Lecture 5

Medicinal Plant

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Plant Classification

- In order to study the billions of different organisms living on Earth, scientists have sorted and classified them based on their similarities and differences.

Theophrastus 370-285 B.C.

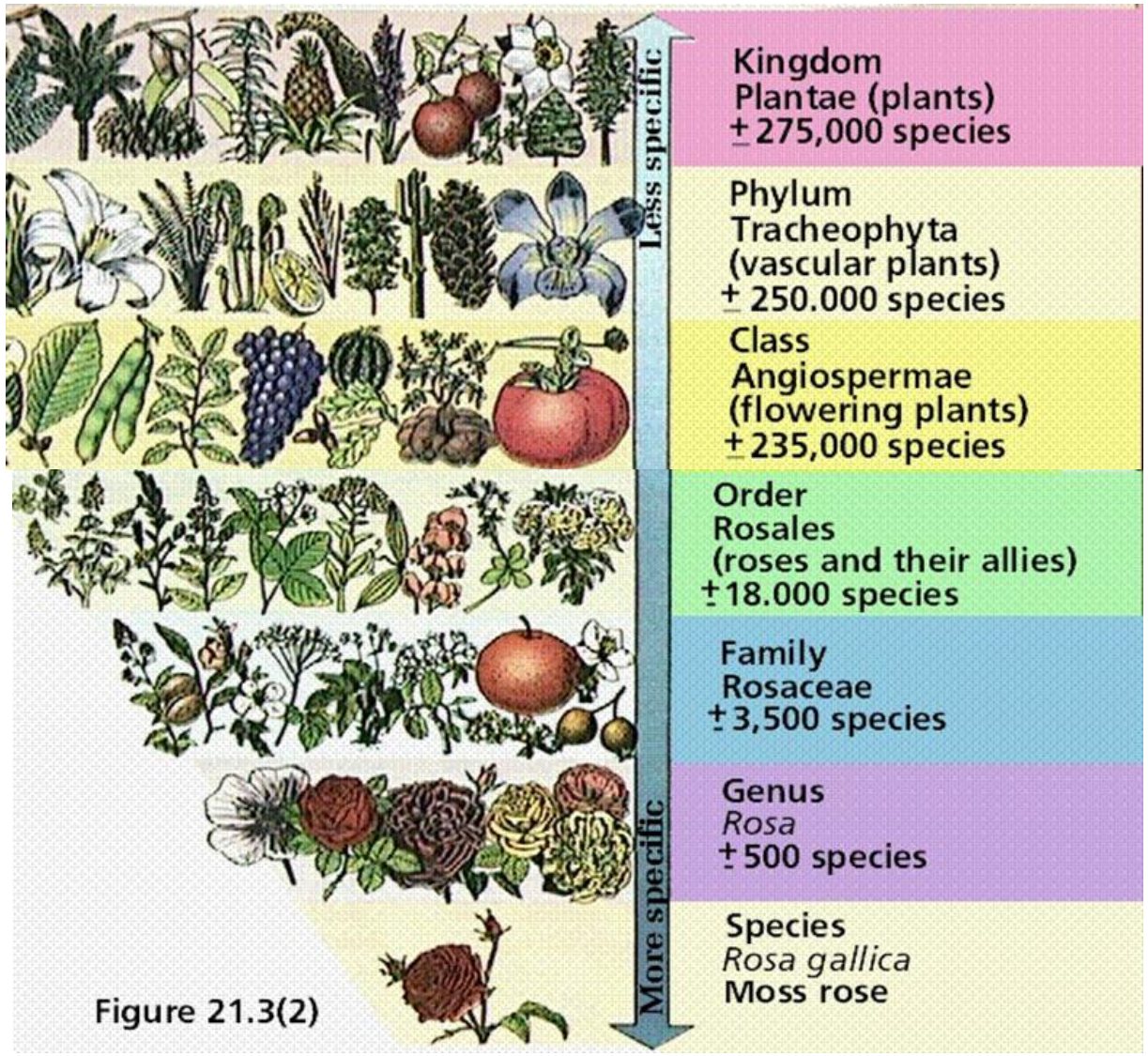
- He was a Greek philosopher and naturalist and is often called the "Father of Botany."
- He was a pupil of Aristotle and was the first person to publish a classification of plants.
- Classified plants based on form
- Herbs, shrubs, trees (Annuals, perennials, biennials)

Carolus Linnaeus 1707-1778

- Linnaeus was the first person to propose an orderly system for classifying organisms.
- He developed the Binomial System of Naming Plants in 1753
- Bi= 2 –Nomial= name –
- All plants have a scientific name composed of two Latin names known as a genus and specie
- His system is still used today and his called the “Father of Taxonomy”

Plant Classification

- **Kingdom**
- **Phylum**
- **Class**
- **Order**
- **Family**
- **Genus**
- **Species**



Plant Kingdom

- Over 275,000 species
- Classify based on several characteristics, including:

1. Whether they can circulate fluids (like rainwater) through their bodies or need to absorb them from the moisture that surrounds them
2. How they reproduce (by spores or different kinds of seeds)
3. Their size or stature

Phylum: Tracheophyta

- Over 250,000 plants in this category
- Plants are divided in this category based on:

1. whether or not the plant bears or produces seeds.
2. Vascular or Non-Vascular plants

Class:

- Plants are divided into two types of classes

1. Angiospermae (angiosperms)- plants produced flowers, over 235,00 species

- Subclass:

a) Dicotyledonae (dicotyledons/dicots) plants with two seed leaves

b) Monocotyledonae (monocotyledons/monocot) plants with one seed leaf

2. Gymnospermae (gymnosperms)- plants do not produce flowers

Order: Rosales

- A group of related plant families, classified in the order in which they

are thought to have developed their differences from a common ancestor based on:

1. Vegetative Structures
2. Reproductive Structures

- Over 18,000 species
- Names of orders end in ales –

Family: Rosaceae

- Over3,500 species
- classified based on:

1. Vegetative Structures
2. Reproductive Structures

- consists of plums, apples, strawberries because they all have similar flower structures.
- The names of families end in –aceae –

Genus

- *Acer*- all maples
- *Pinus*- all pines
- *Ilex*- all hollies
- *Quercus*- all oaks
- *Begonia*- all begonias
- *Rhododendron*- all azaleas
- *Juniperus*- all junipers
- *Viola*- all violet types

Genus: *Rosa*

- Over 500 species
- All plants having the same generic name – are said to belong to the same Genus and have similar characteristics and are closely related.
- The name of the Genus should be written with a capital letter.

Specie:

- This is the highest level that defines an individual plant. –
- Often, the name will describe some aspect of the plant. – The color of the flowers, size or shape of the leaves, or it may be named after the place where it was found.
- Together the Genus and species name refer to only one plant, and they are used to identify that particular plant.

Specie:

- The specie name is an adjective that describes the genus. –

*Alba means white: *Quercus alba*= white oak

*Rubrum means red: *Acer rubrum*= red maple

- The name of the species should be written after the Genus name, in small letters, with no capital letter.

Examples of Genus and specie

- ***Acer rubrum***= Red maple
- ***Acer saccharum***= Sugar maple
- ***Acer palmatum***= Japanese maple
- ***Quercus palustris***= Pin oak
- ***Quercus virginiana***= Live oak
- **Specific names give geographical information:**
- ***Pinus virginia-*** Virginia Pine
- ***Taxes canadensis***= Canadian Yew
- ***Tsuga caroliniana***= Carolina Hemlock

Example of Classification

- Kingdom: Plantae
- Phylum: Spermatophyta
- Class: Angiospermae
- Sub-Class: Monocotyledonae
- Family: Gramine
- Genus: *Zea*
- Specie: *mays*
- Common Name: Corn Plant



THANKS
FOR
LISTENING