

Ethnobotany. Lecture 17

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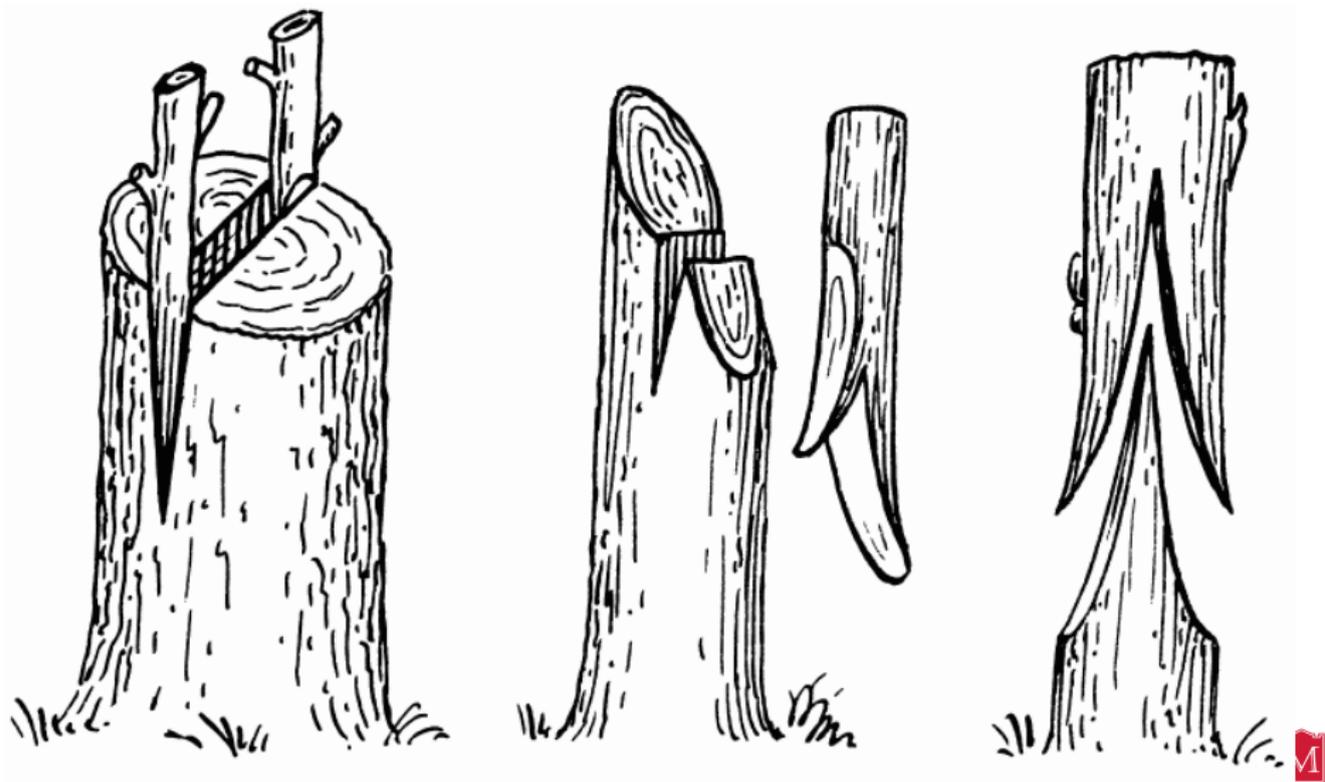


Outline

- 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*

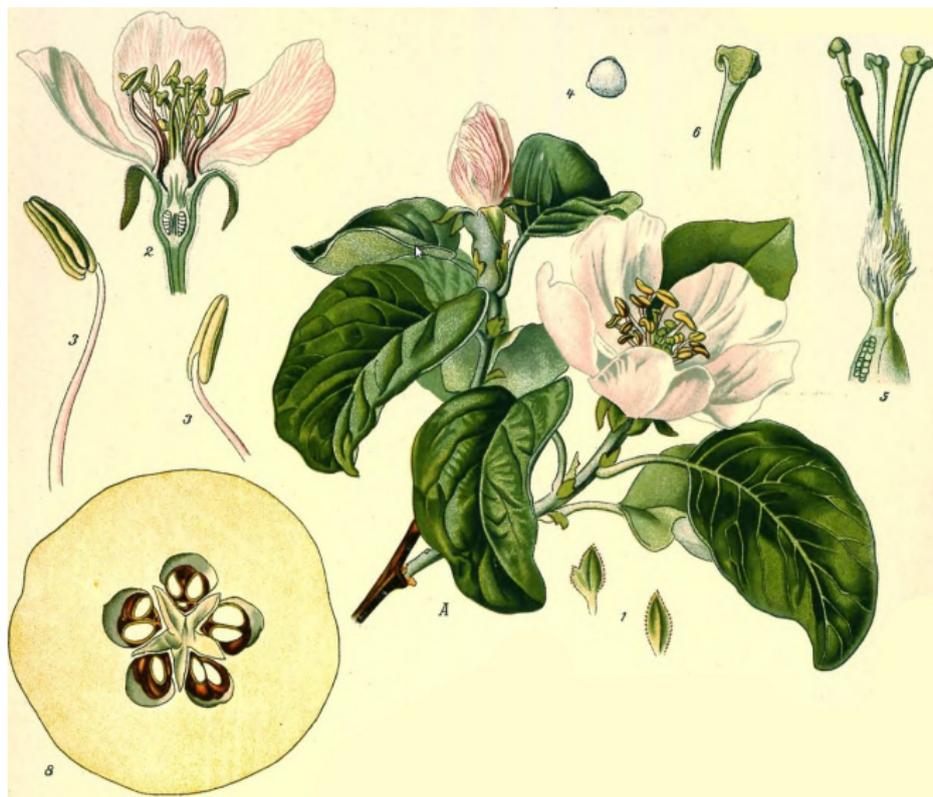


Cydonia oblonga, quince

- 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* × *mitchurinii* is one of the northernmost fruit plants



Aronia × *mitchurinii*



Amelanchier spp., serviceberry, juneberry

- North American genus with ≈ 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



P. M. Zhukovskij.

Cultivated plants and their wild relatives [Electronic resource].

Commonwealth Agricultural Bureaux, 1962.

Mode of access:

[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.

