



Plant Identification

Karyn Molines

Karyn.Molines@gmail.com

Kingdom Plantae

- Division Magnolio **phyta**
 - Flowering Plants
- Class Magnoli **opsida**
- Order Ros **ales**
- Family Ros **aceae**
- Genus *Fragaria*
- Species *Fragaria virginiana*

(Or scientific name)

- Specific epithet *virginiana*
- Common Name Wild Strawberry

Plant Diversity

- Worldwide
 - 400 families
 - 139,000+ species
- Maryland
 - 166 families
 - 3,000+ species



How To Be A Plant Detective

- Pay attention to detail
- Notice subtle characteristics
- Observe similarities and differences among different species



<https://natureconservationlewisham.files.wordpress.com/2011/01/winter-twig-pic.jpg>

Identification Newcomb's Style

Identify ***Petals or Similar Parts***

1. Flower Type

- Regular Flower Parts
- Irregular Flower Parts

2. Plant Type

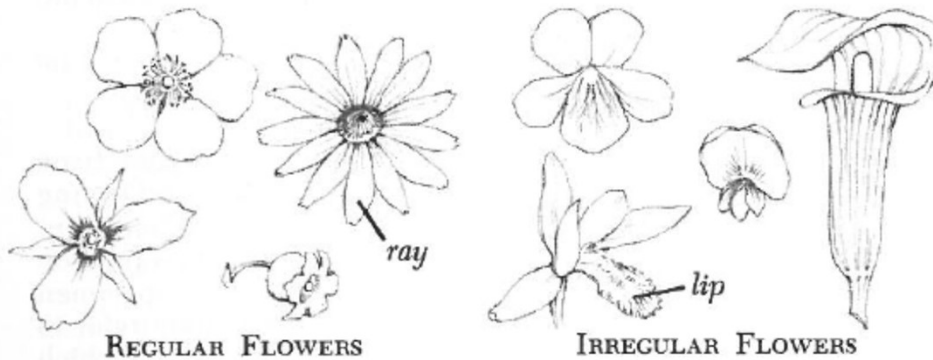
- Wildflower *
- Shrub
- Vine

3. Leaf Type

- Entire
- Toothed
- Lobed
- Divided

* More details later

Flower Type



Newcomb's Style

		Newcomb's Identification System	
Flower Type	Irregular Flowers		1
	2 Regular Parts		2
	3 Regular Parts		3
	4 Regular Parts		4
	5 Regular Parts		5
	6 Regular Parts		6
	7 or More Regular Parts		7
	Parts Indistinguishable		8
Plant Type	Wildflowers	No Apparent Leaves	1
		Basal Leaves Only	2
		Alternate Leaves	3
		Opposite or Whorled Leaves	4
	Shrubs		5
	Vines		6
Leaf Type	No Apparent Leaves		1
	Leaves Entire		2
	Leaves Toothed or Lobed		3
	Leaves Divided		4

Flower Type

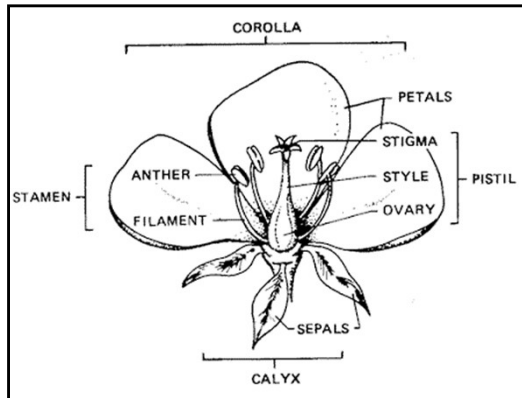
- **Regular Flowers** are radially symmetrical while **Irregular Flowers** are not.
- **Indistinguishable Flowers** have no visible petal-like parts.
 - ➡ A flower may be small and still have discernable parts using a 10x magnifier.

Flower Parts

- Petals
- Similar Petal-like Parts
 - Sepals
 - Especially if no petals
 - Ray flowers*
 - Disk flower petals if no ray flowers present
 - Bracts (rarely)
 - Stipules (rarely)

* Flowers in the Aster family, like daisies and dandelions

Flower Structure



- **Corolla**= all the petals
- **Calyx**= all the sepals
- **Pistil**= all female parts
- **Stamen**= all male parts

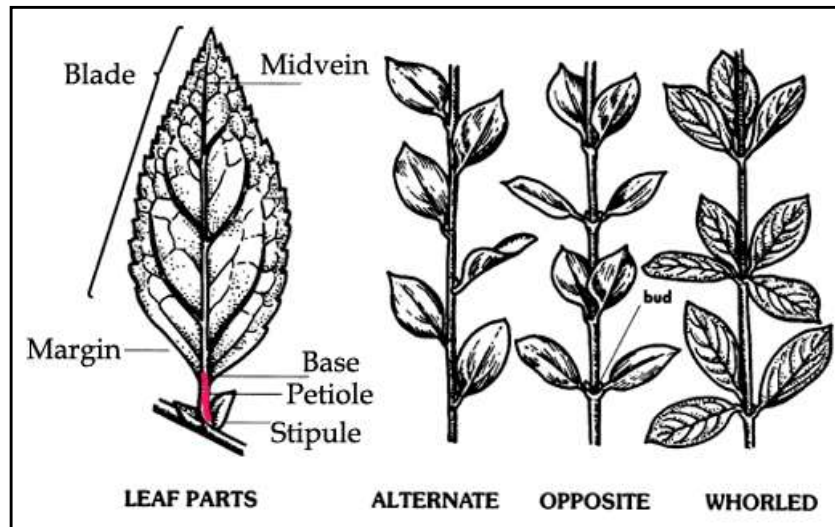
Plant Type

- Wildflower
 - Basal Leaves Only
 - Alternate
 - Opposite
 - Whorled
- Shrub
- Vine



Wildflower Type

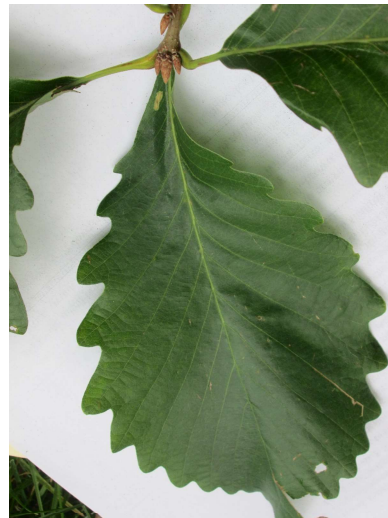
Leaf Parts and Arrangement



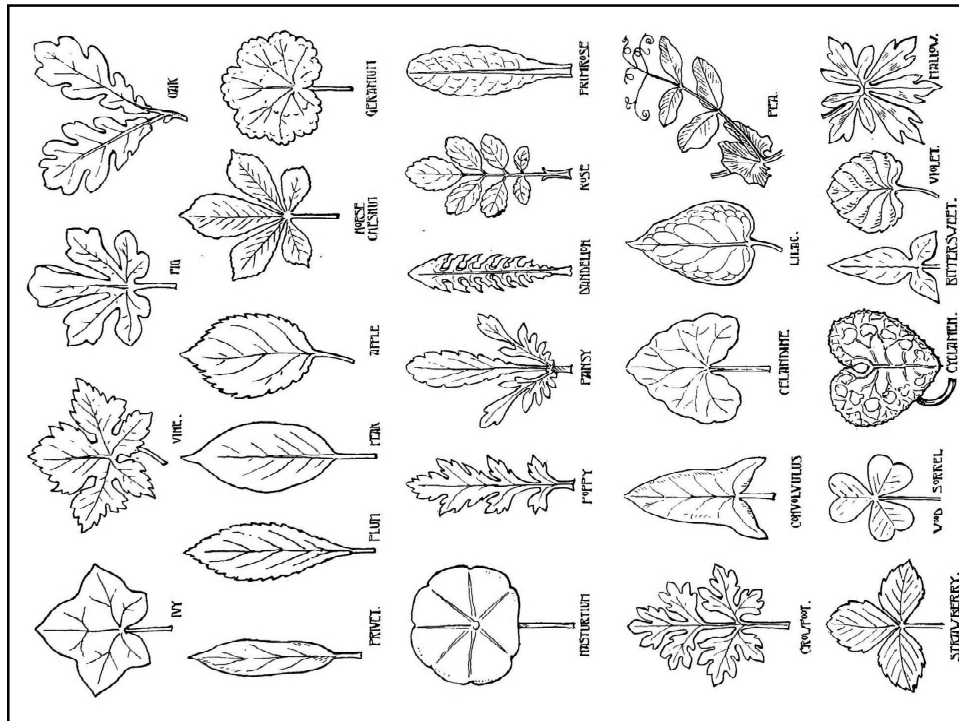
Copyright © 2001-2009 The vPlants Project, All Rights Reserved

Leaf Type

- Entire
- Toothed
- Lobed
 - ➔ Leaves *lobed only at base* are considered either entire or toothed
- Divided
 - Includes indentations that go almost to the midrib*

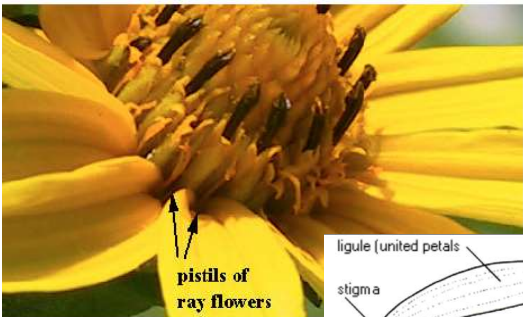


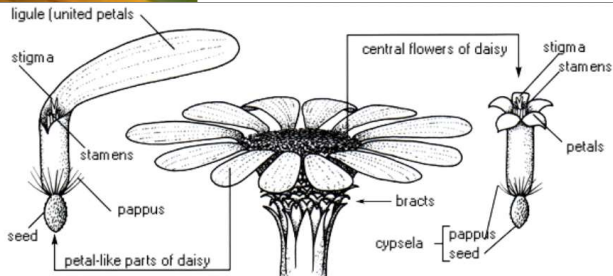
* In borderline cases, check in both lobed and divided



Asteraceae Composite Family

- Flowers
 - Sepals: pappus
 - Petals 5 tiny and fused
 - Ray flattened, slightly irregular
 - Disc tubular
 - Phyllaries (Sepal-like Bracts)
 - Form an involucre
 - Stamens 5 fused at top
 - Pistils 1, 2-parted, inferior
 - Can see 2 styles





A daisy flower (Asteraceae) — a composite head of many small flowers

“Stems”

- **Acaulescent** – used to describe stems in plants that appear to be stemless. Actually these stems are just extremely short, the leaves appearing to rise directly out of the ground, e.g. some Viola species.
- **Arborescent** – tree like with woody stems normally with a single trunk.
- **Branched** - aerial stems are described as being branched or unbranched
- **Bulb** – a short vertical underground stem with fleshy storage leaves attached, e.g. onion, daffodil, tulip. Bulbs often function in reproduction by splitting to form new bulbs or producing small new bulbs termed bulblets. Bulbs are a combination of stem and leaves so may better be considered as leaves because the leaves make up the greater part.
- **Cladode** (including phylloclade) – a flattened stem that appears more-or-less leaf like and is specialized for photosynthesis, e.g. cactus pads.
- **Corm** – a short enlarged underground, storage stem, e.g. taro, crocus, gladiolus.
- **Fruticose** – stems that grow shrublike with woody like habit.
- **Pedicel** – stems that serve as the stalk of an individual flower on an inflorescence or infructescence.
- **Peduncle** – a stem that supports an inflorescence
- **Petiole** – a stem that supports a leaf
- **Pseudostem** – a false stem made of the rolled bases of leaves, which may be 2 or 3 m tall as in banana
- **Rhizome** – a horizontal underground stem that functions mainly in reproduction but also in storage, e.g. most ferns, iris
- **Runner** (plant part) – a type of stolon, horizontally growing on top of the ground and rooting at the nodes, aids in reproduction. e.g. garden strawberry.
- **Scape** – a stem that holds flowers that comes out of the ground and has no normal leaves. Hosta, Lily, Iris, Garlic.
- **Stolon** – a horizontal stem that produces rooted plantlets at its nodes and ends, forming near the surface of the ground.
- **Thorn** – a modified stem with a sharpened point.
- **Tuber** – a swollen, underground storage stem adapted for storage and reproduction, e.g. potato.

from https://en.wikipedia.org/wiki/Plant_stem