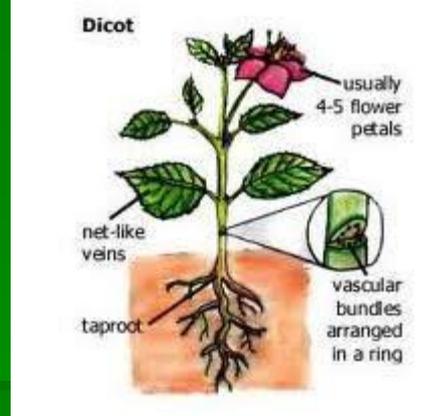
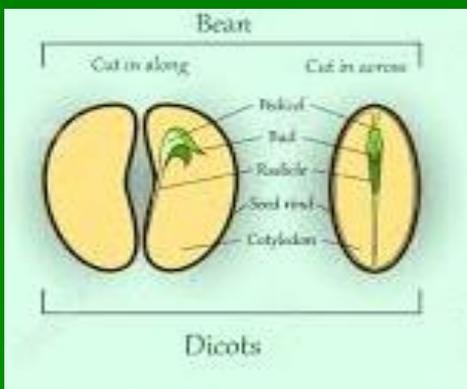




Lecture 7

Dicot class overview





- **Dicots (Dicotyledones, Magnoliopsida) class**
- There are about 190 000 known species of dicots. This class is larger than monocotyledons.

SUBCLASS MAGNOLIIDAEE

- Magnoliidae, by evolutionary advancement, is the most primitive subclass. The subclass includes a group of the most archaic orders of flowering plants. There are 18 orders, 43 families, 340 genera and approximately 10,000 species within the subclass Magnoliidae. They are mostly woody plants. There are no vessels in the representatives of some taxons. The flowers are bisexual, less often unisexual, spiral (acyclical) or spirocyclic (hemecyclical). Gynoecium is mostly apocarpous.



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RANUNCULIDAE SUBCLASS

- *Ranunculidae* include 5 orders, 14 families, approximately 200 genus and 4000 species. This subclass small subclass , descended from Magnolidae,- mostly herbaceous plants, with good conductive system, without avascular forms The vessels usually with a simple perforation. The gynoecium are mostly apocarpous, perhaps – syncarpous.



CARYOPHYLLIDAE SUBCLASS

□ There are 5 orders, 14 families, approximately 4000 species. Most representatives of this subclass are adapted for growth in arid climates and are most characteristic of the semi-desert and desert deserts. However, there are also many alpine and forest species, especially among representatives of the pink family. The predominance of herbs and shrubs with a well-developed conductive system is characteristic.

□ Gynoecium is almost always formed by fused carpels, and only in the most archaic forms of carpels still remain free. This brings them closer to ranunculides and magnolidides.



□

CARYOPHYLLIDAE

Caryophyllales

Polygonales

Caryophyllaceae

Portulacaceae

Polygonaceae

Amaranthaceae

Cactaceae

Chenopodiaceae

HAMAMELIDIDAE SUBCLASS

- It is one of the large branches of the genealogical tree of flowering plants, which originates directly from magnolids, probably from the most primitive and ancient representatives of them. Among the representatives, vascular forms with a very primitive organization of the conduction system are still preserved, but they have not the primitive types of flower, or mono-sulcate pollen grains. Carpels in some cases remain free. The main line of evolution of hamamelids is a gradual transition from entomophilia to anemophilia.



HAMAMELIDIDAE

Fagales

Hamamelidiales

Eucommiales

Juglandales

Fagaceae

Betulaceae

Platanaceae

Buxaceae

Eucommiaceae

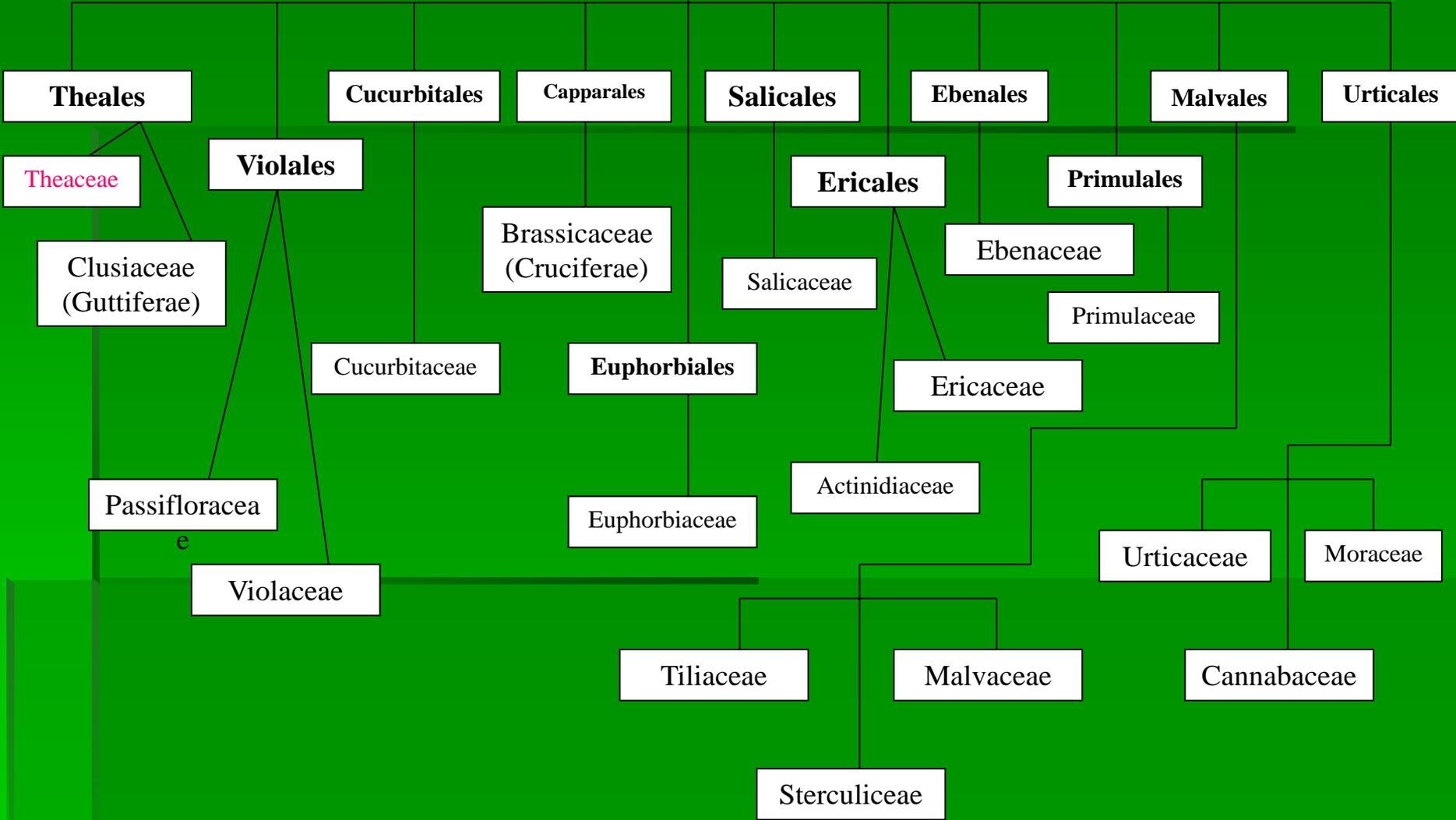
Juglandaceae

DILLENIIDAE SUBCLASS

- The largest subclasses of flowering plants.
- Phylogenetically, this is also one of the most important branches of the genealogy tree, which connects link magnolides and rosides. For many representatives a cenocarpous gynoecium with fused styles of a highly specialized flower is characteristic. A lot of herbaceous representatives.



DILLENIIDAE

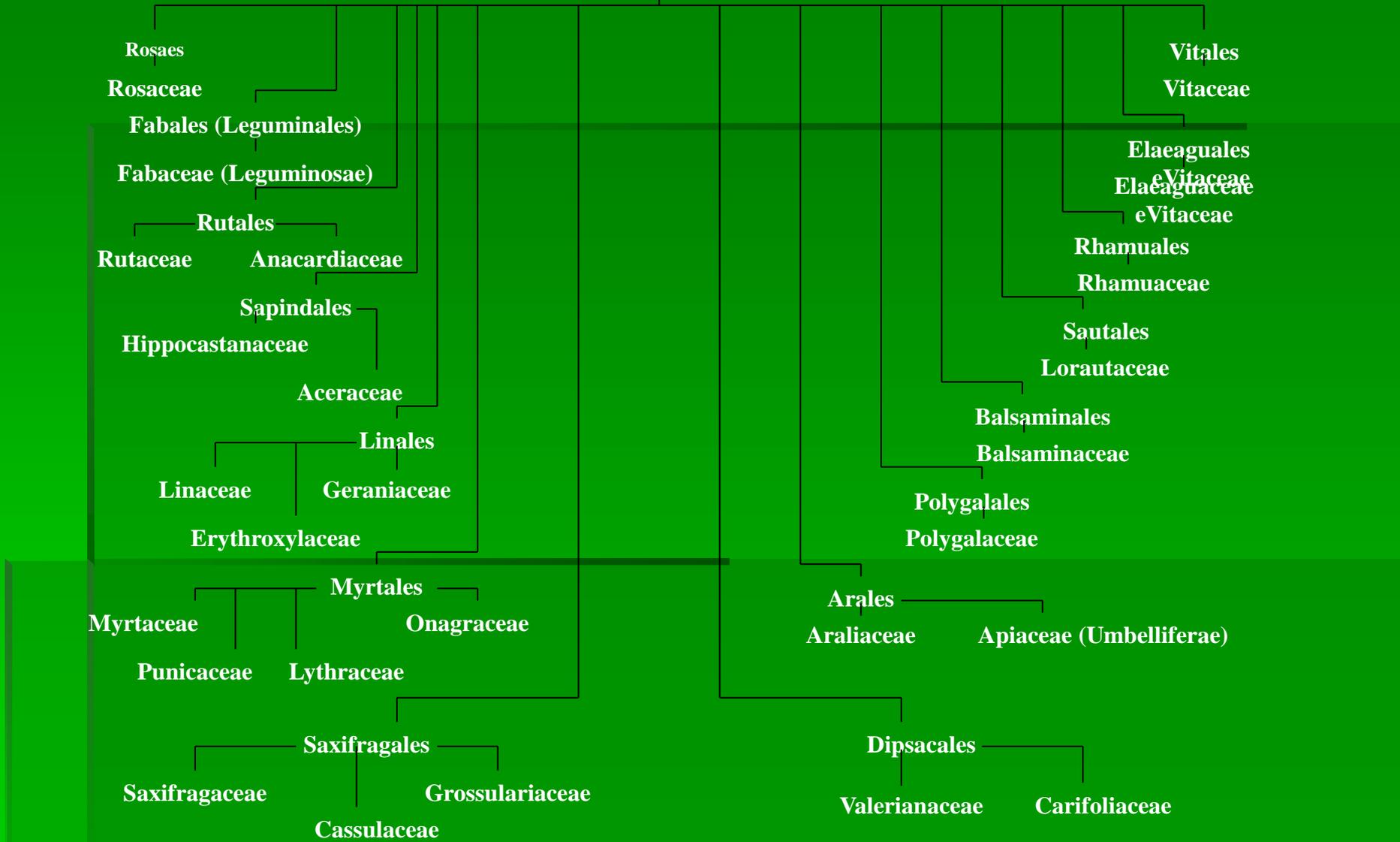


ROSIDAE SUBCLASS

- The orders included in the subclass of rosids are very different in appearance, the structure of the flower and the anatomy of the vegetative organs. However, they are united by a common origin and, like other subclasses, rosids represent a natural taxon that corresponds to one of the large phylogenetic branches of dicotyledons. Rosids have a common origin with modern dilileds and, may be, are formed from their oldest representatives. Simplification of the flower and other organs, fusion of carpels, and other more evolutionally advanced features are observed.



ROSIDAE



LAMIIDAE SUBCLASS

- Apparently, they come from the ancient representatives of the subclass of rosids and represent a powerful evolutionary branch, characterized by the high specialization of the gamopetalous, fused parts perianth. We observe more zygomorphy in the structure of flower. The gynoecium is always cenocarpous and consists of the greater part of 2 carpels, forming the upper, middle, or lower ovary. There are a lot of herbs along with trees and shrubs in the subclass, sometimes we observe very specialized forms.



ASTERIDAE SUBCLASS

- The subclass includes the most highly developed groups of dicotyledons, characterized by many progressive features. Although among representatives there are still many trees and shrubs, but the dominant of their representatives are herbs, often annuals. The number of flower parts in asteridae is few. Asteridae flowers are almost always gamopetalous.



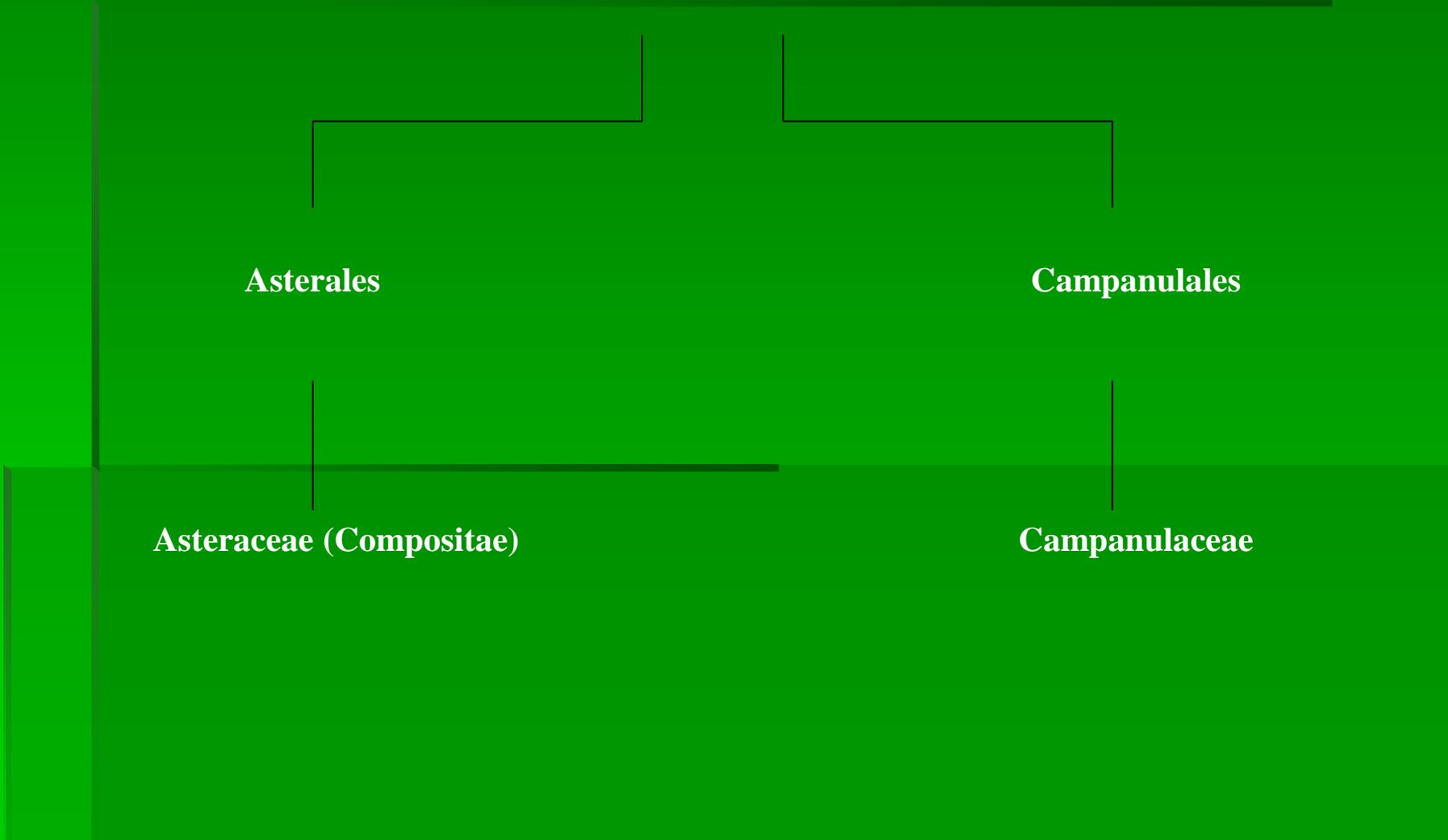
ASTERIDAE

Asterales

Campanulales

Asteraceae (Compositae)

Campanulaceae



Thank you for attention!

