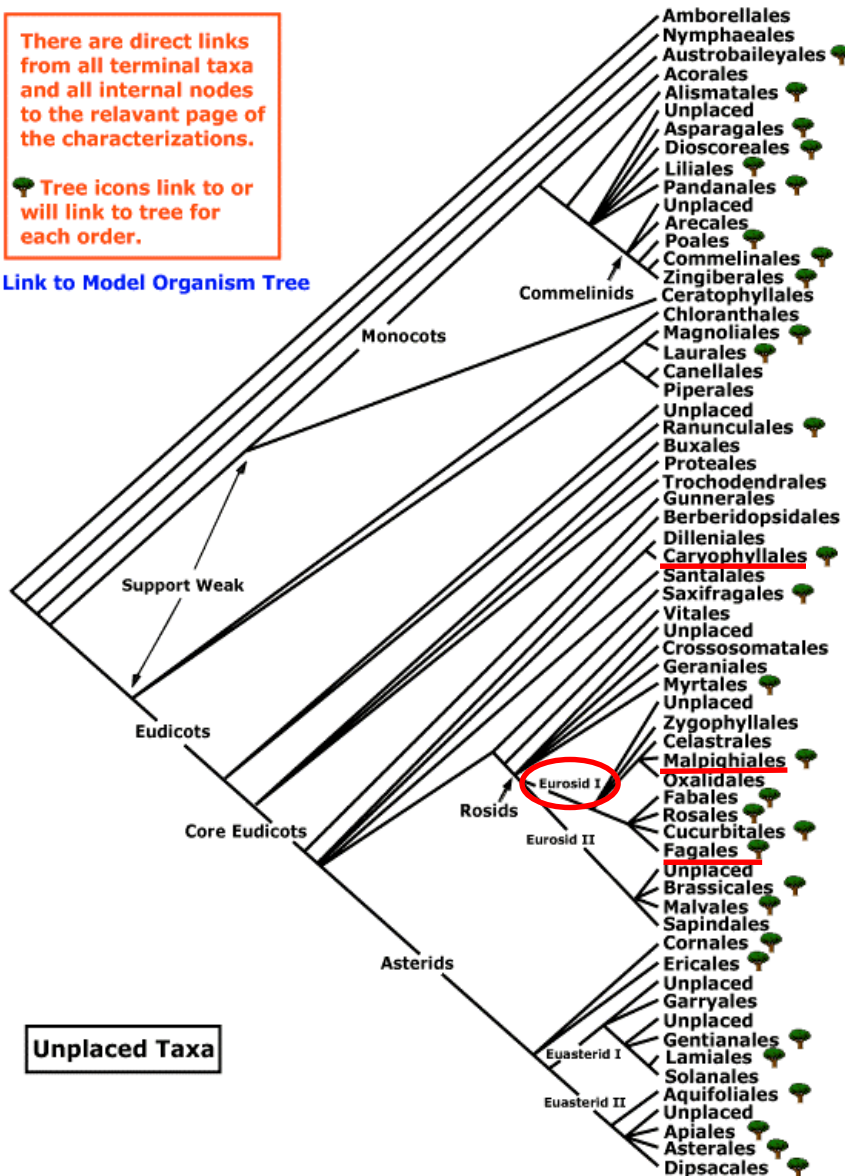


Caryophyllales + Eurosid I

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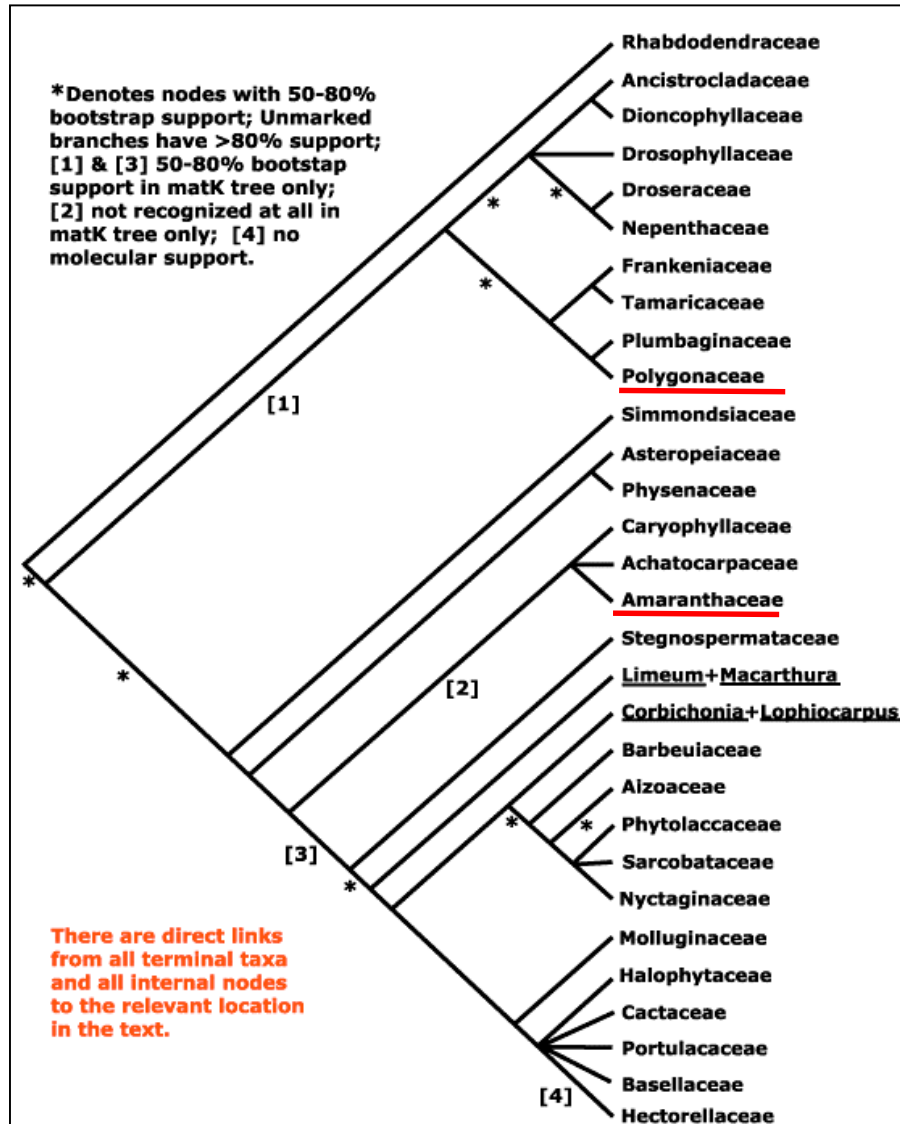


Caryophyllales
 - *Polygonaceae*
 - *Amaranthaceae (Chenopodiaceae)*

Malpighiales
 - *Salicaceae*

Fagales
 - *Fagaceae*
 - *Betulaceae (Betuloideae + Coryloideae)*

Caryophyllales



Caryophyllales, Polygonaceae

ř / (♂,♀) * P3+3 / 5 A6-9 G(2-3)

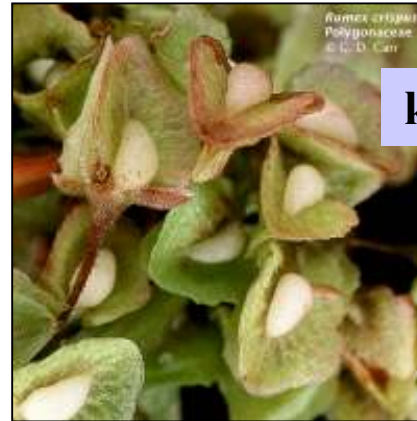
- časté taniny, kys. šťavelová
- botka, krovky
- 43 rodů / 1 100 druhů



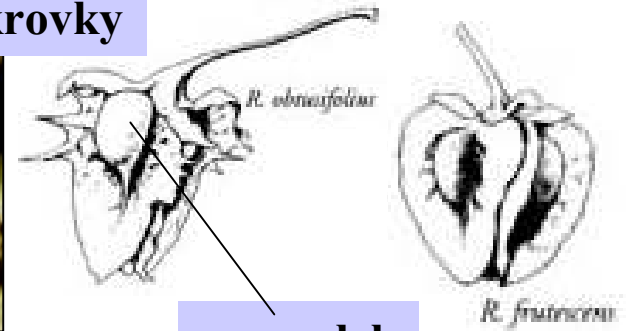
Rumex.
Diagram.



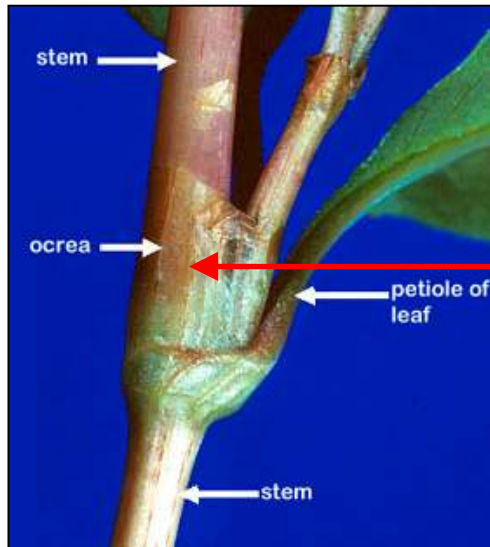
Fagopyrum.
Diagram.



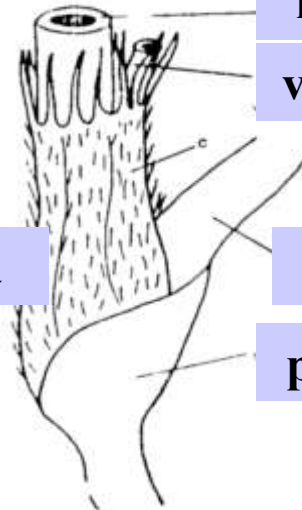
krovky



mozoulek



botka



hlavní stonek

vedlejší stonek

list

pochva

Caryophyllales, Polygonaceae



*Acetosa
pratensis*



Rumex aquaticus



Fallopia convolvulus



Polygonum amphibium



Polygonum aviculare

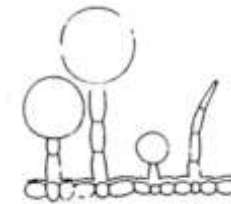


Reynoutria japonica

Caryophyllales, Amaranthaceae

ř / ♂, ♀ * K3-5 C0 A5 G(2-3)

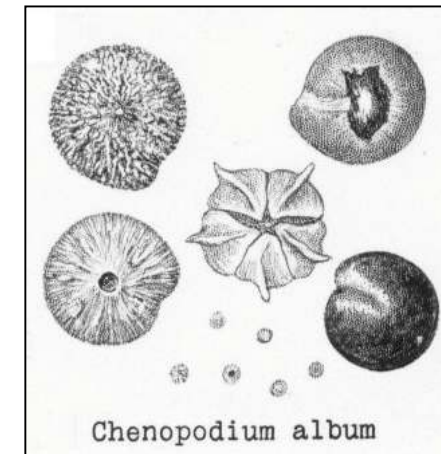
- někdy C4 metabolismus
- pyl polyprátní (>7)
- 170 rodů / 2 350 druhů



Amaranthus,
Diagram ♂.



Amaranthus spinosus
Amaranthaceae
Gardl D. Cav



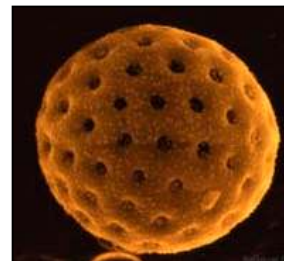
Chenopodium album



Amaranthus,
Diagram ♀.



Chenopodium album



Caryophyllales, Amaranthaceae



Chenopodium album



Atriplex sagittata



Amaranthus retroflexus

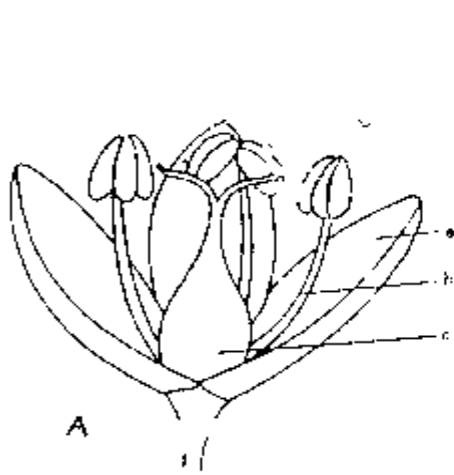


Salicornia europaea

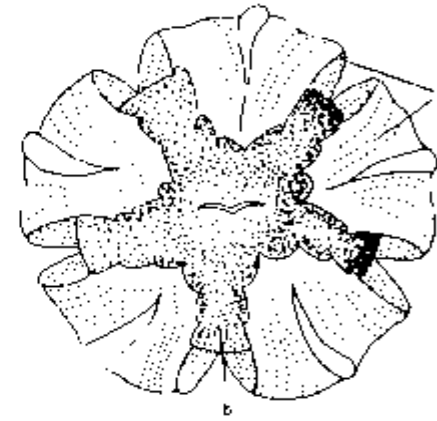
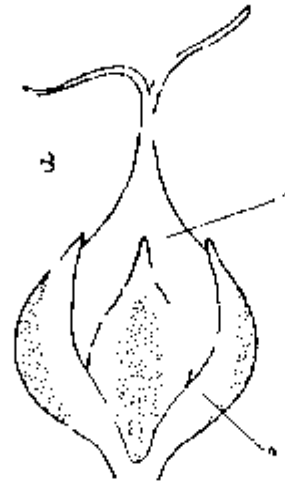


Haloxylon ammadendron

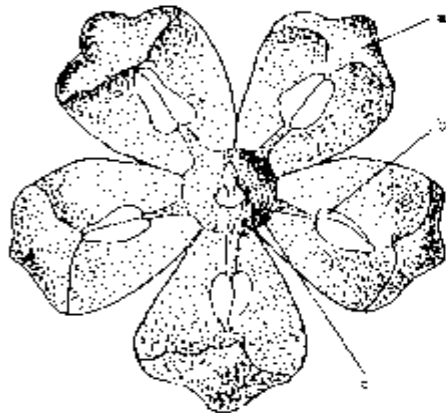
Caryophyllales, Amaranthaceae



Chenopodium rubrum
 A - oboupohlavný květ; B - samičí květ
 a - P; b - tyčinka; c - pestík

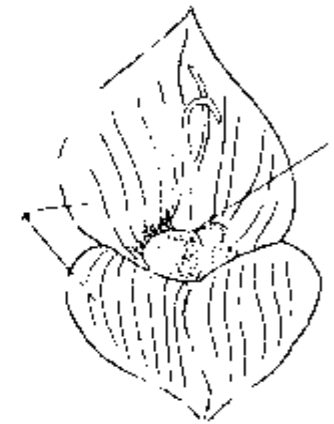


Chenopodium murale
 nažka ve vytrvalém
 okvěti



Atriplex sagittata
 samec květ
 a - P; b - tyčinka;
 c - zakrňelý pestík

samičí květ
 a - listenka
 b - pestík

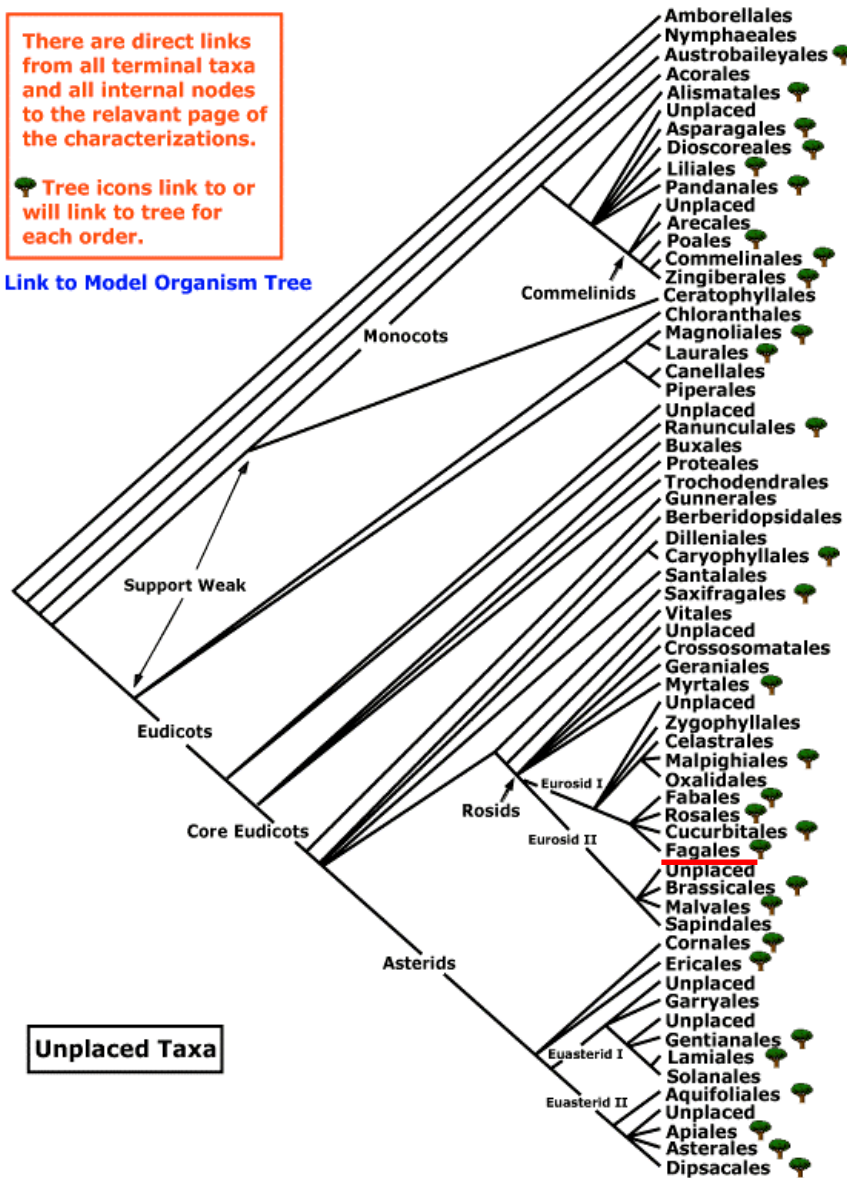


Fagales

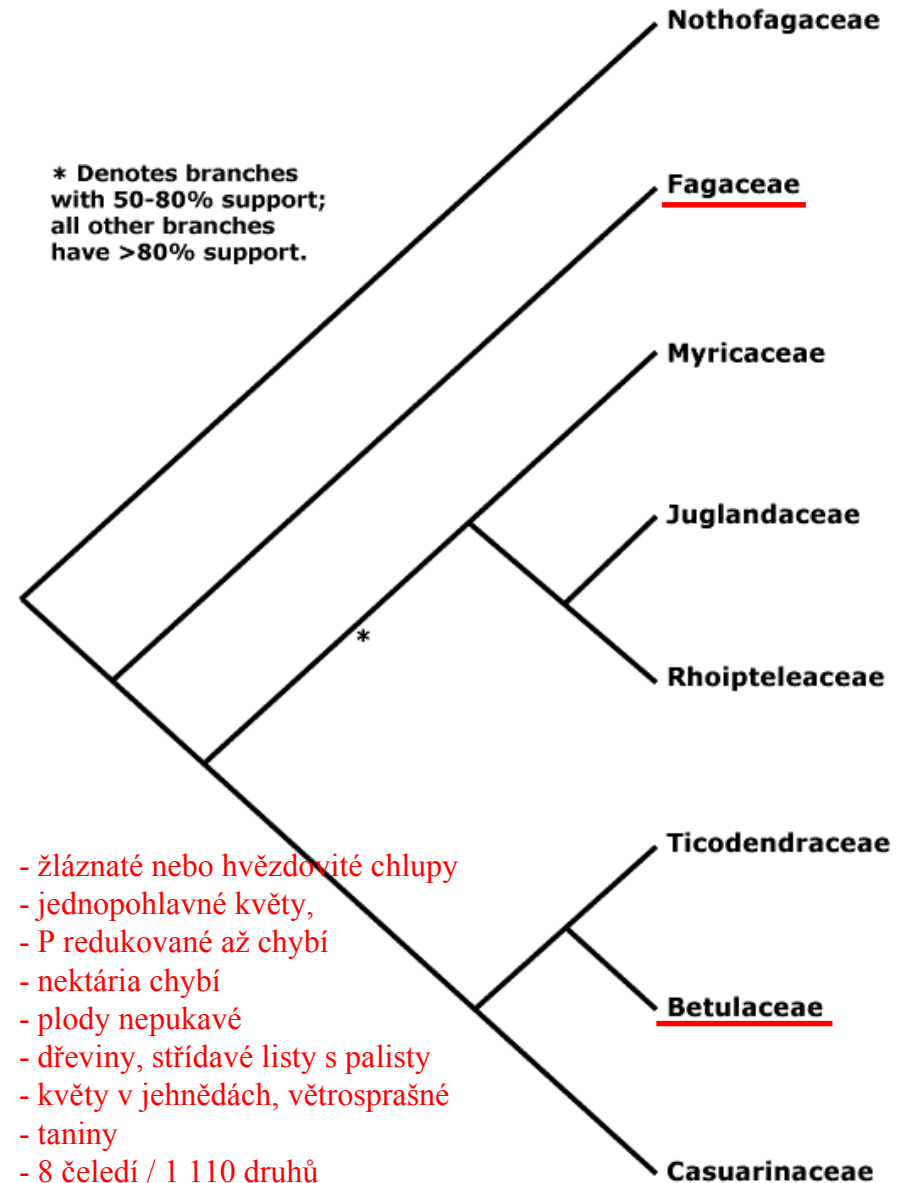
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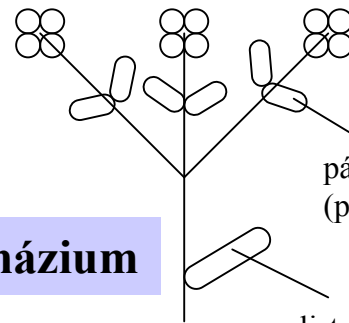


- žláznaté nebo hvězdovité chlupy
- jednopohlavné květy,
- P redukované až chybí
- nektária chybí
- plody nepukavé
- dřeviny, střídavé listy s palisty
- květy v jehnědách, větrosprašné
- taniny
- 8 čeledí / 1 110 druhů

Fagales, Betulaceae

- listy většinou 2x pilovité
- listeny, listence
- redukce květních obalů – nerozlišené P
- jednopohlavná jehnědovitá květenství
- 6 druhů / 160 rodů

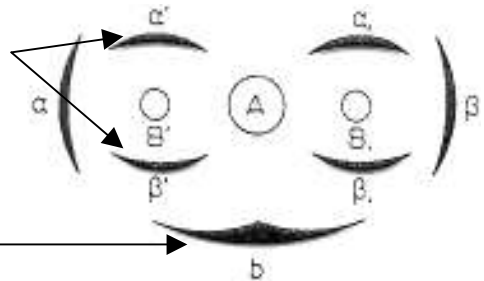
dicházium



párové listence (prophylla)

listen (bracteus)

♂ * P0-6 A1-4
♀ * P0-6 $\overline{G(2)}$



Betuloideae (Alnus, Betula)

- zploštělé plody, listeny a listence srostlé
- samičí květy nahé (P0)
- samčí květy P2+2 A2+2



Coryloideae (Carpinus, Coryllus)

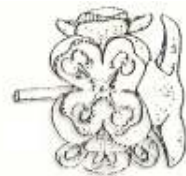
- samčí květy nahé (P0), v jehnědách
- listence samičích květů srostlé, zvětřelé



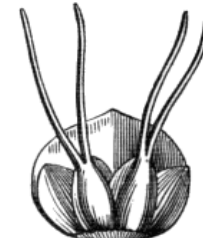
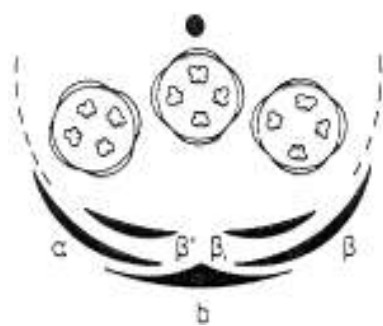
Fagales, Betulaceae, Betuloideae



Alnus.
♂ flower
(mag.).



♂ * P2+2 A2+2



Alnus.
Scale and squamulae
bearing 2 ♀ flowers,
inner face.

Alnus

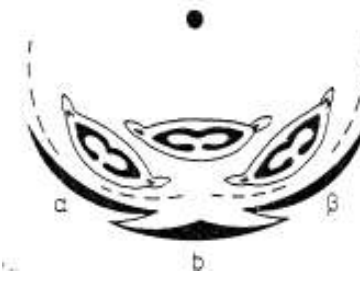
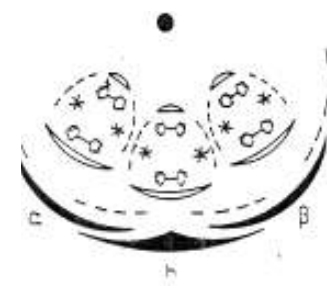
♀ * P0 G(2)
- prostřední květ
vymizel



♂ * P2 A2
- zachovány pouze listence
prostředního květu
- tyčinky – rozštěpené nitky

Betula

♀ * P0 G(2)
- listeny a listence srůstají



Birch.
Scale bearing 3 ♂ flowers
(mag.).

Fagales, *Betulaceae*, *Betuloideae*



Alnus glutinosa



Betula pendula



Alnus - Frankia



Alnus viridis

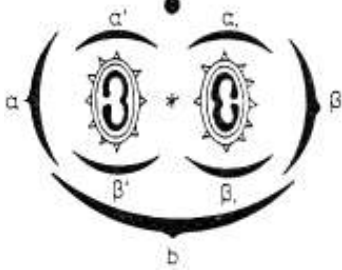


Betula nana



Fagales, Betulaceae, Coryloideae

♀ * P0 G(2)

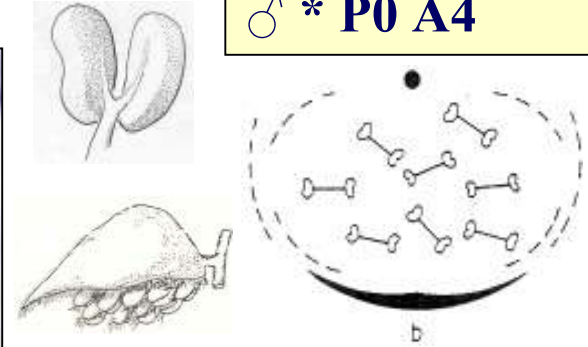


- květenství – 1 květ
- květ – 3 listence
- listence kolem plodu

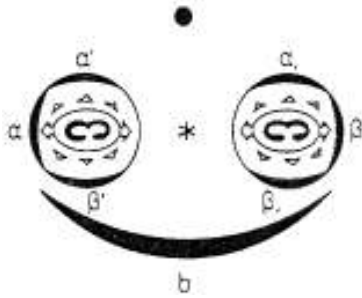
Carpinus



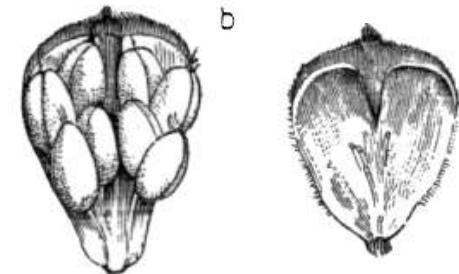
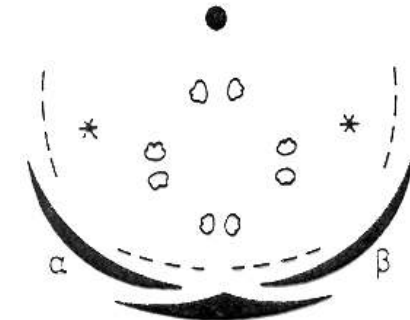
♂ * P0 A4



- květenství – 1 květ
- listen (listence u *Corylus*)
- rozštěpené tyčinky



Corylus



Fagales, Betulaceae, Coryloideae



Carpinus betulus



Corylus avellana



Corylus colurna



Fagales, Fagaceae

- kupula – stonkový původ
- 9 rodů / 900 druhů

♂ * P 5-6 A4-∞
♀ * P 3+3 G(3)



Oak.
♂ flower (mag.).



Oak.
♀ flower (mag.).



Oak. (*Quercus Robur.*)
♂ and ♀ branches, with the gland.

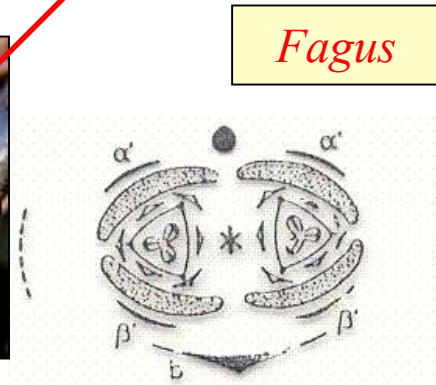
Quercus



Quercus sp.
Fagaceae
Gerald D. Carr

kupula

Fagus



Quercus Douglasii
Fagaceae
Gerald D. Carr

Fagales, Fagaceae



Fagus sylvatica



Quercus petraea



Quercus rubra



Quercus robur



Castanea sativa

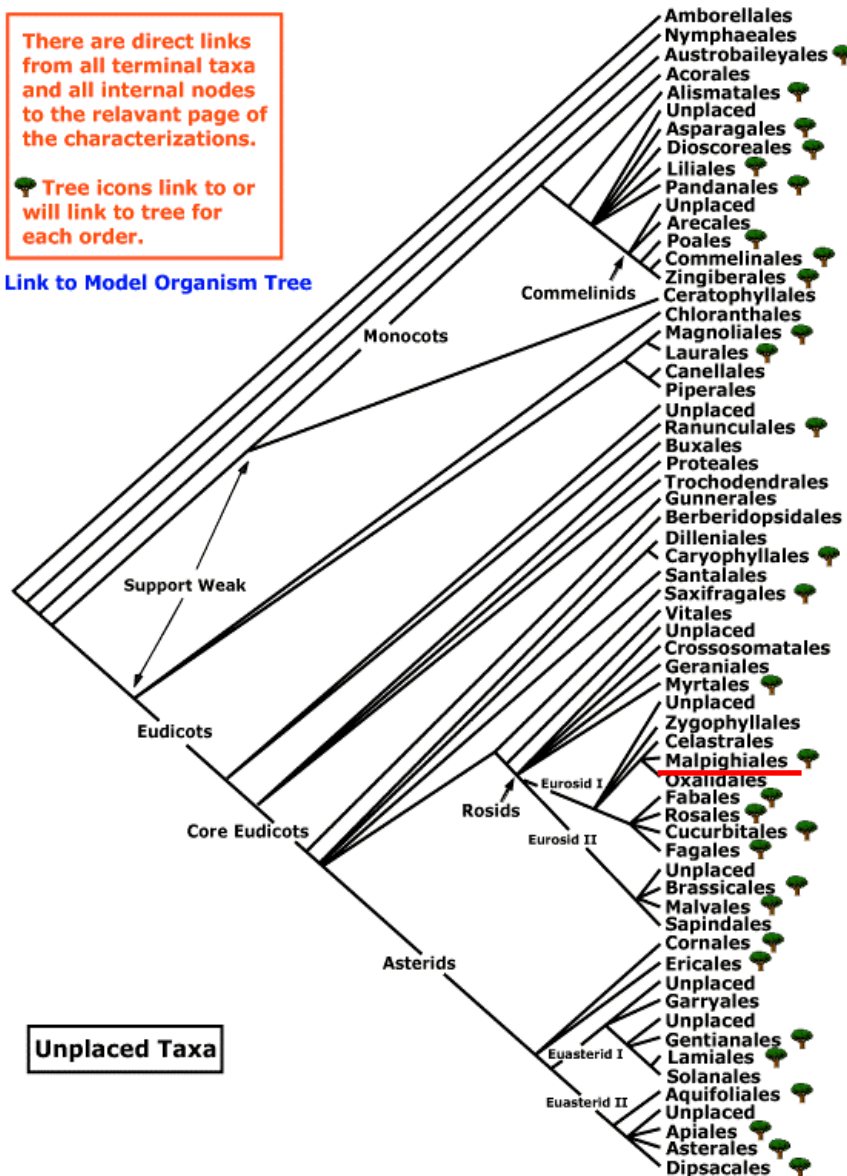
- oboupohlavná květenství
- P méně redukované

Malpighiales

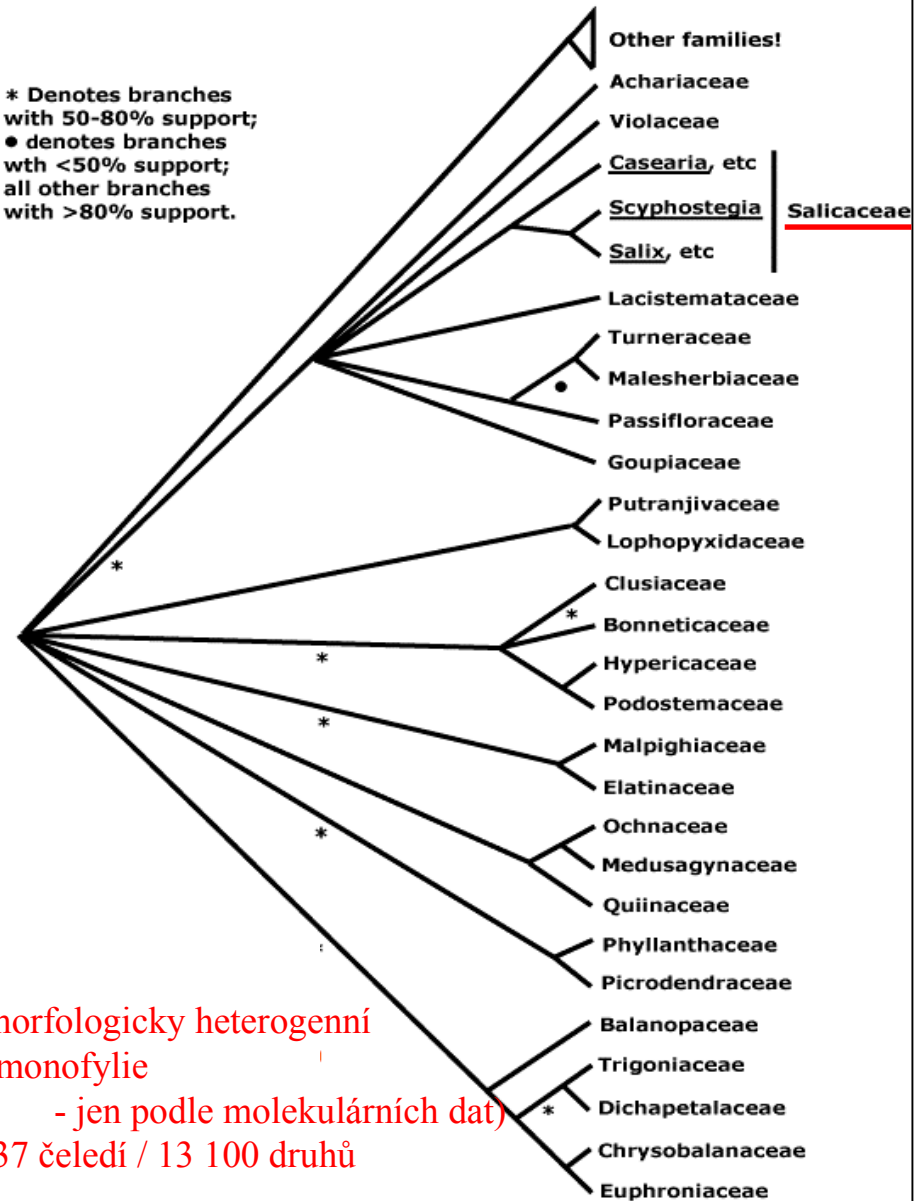
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 ● denotes branches with <50% support;
 all other branches with >80% support.



-morfoložicky heterogenní
 -(monofylie
 - jen podle molekulárních dat)
 - 37 ředí / 13 100 druhů

Malpighiales, Salicaceae

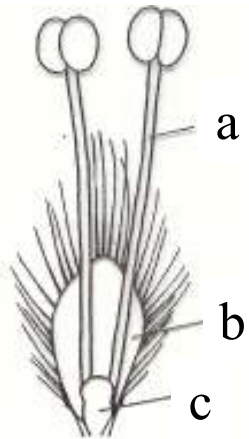
Salix

- pupeny s jednou šupinou
- nektária
- P chybí

- fenolické sloučeniny (salicin, populin), často taniny
- listy se salikoidními zuby (žilky na vrcholu rozšířené, s doprovodnými žlázkami), palisty
- 3 rody / 390 druhů
- kdysi za primitivní (*Amentiferae*), dnes za odvozené

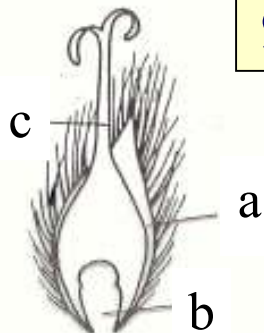
Populus

- pupeny s více šupinami
- nektária chybí
- zbytky P



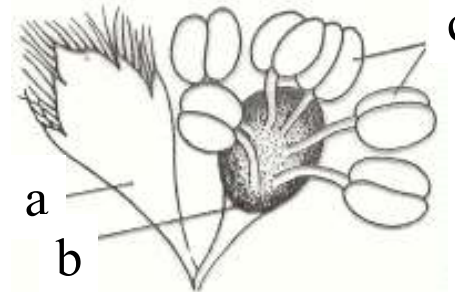
Salix viminalis

samčí květ
a - tyčinka
b - listen
c - žláзка



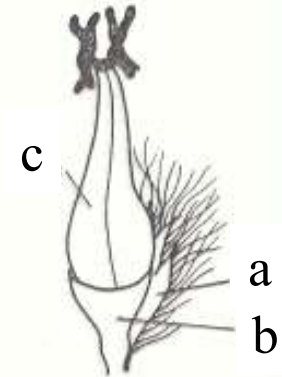
samičí květ
a - listen
b - nektariová žláзка
c - pestík

♂ * P0 A2-∞
♀ * P0 G(2-4)



Populus alba

samčí květ
a - listen
b - pohárkovité okvěti
c - tyčinky



Populus tremula

samičí květ
a - listen
b - zbytek okvěti
c - pestík



Malpighiales, Salicaceae



Salix babylonica



Salix purpurea



Salix reticulata



Salix capraea

kys. salicylová



Populus tremula



Populus nigra