



Introduction to Horticulture




Liz Woodward
Mo Price
San Diego County Master Gardeners
Class of 2010



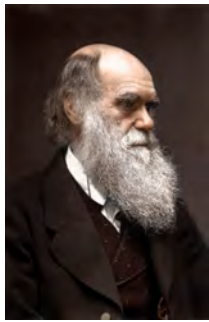
Horticulture Defined

- *hortus* (garden) + *colere* (to cultivate)
- Culture of Gardens vs. Fields of Crops
- Fruits, Vegetables, Ornamentals, Herbs, Specialty Crops



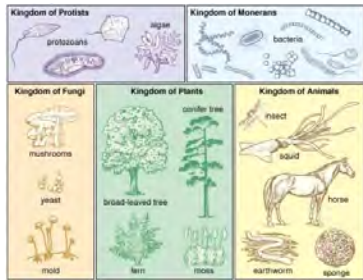


Carl Linnaeus
1707-1778



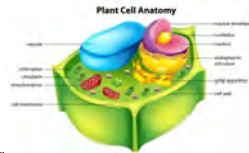
Charles Darwin
1809-1882

5 Kingdoms of Living Organisms

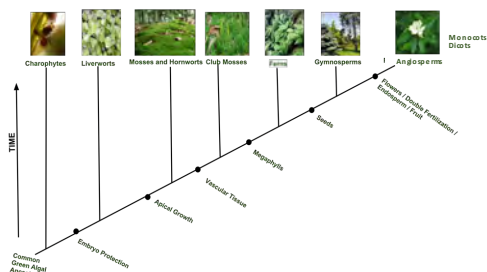


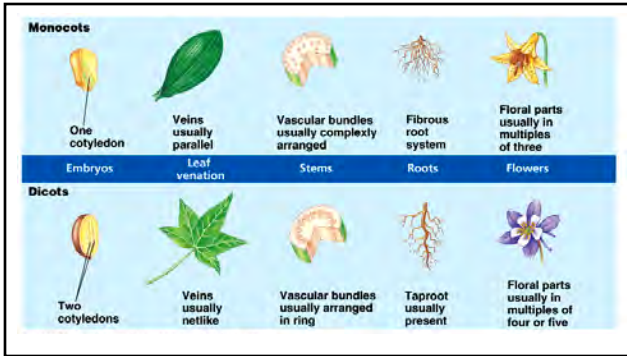
What is a Plant?

- Member of the kingdom Plantae
- Living, immobile, no conscious
- Rigid cell walls made of cellulose
- Can regenerate lost tissues and organs
- Carry out photosynthesis
- They are able to make their own food (autotrophs)



The Evolution of Plants





Botanic Nomenclature

Purpose, Pronunciation & Format

Class of 2016
MG Training Support

Why use Botanic Names?

- Botanic names use the same language worldwide: Latin
- Botanic names do not have multiple meanings
- Many botanic names have specific meaning

What's in a Latin name?

alba – white	ferox – very thorny
alpestris - alpine	flavens – yellowish
bellus – beautiful	glaber – smooth; without hairs
broccolo – flowering top	heli – sun
caerule – dark blue	imbricata – overlapping, like scales
candicans – hairy or wooly	ingens – enormous
cereus - waxy	obesus – fat
coccineu – scarlet	phylla – leaves (pertaining to)
cordata – heart shaped	repens – crawling, creeping
crassu – fleshy, thick	ericeus - silky
dulcis – sweet	serpens – creeping, snakelike
edulis – edible	vulgaris - common

What do these 3 plants have in common?

- Poison Oak
- Silky Oak
- She Oak

What do these 3 plants have in common?

- California Pepper
- False Pepper
- Peppercorn Tree

Pronunciation Facts

- Horticulturists don't always agree on pronunciation
- Individual botanists rarely are completely consistent in pronunciation
- People tend to pronounce names the way they first learned them regardless of any subsequently encountered info



Can you say:

Chrysanthemum
?

Botanic Name Pronunciation

How do you say: Tomato? Basil? Protea?

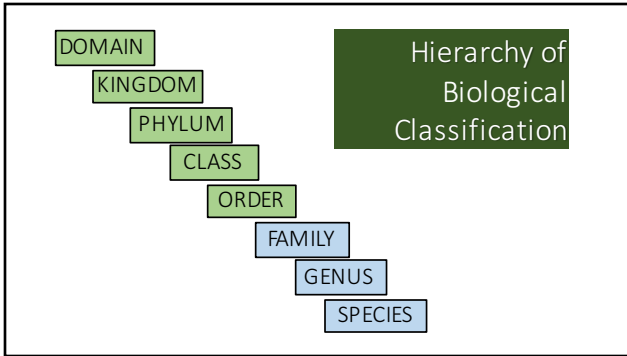
***Alyogyne huegelii*?**

Try this web site: davesgarden.com

PlantFiles: Blue Hibiscus, Lilac Hibiscus, Purple Hibiscus, California Hibiscus
Alyogyne huegelii 'Santa Cruz'


Family: *Malvaceae* (mal-VAY-see-ee) (Info)
Genus: *Alyogyne* (al-ly-oh-GY-nee) (Info)
Species: *huegelii* (hew-GEL-ee-eye) (Info)
Cultivar: Santa Cruz






Family <ul style="list-style-type: none"> • 640 Families • Suffix of: <i>aceae</i> 	Format
Genus <ul style="list-style-type: none"> • 17,000 Genera • <i>Genus is Capitalized & in Italics</i> 	
species <ul style="list-style-type: none"> • 1,064,400 species • <i>species is lowercase & in italics</i> 	
'hybrid' Var, x <ul style="list-style-type: none"> • Countless hybrids, sub-species, variations, trade names, etc. 	


Plant Family: Lauraceae



Laurus nobilis
Bay Laurel tree



Cinnamomum camphora
Camphor tree




Persea americana
Avocado tree

***Lavandula stoechas* 'Otto Quast'** **Family: Lamiaceae**
 (lay-mee-AY-see-ee)
 • Mint Family
 • Flavorful herbs
 • Many with square stems

Lavandula • Lavender
 (Genus) (lav-AN-dew-lah)

stoechas • Spanish lavender
 (species) (STOW-kass)

'Otto Quast' • Name of person who discovered this hybrid
 ('Hybrid')



Common Abbreviations

Lavandula stoechas, *Lavandula canariensis*, *Lavandula dentate*
 or..... *Lavandula stoechas*, *L. canariensis*, *L. dentate*

Lavandula sp. – Used when referring to one unknown species of *Lavandula*

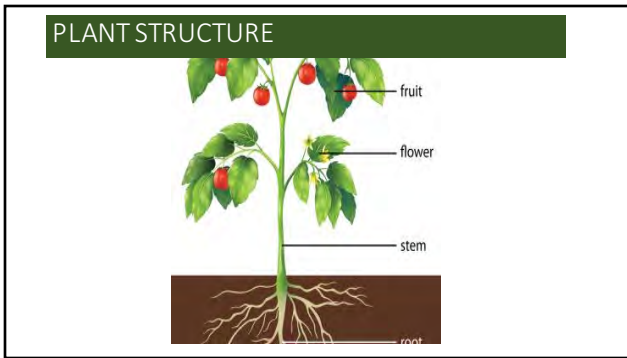
Lavandula ssp. – Used when referring to many unknown species of *Lavandula*

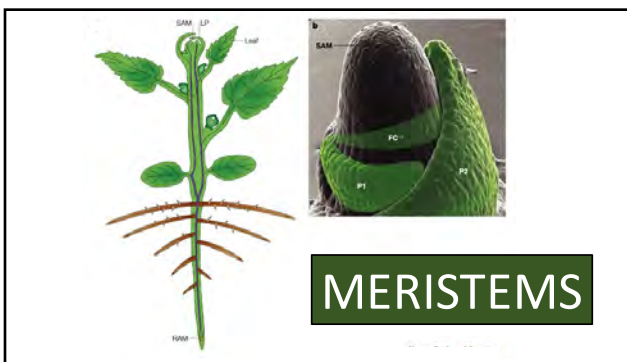
Another Helpful Web Site

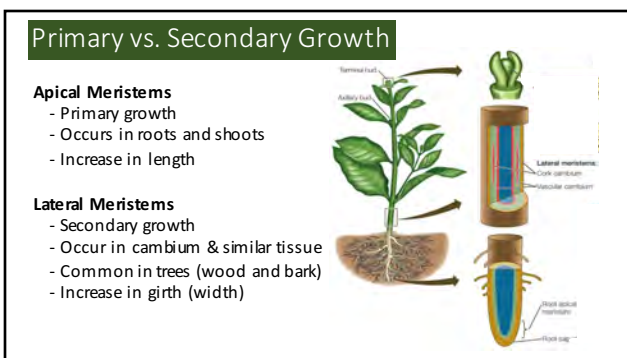
Tropicos.org

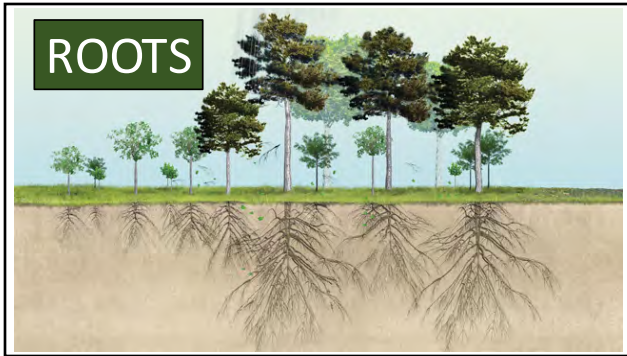
Search for Botanic Names...
all Genera within a Family,
all Species within a Genus, etc.

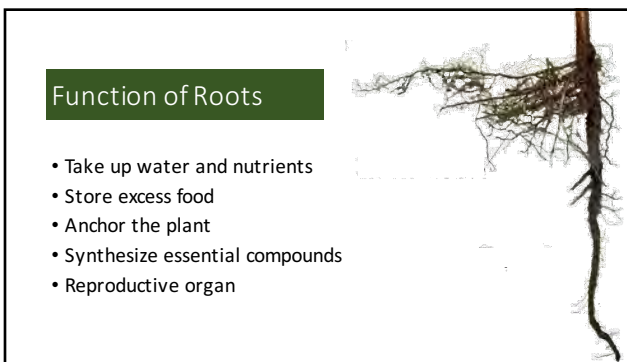
A Web Site of Missouri Botanical Garden

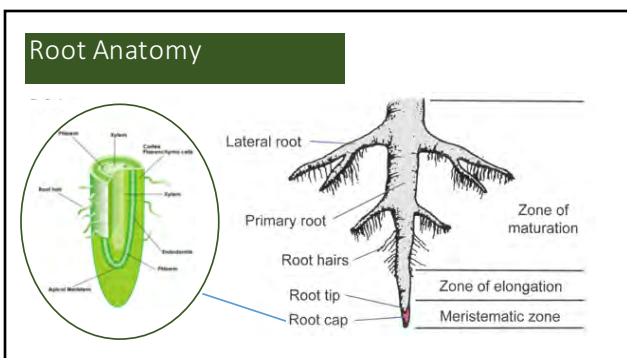












Types of Roots

Taproot –absorbs water deep in the ground (root vegetables, trees)

Fibrous roots stay close to the top of the soil (bedding plants, tomato)

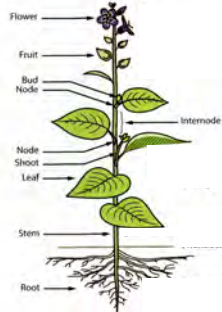
Adventitious roots help anchor plant or help plant climb (strawberries, ivy, some grasses)



STEMS

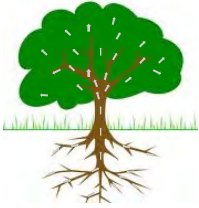


Structure of a Seed Plant



Plant Vascular Tissue

Xylem tissue conducts water & dissolved mineral nutrients from the roots **upward**.

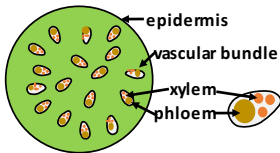


Phloem tissue conducts photo-synthetically produced food & other compounds from the leaves to other plant parts – **up & down**.



Plant Vascular Tissue – Monocot Cross Section

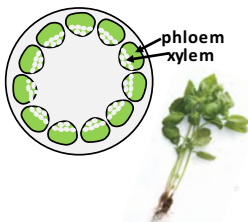
Monocot



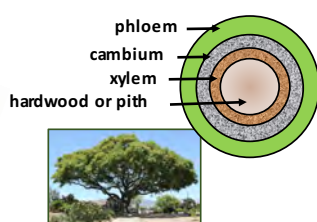
Lily's, grasses, palms, etc.

Plant Vascular Tissue – Dicot Cross Section

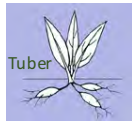
Herbaceous



Woody



Stem Modifications



Stem or Leaf?



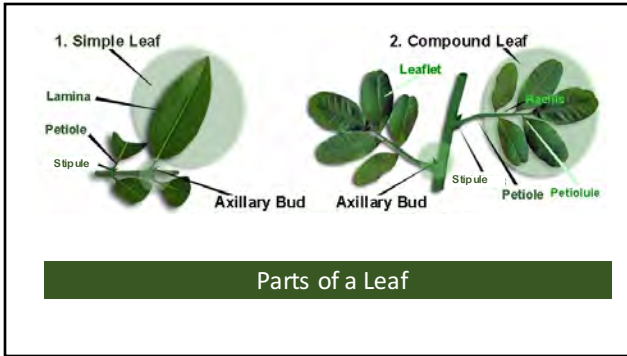
Acacia aphylla

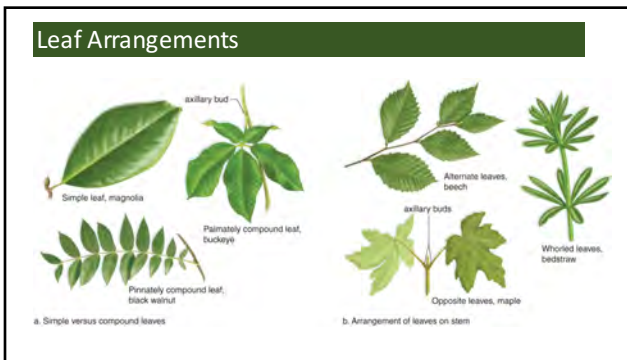


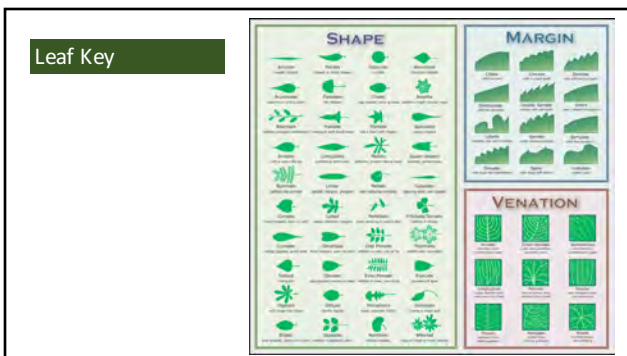
Opuntia sp.

LEAVES

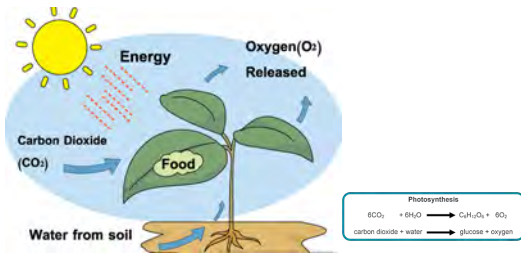




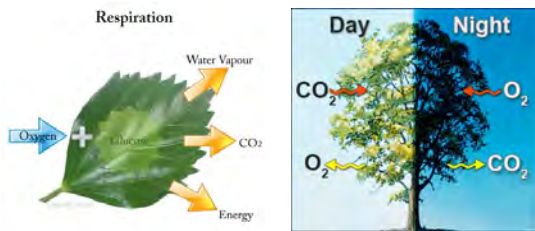




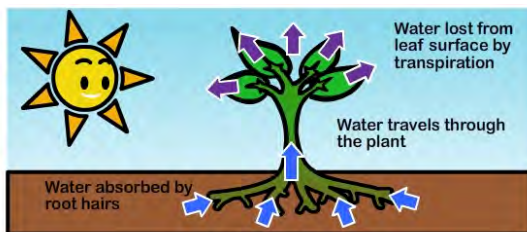
Photosynthesis



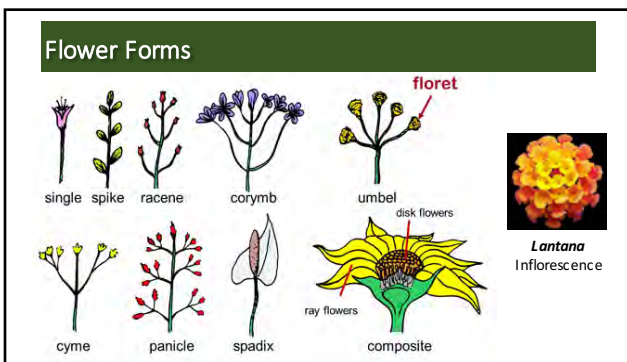
Respiration

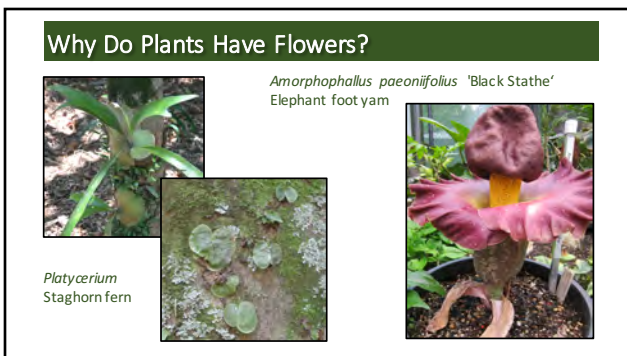


Transpiration

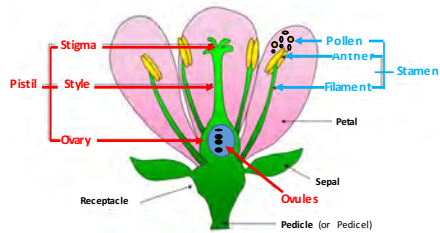








Perfect Flower



A **Perfect** flower has the **Pistil** & **Stamen** on the same flower.

Imperfect Flower



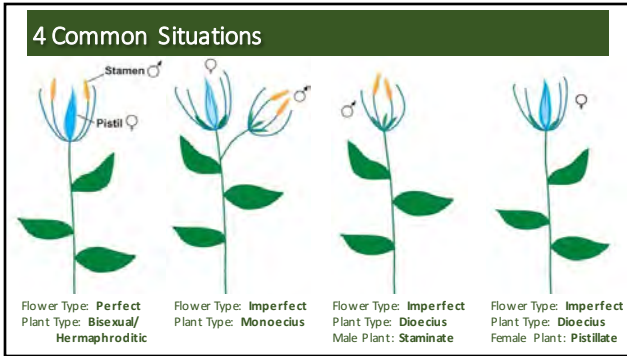
Female - Pistillate

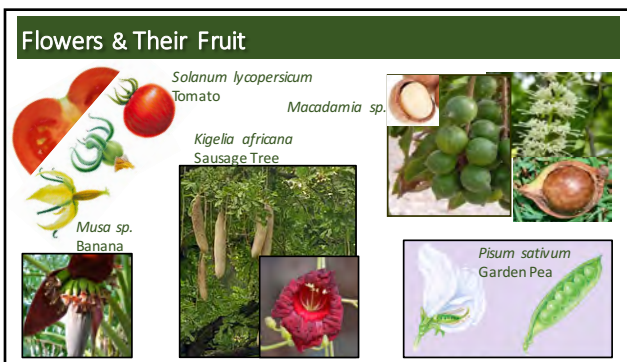
Male - Staminate

An **Imperfect** flower has a **Pistil** or **Stamen**, but not on the same flower.

Sex and the Zucchini









Classification of Plants

- Growth Habit – annuals, perennials, biennials
- Structure or Form – woody, herbaceous, vine, shrub, tree
- Leaf Retention – evergreen, deciduous
- Climatic Adaptation – tropical, subtropical, temperate
- Use – ornamental, edible, native

What's That Bloomin' Thing?



Class of 2016
MG Training Support



Purpose

- Learn to identify common plants in S.D. County
- Increase your knowledge of Plant Families

Procedure

- You will be given a presentation schedule
- Be prepared at least one week ahead to allow time for additional presentations
- You can swap your plant/date with another trainee's plant/date

Have Fun & Keep it Simple!

Procedure

- Oral presentation will be four minutes maximum.
- Report only the distinguishing, significant, unusual, and fascinating aspects of your plant.
- Provide a written 1-2 page report to be uploaded to the Training Website.

Have Fun & Keep it Simple!

Procedure

- You can do the following:
 - Bring plant samples
 - Do a PowerPoint
 - Draw your flower

Have Fun & Keep it Simple!

