly the fused filaments have a passage on their upper sides and the single stamen becomes separate from the rest.



Some useful links

- <https://youtu.be/K3jQz681XtM>
- https://youtu.be/5_0vAuhGCrM