

Systematic Botany. Lecture 22

Alexey Shipunov

Minot State University



Outline

Equisetum, Salix and Chamaesyce

Equisetum

Salix

Chamaesyce



Equisetum, Salix and Chamaesyce

Equisetum



Equisetopsida

- ▶ Small group of one genus, *Equisetum* with ≈ 30 species
- ▶ Leaves are reduced into scales, stems are segmented, photosynthetic. Have specific anatomy of stem (stele)—**artrostele** with specific central, **valecular** and **carinal** canals (similar to stele of some grasses)
- ▶ Sporangia associated with specialized leaves—sporangiophores. Spores have attached **elaters**. Gametophyte minute, usually dioecious but plants are homosporous
- ▶ One family, Equisetaceae, and one genus, *Equisetum*, with 6 species in North Dakota



Strobili and sporangiophores of *Equisetum arvense*



Equisetum giganteum



Equisetum, Salix and Chamaesyce

Salix



General features of Salicaceae

- ▶ ≈ 1010 species
- ▶ Distributed across all climatic zones, most genera are in tropics, most species in temperate regions
- ▶ Poplar (*Populus*) and willow (*Salix*) are important component of temperate riparian forests

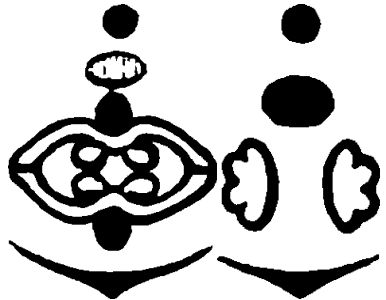
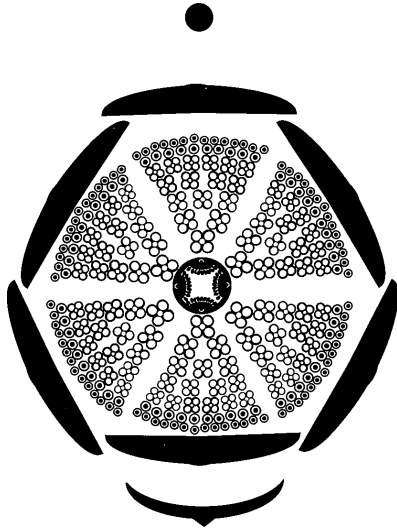


Morphology of Salicaceae

- ▶ Trees, usually with alternate simple leaves with stipules and salicoid teeth
- ▶ In many genera, flowers are more and more reduced—from flowers with numerous stamens and both sepals and petals to apetalous flowers with several stamens
- ▶ Flowers often have disk—flattened nectariferous structure
- ▶ Pistil of two carpels
- ▶ Fruit is a capsule
- ▶ Seeds often with hairs



Salicaceae: *Azara* and *Salix* (female, male)



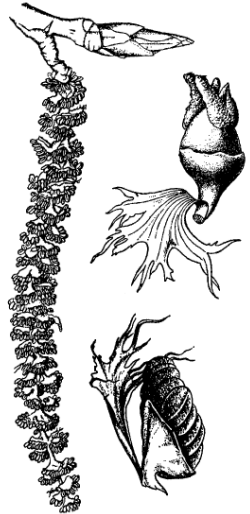
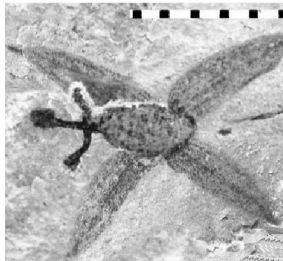
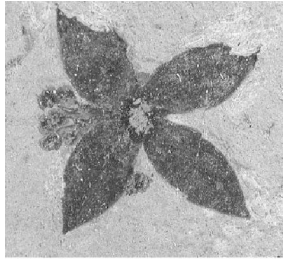
$$*K_{0-6}C_{0-8}A_{2-\infty}\underline{G_{(2-4)}}$$

Representatives of Salicaceae

- ▶ Willow (*Salix*), almost 300 species of trees and shrubs, important component of Northern flora
 - ▶ Subgenus *Salix*
 - ▶ *S. amygdaloides*
 - ▶ *S. alba**
 - ▶ *S. babylonica**
 - ▶ *S. fragilis**
 - ▶ *S. lucida*
 - ▶ *S. serissima*
 - ▶ Subgenus *Longifoliae*
 - ▶ *S. exigua*
 - ▶ Subgenus *Chamaetia*
 - ▶ *S. pedicellaris*
 - ▶ Subgenus *Vetrix*
 - ▶ *S. cordata*
 - ▶ *S. eriocephala*
 - ▶ *S. lutea*
 - ▶ *S. discolor*
 - ▶ *S. humilis*
 - ▶ *S. bebbiana*
 - ▶ *S. candida*
- ▶ Poplar, or cottonwood (*Populus*) has ≈ 40 species. Cultivated as a wood source. Aspen (*Populus tremuloides*) is a main component of North Dakota forests.



Salicaceae: salicoid teeth; fossil *Pseudosalix* and recent *Populus*



Salix hastata, female and male plants



Aspen, *Populus tremuloides*



Azara flowers



Equisetum, Salix and Chamaesyce Chamaesyce

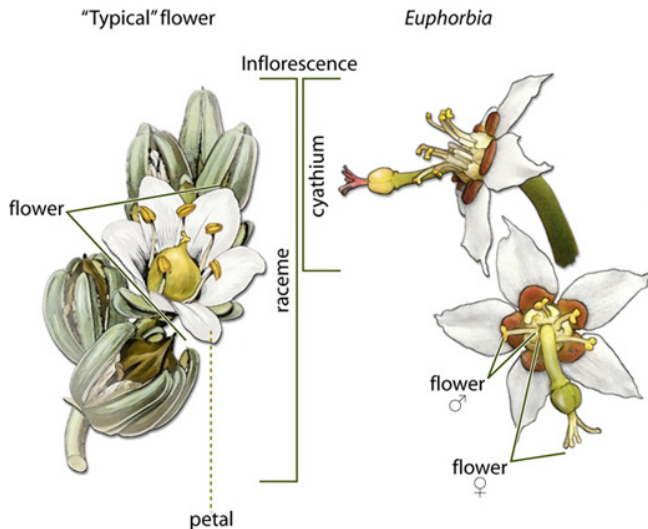


General features of *Chamaesyce*

- ▶ Sometimes, treated as *Euphorbia* from Euphorbiaceae
- ▶ Inflorescences are cyathia, small and flower-like



Typical flower vs. cyathium



For Further Reading



A. Shipunov.

Systematic Botany [Electronic resource].

2011—onwards.

Mode of access:

http://ashipunov.info/shipunov/school/biol_448



A. Shipunov.

Flora of North Dakota: Checklist

2012—onwards.

Mode of access: <http://ashipunov.info/shipunov/fnddb>

