

Ethnobotany. Lecture 17

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Outline

- 1 Rosaceae fruits
 - Rosaceae with stone fruits
 - Rosaceae with pome fruits

Rosaceae with stone fruits, *Prunus*

- Multiple (≈ 430) species often separated in different genera on the base of fruit morphology
- Distributed almost equally among Eurasia and North America
- Flower before appearance of leaves, inflorescences are umbels

Prunus avium, cherry

- Mediterranean tree, cultivated from Roman times
- Used also as timber and ornamental plant
- All parts except “berries” (drupes) contain cyanogenic glycosides

Cherry



Other cherries

- Black cherry (*Prunus serotina*) and choke cherry (*Prunus virginiana*) are two frequently cultivated North American species
- Choke cherry is a state fruit of North Dakota
- It is also a hosts of tent caterpillar, *Malacosoma* sp.

Choke cherry



“Nest” of tent caterpillars



Prunus armeniaca, apricot

- Old culture of Central Asian origin, later spread into China and Europe
- Dry fruits were traditionally used as sugar source (along with melon)
- Fruits contain oil of cooking quality
- Biggest producer is Turkey

Drying apricots in Cappadocia, Turkey



Prunus × *domestica*, plum

- Hybrid hexaploid ($2n = 48$) species, originated from cherry plum *Prunus divaricata* ($2n = 16$) and blackthorn *P. spinosa* ($2n = 32$)
- Probably of Caucasian origin, contemporary cultivars are even more complicated hybrids
- Well-known laxative fruit
- Chinese “plum” is a separate species, *Prunus mume*—kind of intermediate between apricot and plum

Plums



Blackthorn



Cherry plum



Chinese plum



Prunus persica, peach

- Tree of Chinese origin, cultivated from 1,100 BC and spread to Europe with Alexander the Great army
- Multiple cultivars including nectarines (result of bud sport mutation) and Chinese flat peaches
- Propagated mostly by grafting on adequate rootstocks (many other *Prunus* species)
- China is still a biggest producer

Chinese flat peach



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

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

Quince flowers



Quince fruits



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 (probably with European mountain ash, *Sorbus aria*) species *Aronia* \times *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



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.

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Pages 28–74.