

# Ethnobotany. Lecture 17

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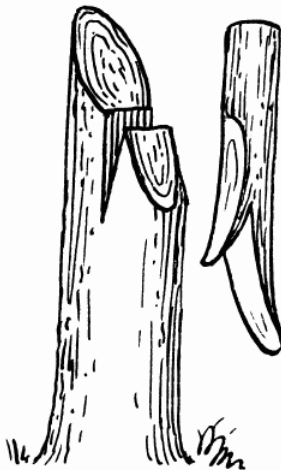
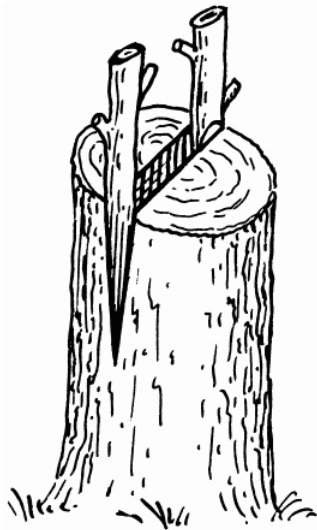


# Outline

- 1 Rosaceae fruits
  - Rosaceae with pome fruits



# Grafting



# Roses as food plants

- Roses (*Rosa* spp. including North Dakota state flower, *Rosa arkansana*) are edible plants.
- Hypanthium is rich of vitamins, especially vitamin C. Typically, accessibility of vitamins from fruits are higher than from synthetic products.



# Rosaceae fruits

## Rosaceae with pome fruits



# Pome fruits

- Result of fusion between hypanthium and pistils
- The edible part is a hypanthium wall



# *Pyrus malus*, apple

- Sometimes treated as separate genus *Malus*, in this case species has a name *Malus domestica*
- Eurasian origin, common forest plant in Europe
- Eastern Turkey is the center of species diversity



# *Malus*





# Apple features and history

- Old culture, cultivation started in pre-Roman times
- Brought to North America in 1625 (first apple tree near Boston)
- Massive mythological background
- Temperate culture; in tropics, leaves should be removed if flowering required on next year
- Biggest producers are China, U.S. and Iran



# Apple pollination



# *Pyrus communis*, pear

- Some branches transform to thorns
- Chinese origin, cultivation started there before 1,000 BC
- Went to Europe in ancient Greek times
- *Pyrus pyrifolia* is a close species—Asian pear



# Asian pear, *Pyrus pyrifolia*



# *Cydonia oblonga*, quince

- Caucasian origin, spread to the cultivation in Balkans
- Rich of microelements
- Used mostly for jams and jellies



# *Cydonia*



# Quince flowers



# Quince fruits





# *Chaenomeles japonica* and hybrids, Japanese Quince

- East Asian deciduous spiny shrubs, usually small
- Red flowers and relatively big, hard fruits
- Fruits are edible after frost (“bletted”)
- Have more vitamin C than lemons (up to 150 mg/100 g)



# Japanese Quince, *Chaenomeles*



# *Mespilus germanica*, medlar

- Caucasian hardy culture
- Contains significant amounts of pectins, used for jams and jellies



# Medlar fruits



# *Eriobotrya japonica*, loquat

- Evergreen tree from central China
- Flowering in November, has fruits in April and May
- Cultivated also as ornamental plant



# Loquat flowers



# Loquat fruits



# *Aronia* spp., chokeberries

- North American genus with 2–3 species, grows well in North Dakota
- Fruits are rich of antioxidants
- Used also as ornamental
- In Russia, cultivated hybrid (origin is still unclear, but probably with European common whitebeam, *Sorbus aria*) *Aronia*  $\times$  *mitchurinii* is one of the northernmost fruit plants





# *Aronia* × *mitchurinii*



## *Amelanchier* spp., serviceberry, juneberry

- North American genus with  $\approx 20$  species, some are cultivating
- Fruits are rich of vitamins (A, C and even E) and minerals
- Grows well on poor soils and dry conditions, recommended for prairie cultivation



# Serviceberry



# *Sorbus* spp., mountain ash

- Large (up to 200 species) genus occurred in North America and Eurasia
- Most species have edible fruits
- European rowan (*Sorbus aucuparia*), and common whitebeam (*Sorbus aria*) are main cultivated species (also as ornamentals)
- Fruits are mostly used for wines, jams and jellies; bitter taste is normally gone after first frosts



# European rowan, *Sorbus aucuparia*



# Common whitebeam, *Sorbus aria*



# *Crataegus* spp., hawthorn

- More than 200 species of shrubs and small trees from Eurasia and North America
- Many species are cultivated for their fruits and also as ornamentals, for aroma compounds and/or as tea surrogate
- Used in multiple traditional medicine practices, one proven use is treating chronic heart diseases



# Hawthorn fruits





# Summary

- Rosaceae is one of the most important temperate fruit families
- Most of Rosaceae cultivated fruits are result of long selection involved multiple hybridization
- Most of Rosaceae cultivated fruits are propagated by grafting on appropriate rootstocks



# For Further Reading



A. Shipunov.

*Ethnobotany* [Electronic resource].

2011—onwards.

Mode of access:

[http://ashipunov.info/shipunov/school/biol\\_310](http://ashipunov.info/shipunov/school/biol_310)



P. M. Zhukovskij.

*Cultivated plants and their wild relatives* [Electronic resource].

Commonwealth Agricultural Bureaux, 1962.

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[http://ashipunov.info/shipunov/school/biol\\_310/zhukovskij1962\\_cultivated\\_plants.pdf](http://ashipunov.info/shipunov/school/biol_310/zhukovskij1962_cultivated_plants.pdf)

**Pages 28–74.**

