



Butterfly Gardening & Identification of Flowering Plants

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Conservation of butterflies,

When considering conservation strategies, there are two types of butterflies,

- that need very specific requirements
 - that need normal requirements
-
- 1st type – need to conserve in their existing pristine habitats
 - 2nd type – can conserve even within human settlements

Sri Lankan Cerulean



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Butterfly gardening,

Is a concept to conserve butterflies within human settlements, also with the aim of providing,

- education
- mental satisfaction
- nature enthusiasm
- to citizens.

main things to do are,

- provide food for them throughout their life cycle
- provide habitats for their other requirements

Butterfly gardening,

Can be done in,

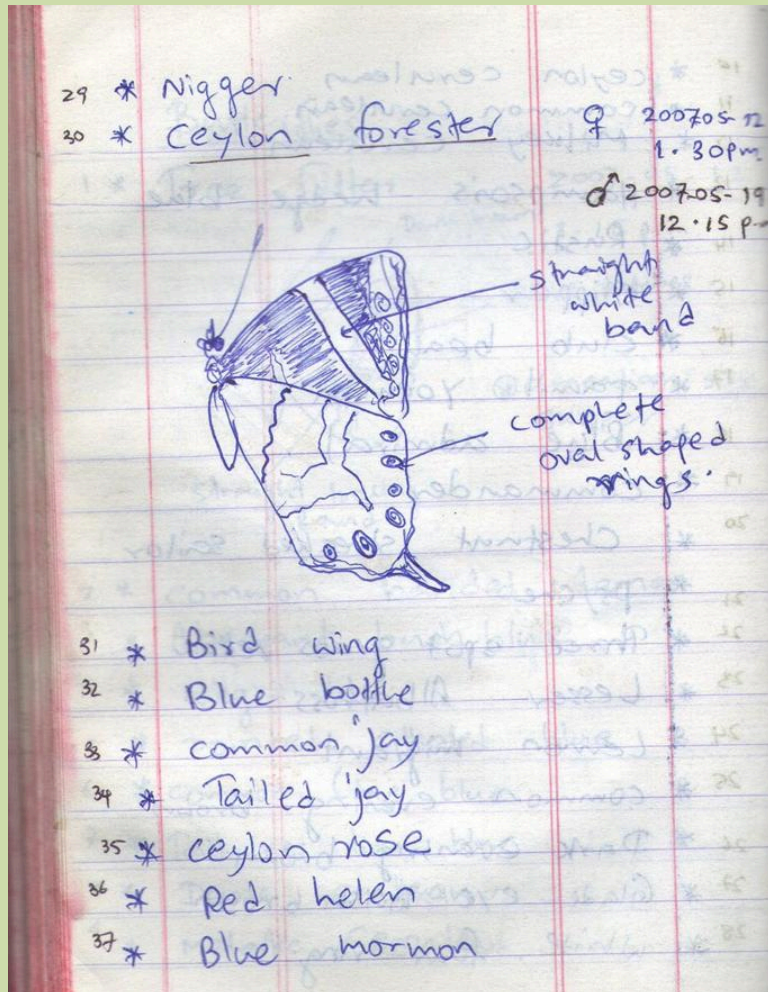
- city parks
- premises of institutions / schools / factories
- along roads
- even within home gardens

This is not a caged garden, as in a zoo

This is neither “in-situ conservation” nor “ex-situ conservation”

Guidelines to establish a butterfly garden

Step 1 - Identify butterflies that are commonly found in the area



Step 2 - Study the characteristics of the location



Shade, Existing plants & their distribution, soil characteristics, Availability of boulders, water logging areas etc

Step 3 - Select the larval food plants and nectar plants considering step 1 & 2

Plants should be,

- the species which are used by butterflies identified in step 1
- compatible to the relevant ecological zone. [Slide-9](#)
- selected considering the space that you have [slide-10](#)
- selected considering the habitat features in your space [slide-11](#)

Step 3 - Select the larval food plants and nectar plants (compatible to the relevant ecological zone)



LFPs of Common Mormon



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තුන්පත් කුරුඳු

යකි නාරං

Hill country, wet & dry
zones

Dry zone

Wet zone

Step 3 - Select the larval food plants and nectar plants (consider the space that you have)



LFPs of Common Crow



මහ නුග, for large space

ගැරඬි වැල්, for small

Step 3 - Select the larval food plants and nectar plants (consider the habitat features)

LFPs of Lemon Pansy



Lindernia, for boggy place



කැටු කරඬු, for dry place

Step 3 - Select the larval food plants and nectar plants



කිරි අගුණ



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වේලා

Edible plants, Medicinal plants, Ornamental plants are among them

Jayasinghe, H. D., *et al.* A compilation and analysis of food plant utilization of Sri Lankan butterfly larvae (Papilionoidea). *Taprobanica*, vol 06, No. 02

Step 4 - Draw up a general arrangement for the garden before establishing

- Make sure the plants are not planted too close to the pathways
- The tallest trees and shrubs are best at the perimeter
- Vines must be planted so that they can grow onto a trellis
- Plant thorny species where children may not have easy access
- Arrange plants to create both sunny and shady places
- Keep a patch of bare land for mud sipping [slide-14](#)
- Keep an area in which the native vegetation is allowed to grow
- Arrange benches at suitable locations

Mud sipping Butterflies



Step 5 – Establish the garden as you planned

- Seeds for herbs and potted plants for trees & shrubs are fitted best
- Water the plants daily until the plants are rooted
- plants should be covered to avoid laying eggs by butterflies
- All larvae must be removed when the plants are immature
- Provide other requirements of butterflies [slide-16](#)

Step 5 - Establish the garden as you planned

Provide other requirements of butterflies



Grey Pansy



Lemon Pansy

Step 6 - Regularly maintain the garden

- Do not use artificial fertilizer, pesticides, weedicides
- The beds of herbaceous plants should be kept free of aggressive grasses
- Don't clean too much [slide-18](#)
- Put fruit peels from the kitchen waste to the garden [slide-19](#)
- Water the mud sipping area & plants
- Don't demolish all the ant nests [slide-20](#)
- Split the tree trunks to secrete the sap [slide-21](#)
- Trim the plants as you required, but don't do all at once

Step 6 - Regularly maintain the garden

Don't clean too much



Chocolate soldier



Spot Swordtail



Tamil Bush Brown

Step 6 - Regularly maintain the garden

Put fruit peels from the kitchen waste to the garden



Common Bush Brown



Tamil Bush Brown

Step 6 - Regularly maintain the garden

Don't demolish all the ant nests



Common Tinsel



Large Oak Blue

Step 6 - Regularly maintain the garden

Split the tree trunks to secrete the sap



Blue Admiral







Southern Duffer

Step 7 – Do modifications to the garden

- Identify the butterflies that are coming to the garden
- Observe their behaviors and requirements
- Identify the deficient items of the garden
- Introduce them to the garden with your novel ideas
- Incorporate features for other fauna
 - Bird Baths and food for them
 - Fruiting trees for animals
 - Ponds for dragonflies
 - Hides for nocturnal animals

Need of plant ID for butterflies

-  To know larval food plants
-  To know nectar plants
-  To know sapping plants
-  To know fruiting plants

Most of these are “FLOWERING PLANTS”

Classification,

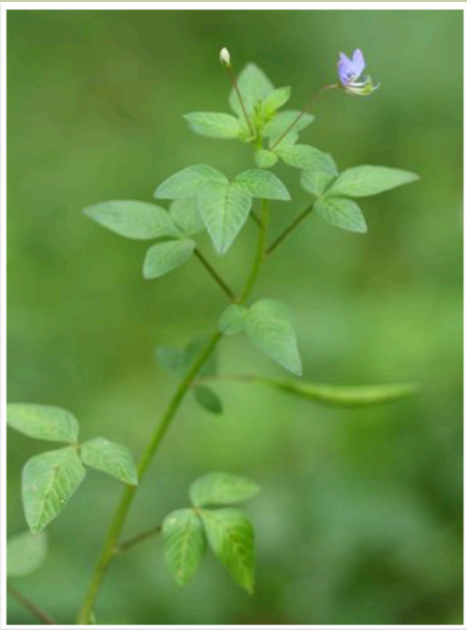
- Is mainly based on regenerative structures of plants (i.e. – flowers)
 - Related species have similar chemical compositions
-
- SL has more than 4100 species (25% exotic)
 - 480 species of LFPs for 207 butterfly species

Things required.....

- Field note book
- Pencil
- Ruler
- Hand Lens
- Guide books

Things to look at

1. Habit & habitat of the plant



Herbs



Grasses



Aquatic plants



Bushes



Scrubs



Trees

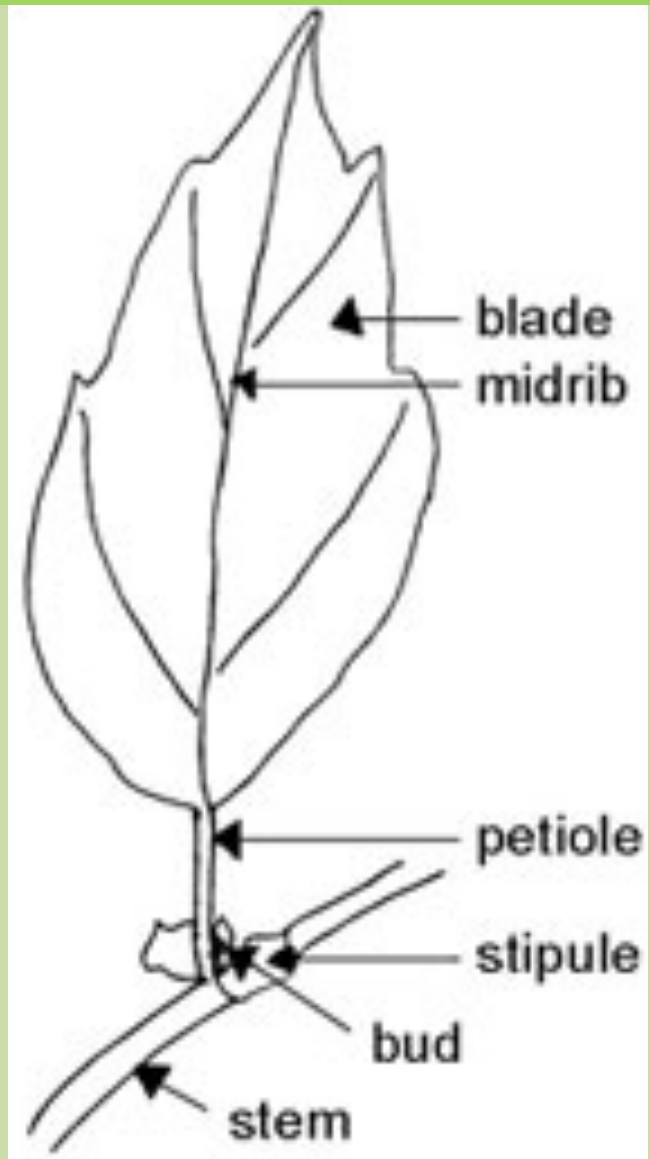


Vines



Epiphytic plants

2. Leaf



- **Leaf Arrangement**



Alternate



Two rowed



**Opposite &
Decussate**



Whorled



**Ground
rosette**

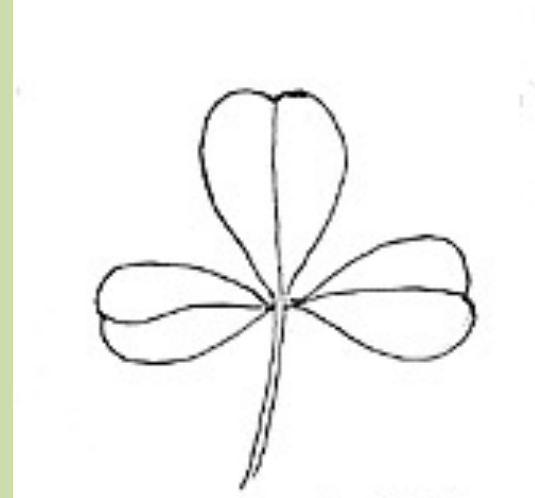
- **Leaf types**



Simple



Palmate



Trifoliate



Paripinnate



Imparipinnate



Bipinnate

- Leaf shapes



linear



lanceolate



oblong



elliptical



ovate



cordate

- **Venation**

- Number of side veins
- Pattern of veins



- **Venation**



- Leaf margin



Serrate



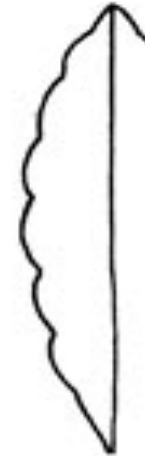
Serrulate



Dentate



Denticulate



Crenate



Sinuate



Lobed



Pinnatifid



Pinnatisect



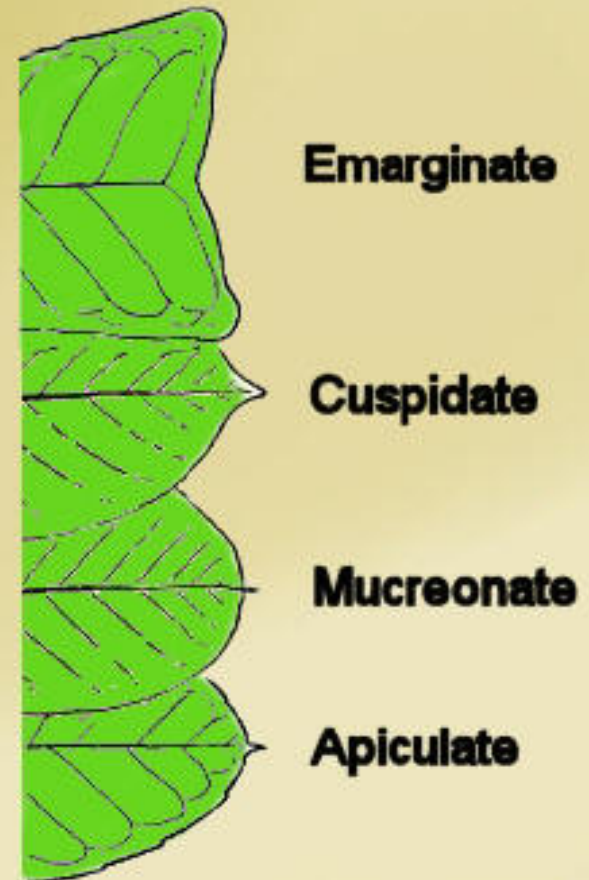
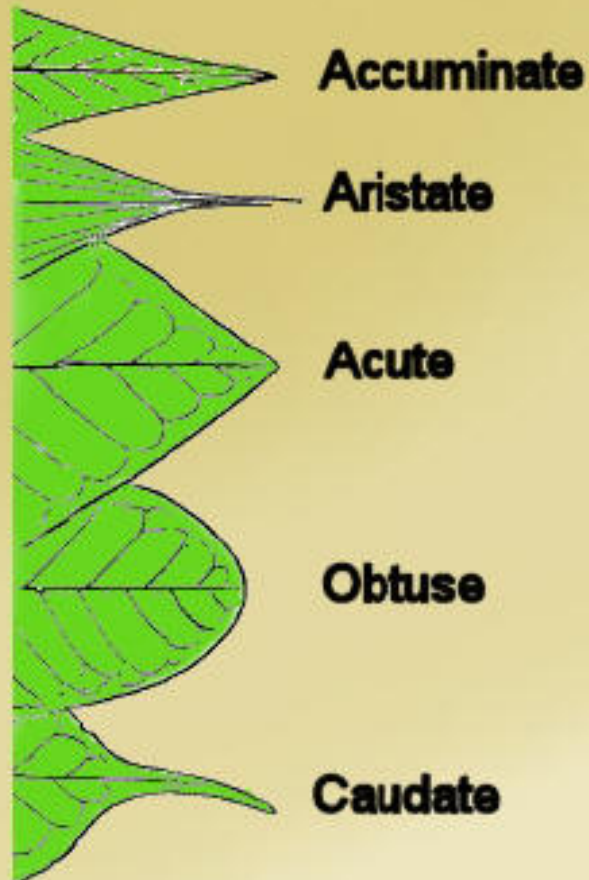
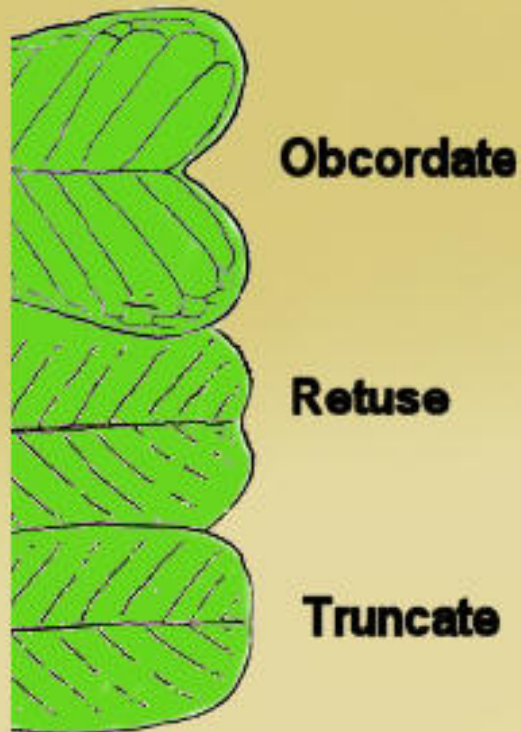
Palmatifid



Lyrate

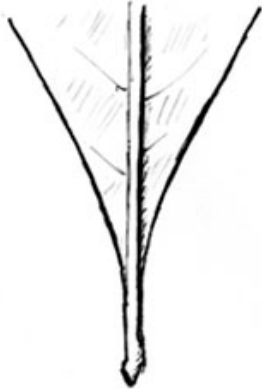
- Leaf tips

Leaf apex



- Leaf base

1. Cuneate



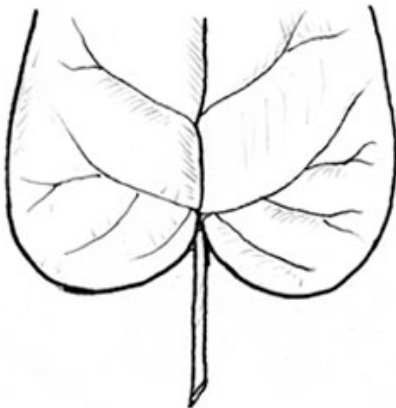
2. Rounded



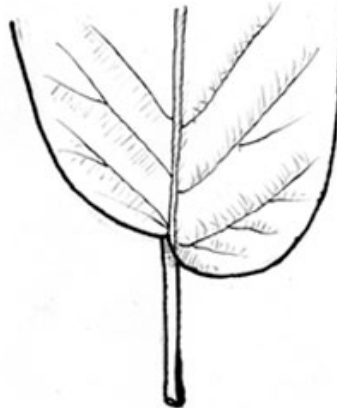
3. Truncate



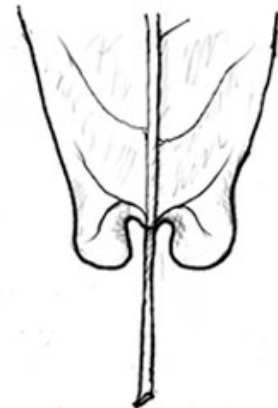
4. Cordate



5. Oblique

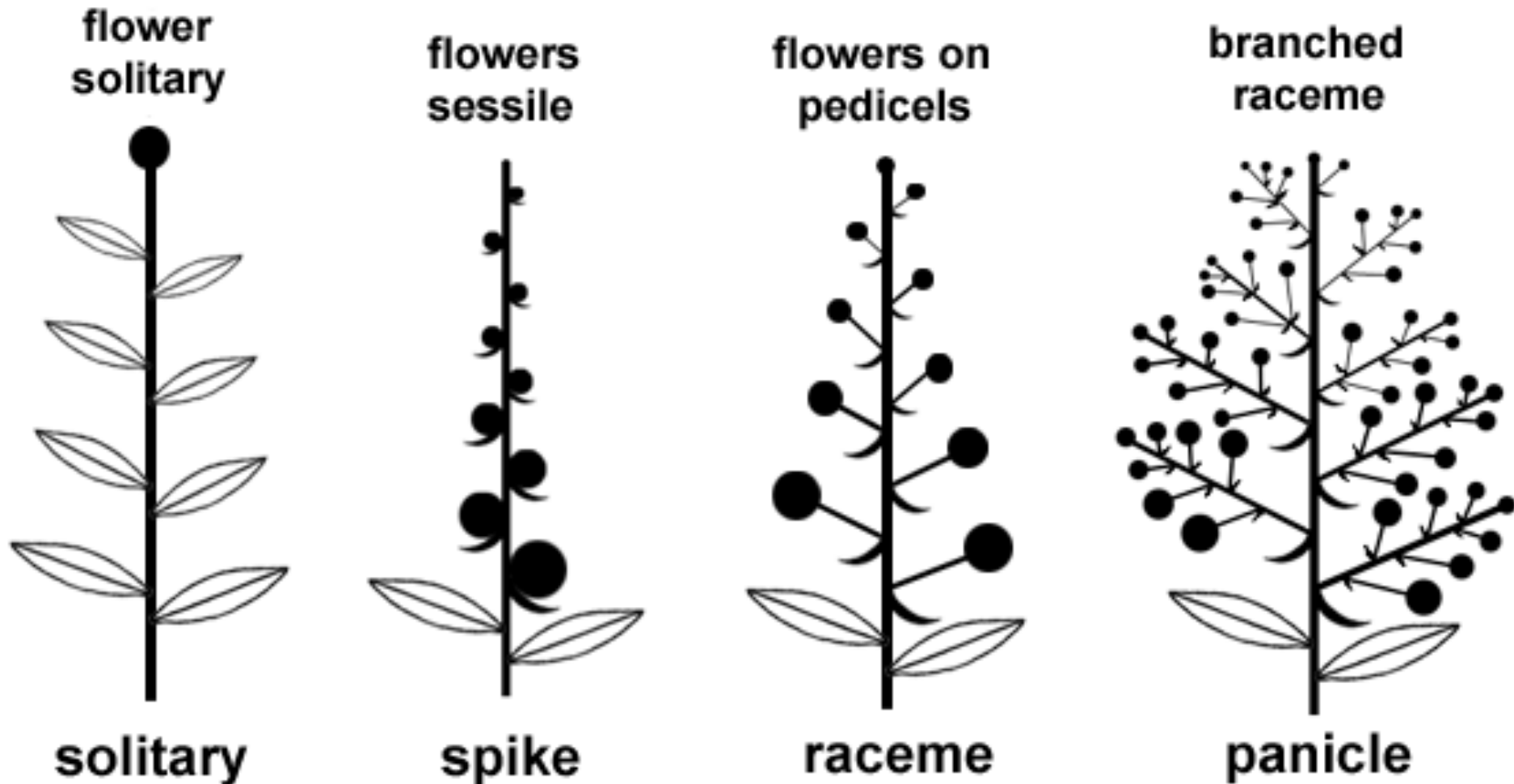


6. Auriculate



3. Inflorescence

- Inflorescence Types



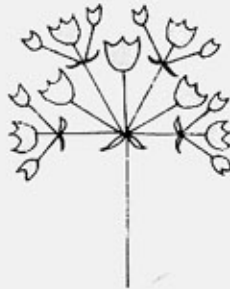
Inflorescence Types *cont...*



Helicoid cyme



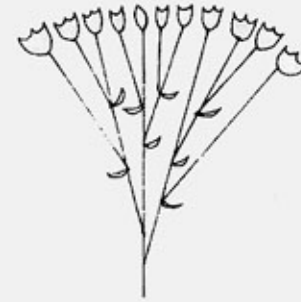
Scorpioid cyme



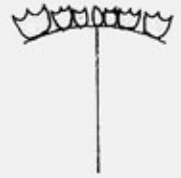
Compound cyme



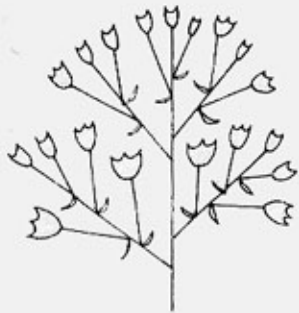
Simple corymb



Compound corymb



Head



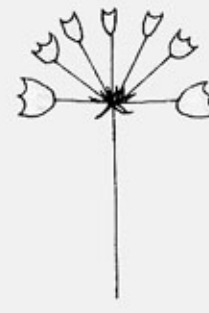
Panicle



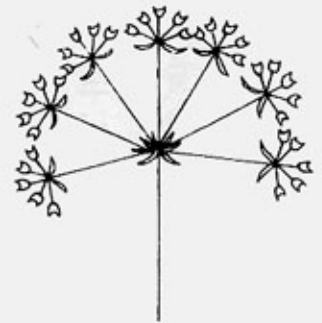
Raceme



Spike



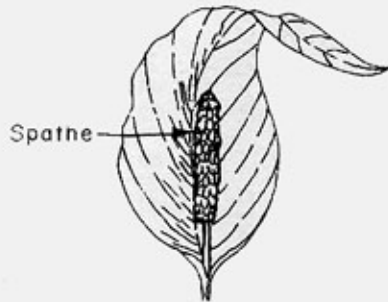
Simple umbel



Compound umbel



Catkin



Spadix

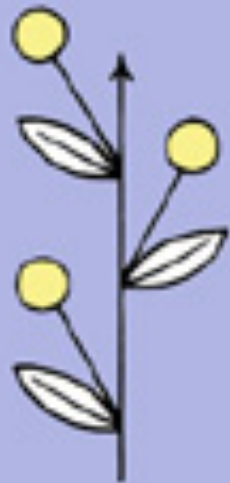


Thyrse



Verticil

• Inflorescence Positions



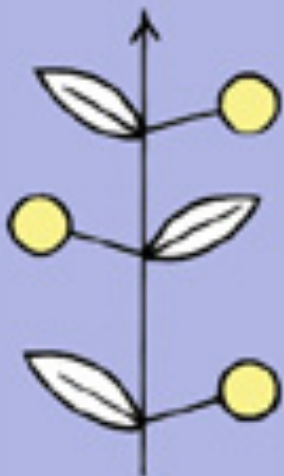
axillary



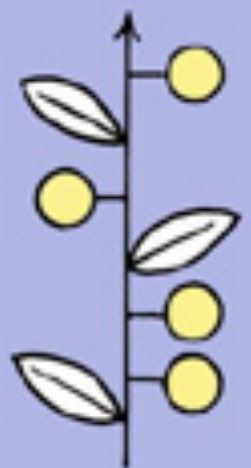
terminal



cauliflorous,
rami florous



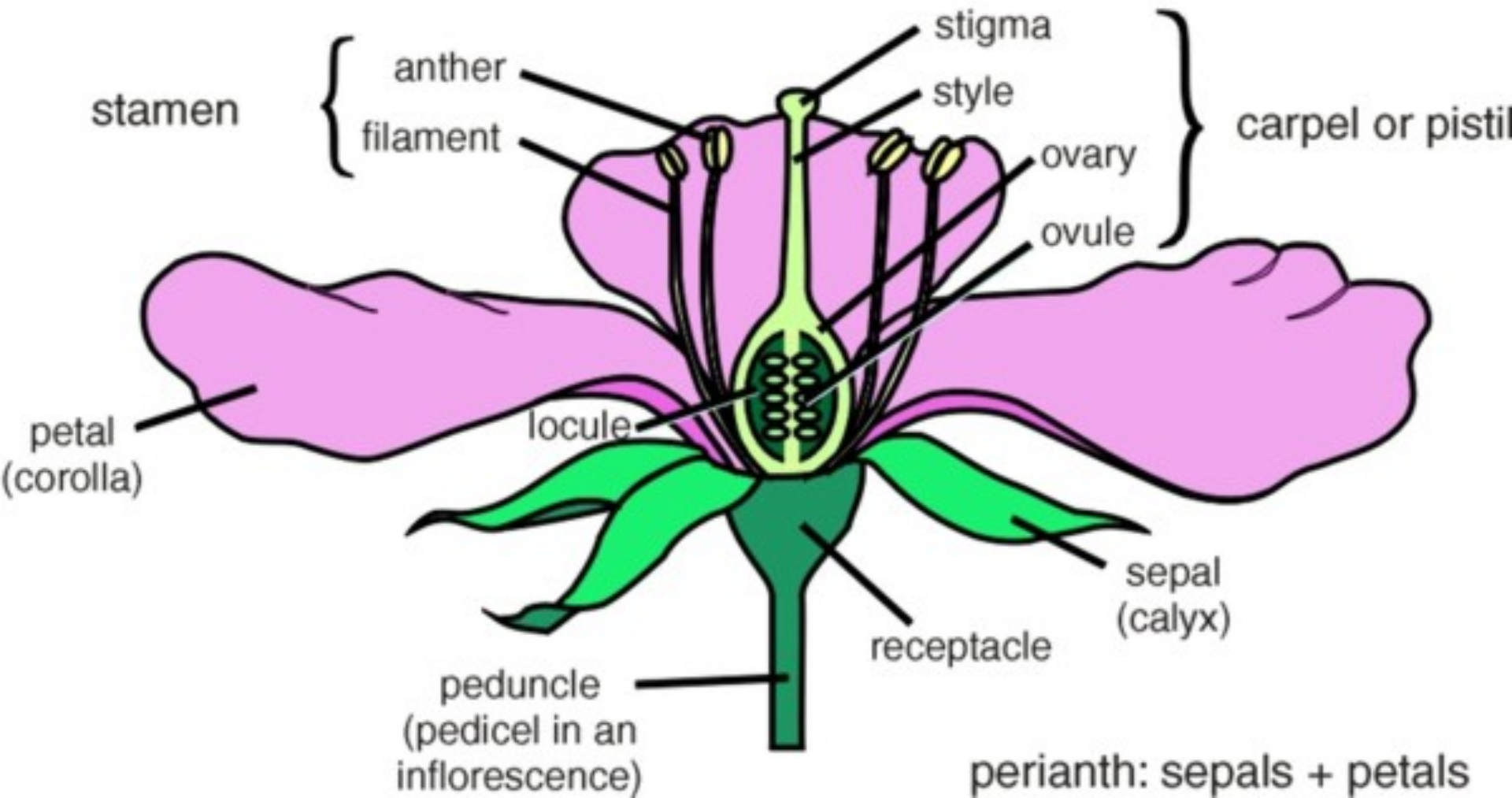
leaf-opposed



intercalary

4. Flower

Basic Flower Structure



• Flower arrangement

- Both male & female parts in the same flower
- Male flowers and female flowers in different flowers
 - On different plants
 - On same plant
 - On same inflorescence – together / separately
 - On different inflorescence



Male

Phyllanthus baillonianus



Female

- Flower shapes



Campanulate
(bell-shaped)



Coroniform
(crown-shaped)



Salverform
(tube-shaped)



Funnelform
(funnel-shaped)



Alate
(winged)



Cruciform
(cross-shaped)



Rosette

5. Fruits



6. Bark

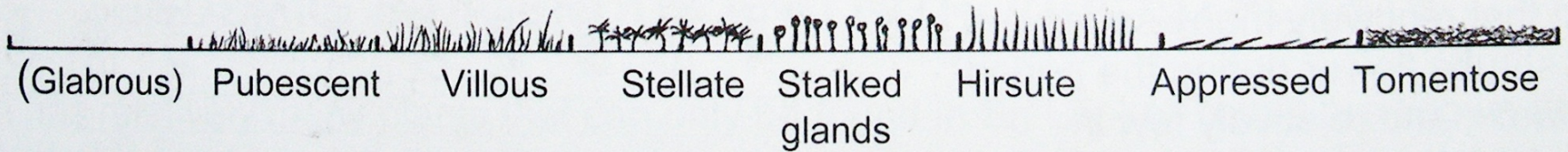
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7. Hair Types

Hairs



7. Hair Types



glabrous



villous

7. Hair Types



Stalked glands



tomentose

8. Special Features

🌿 Smell of the leaves

🌿 Color of sap

🌿 Shape, size and position of spines

🌿 Shape and position of glands



Thank You...

