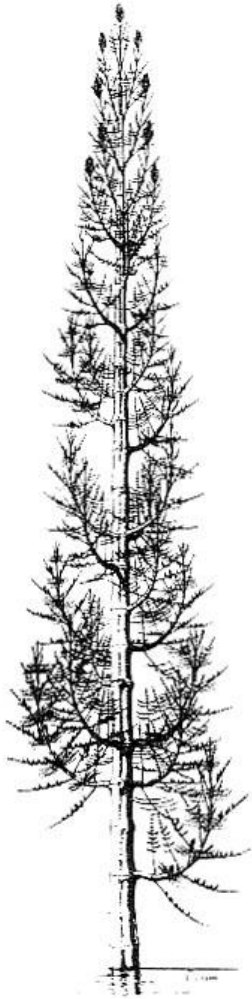
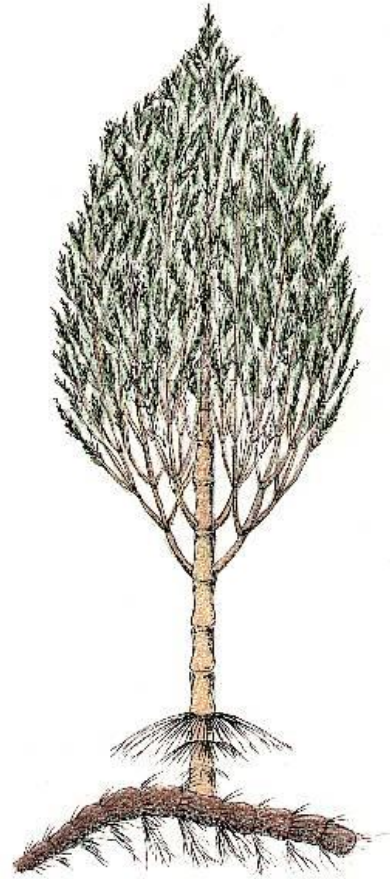


Equisetidae

(Div. Equisetophyta)



Pseudobornia ursina



Calamites sp.



Equisetum arvense

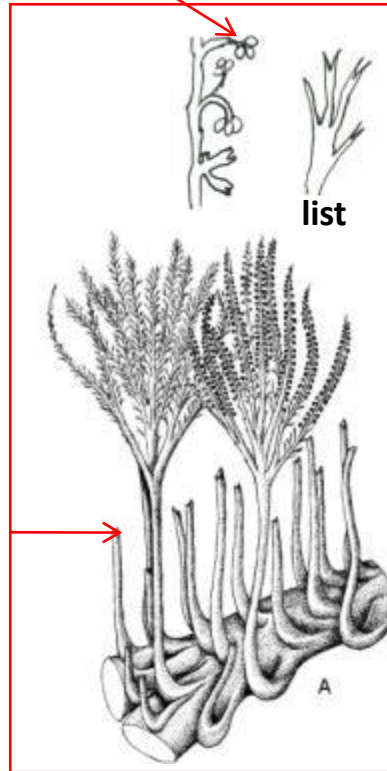
Podjela na redove

- Hyeniales (†)
- Sphenophyllales (†)
- Calamitales (†)
- Equisetales

o. Hyeniales

fam. Hyeniaceae

Tri sporangije na
dihotomo granatom
sporangioforu



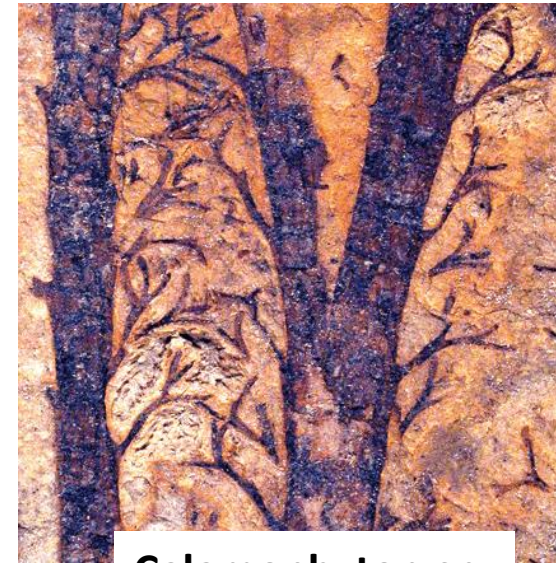
Člankovitost
stabla nije
izražena

Hyenia sp.

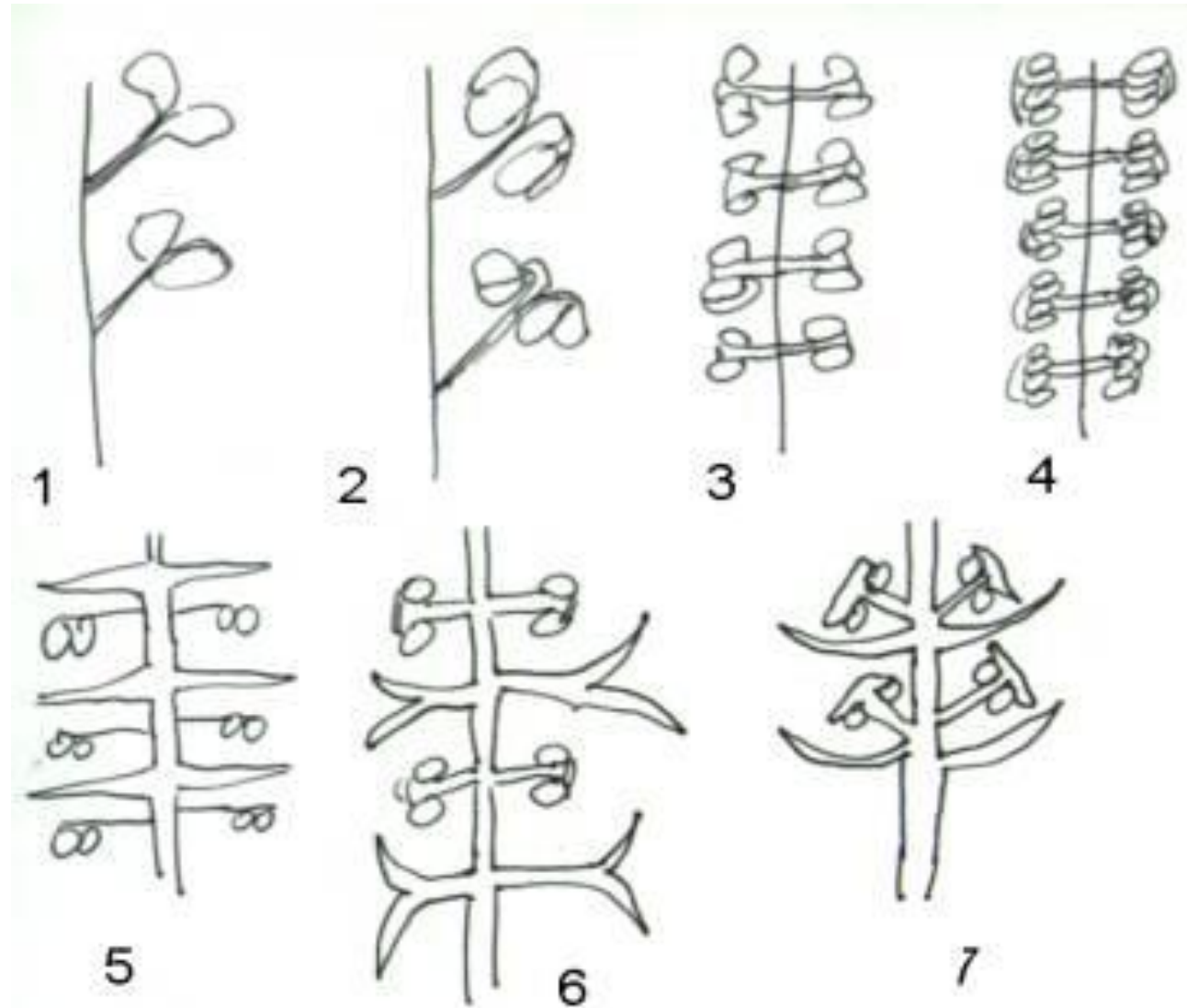


Sporangije
pojedinačne

Calamophyton sp.



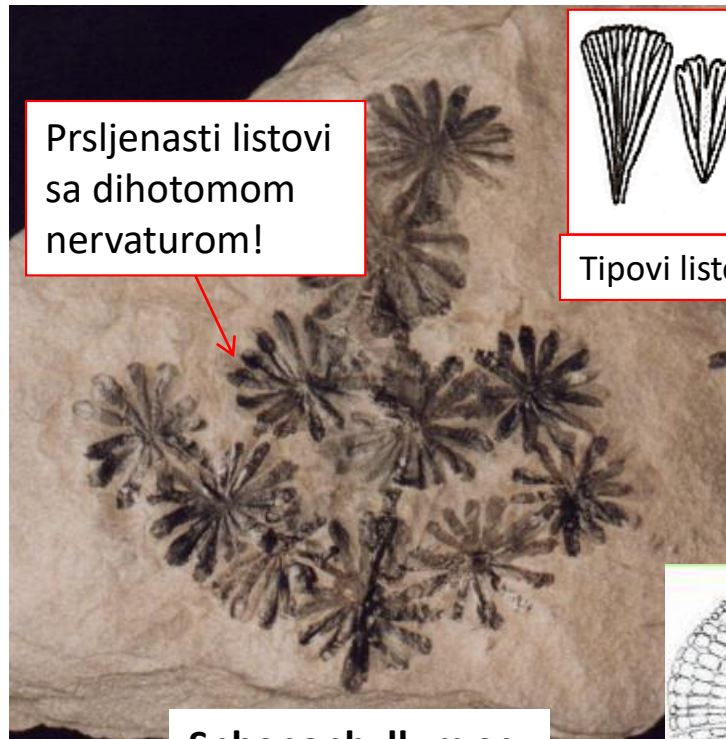
Calamophyton sp.
fosilni nalaz



1 – Calamophyton 2 – Hyenia 3- Archaeocalamites 4- Equisetum
5 – Lingularia 6 – Calamostachys 7 – Paleostachys

o. Sphenophyllales

fam. Sphenophyllaceae



Prsljenasti listovi
sa dihotomom
nervaturom!

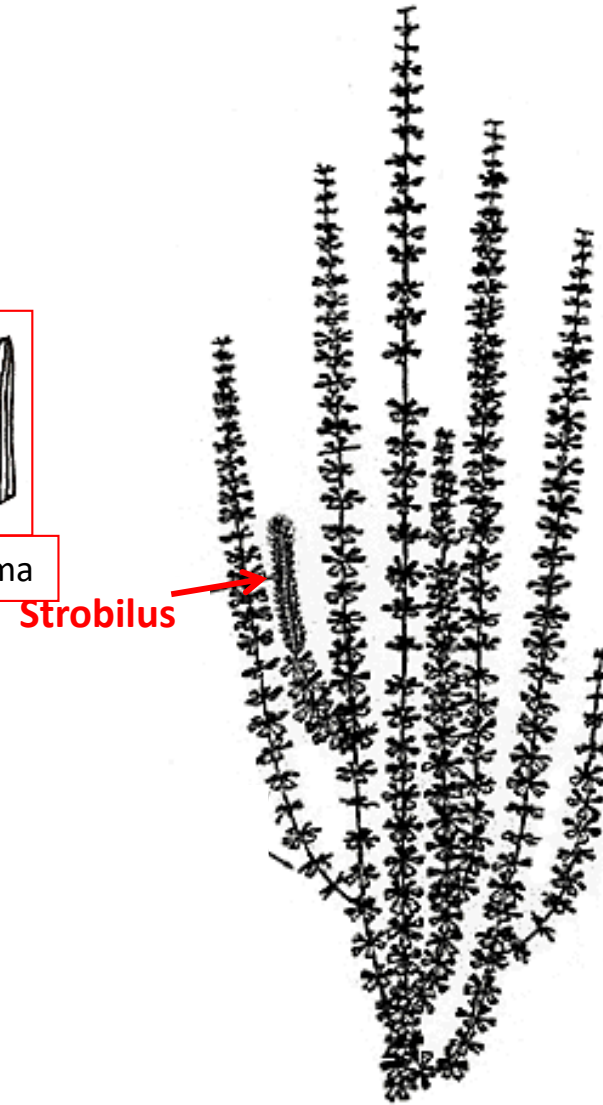
Sphenophyllum sp.
fossilni ostaci



Tipovi listova kod Sphenophylluma



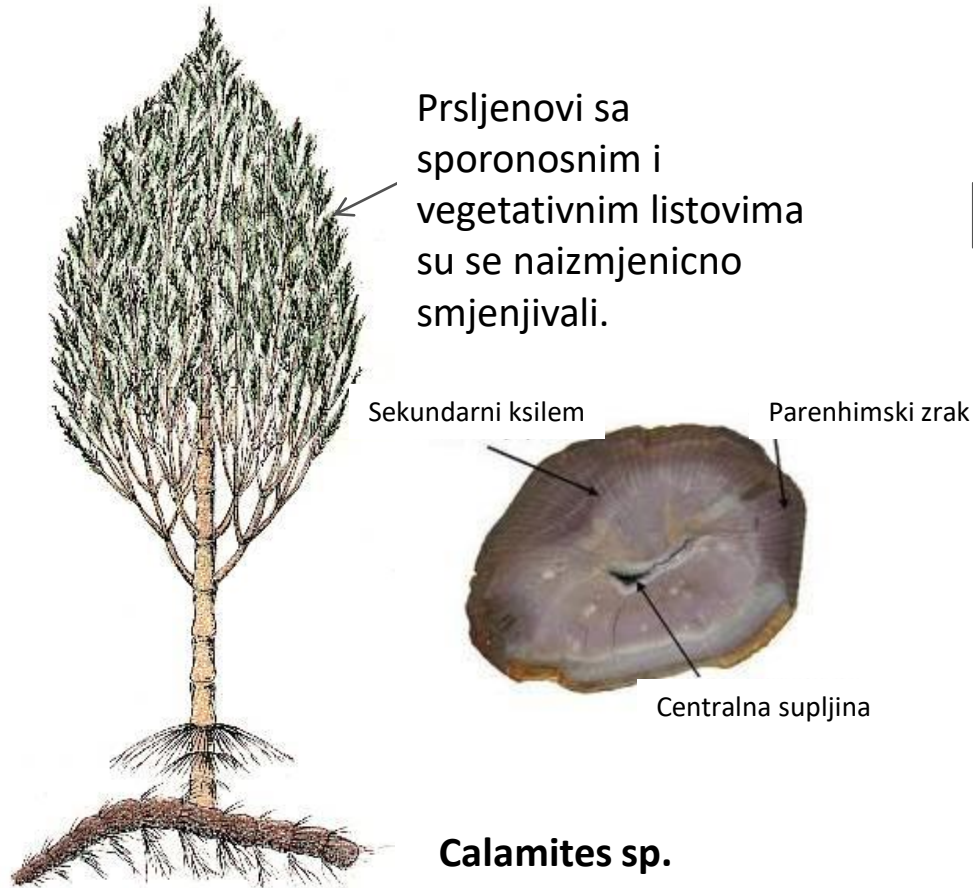
Aktinostela
(triarhna)



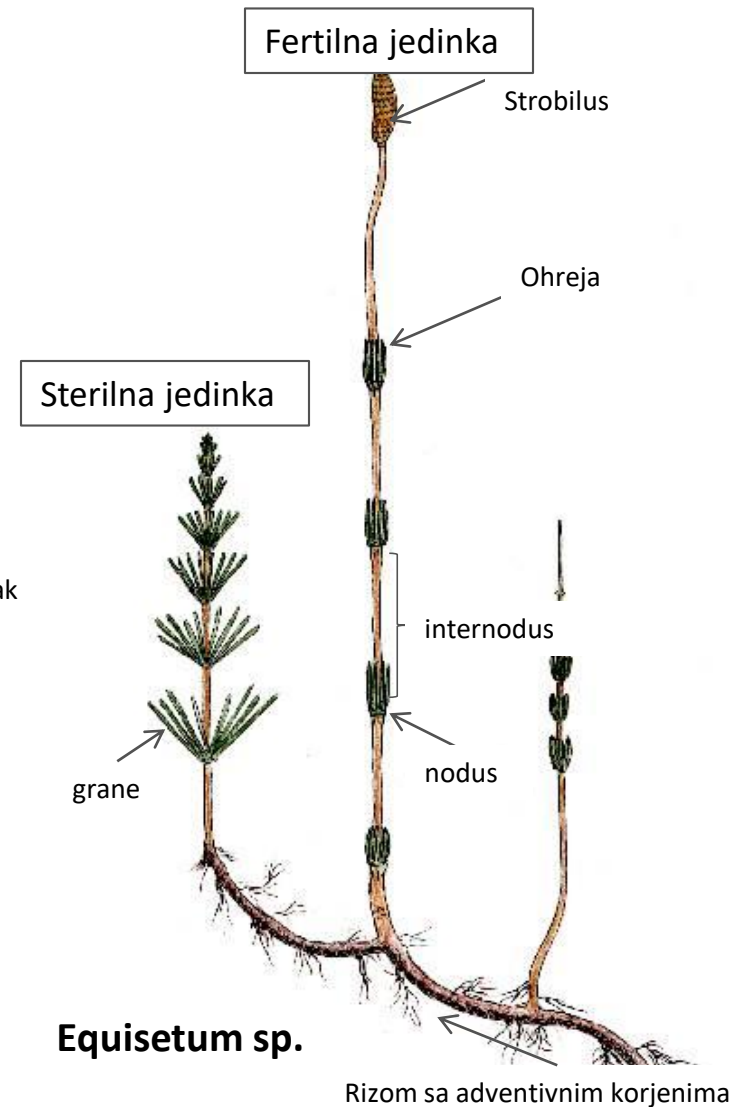
Strobilus

Sphenophyllum sp.
rekonstrukcija

o. Calamitales
fam. Calamitaceae

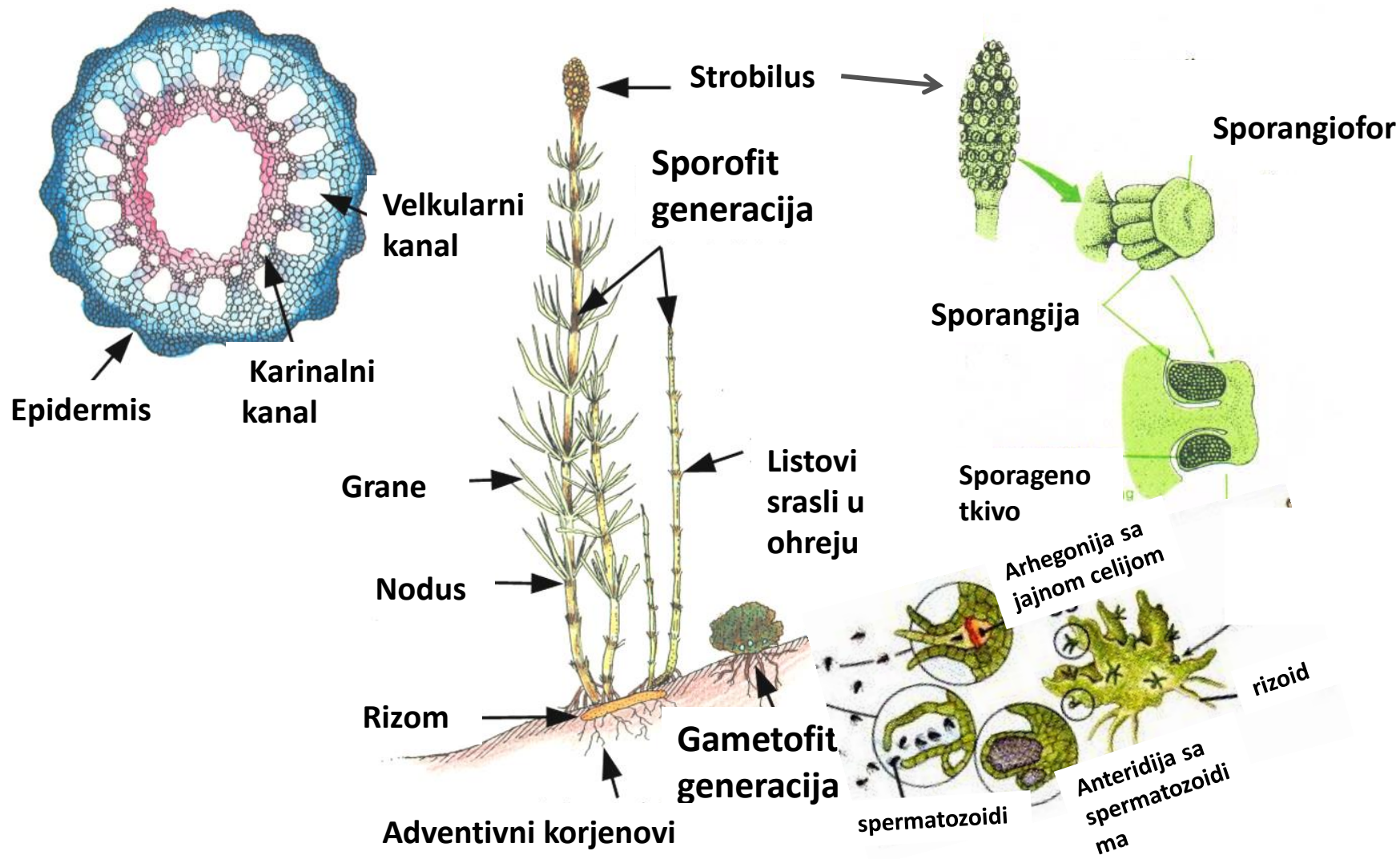


o. Equisetales
fam. Equisetaceae

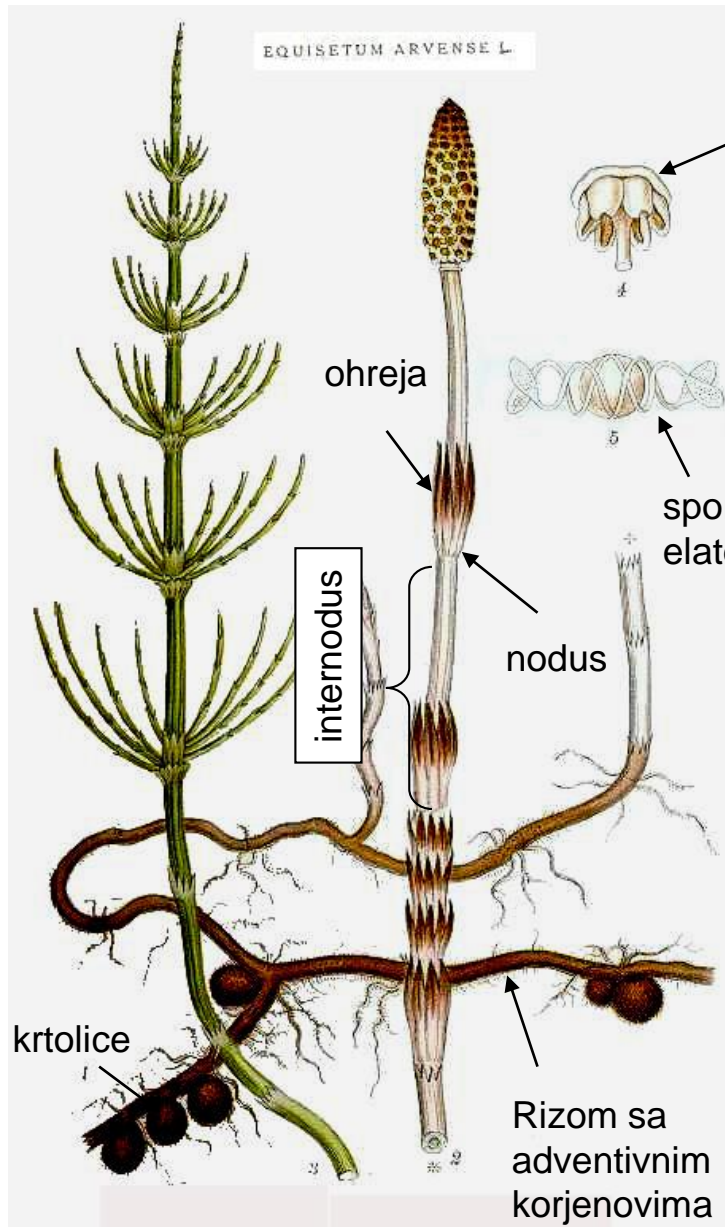


Presjek kroz
stablo

Equisetum - ciklus razvica



Morfološke odlike vrste *Equisetum arvense*



sporangiofor

Člankovitost građe

Odsustvo trajnog primarnog korjena

Redukovani listovi

Ohreje

Elatere

Izosporija

spora sa elaterama

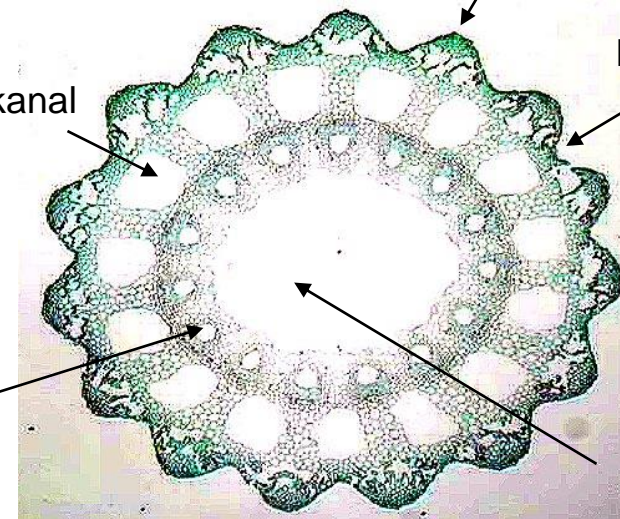
rebra

brazde

valekularni kanal

karinalni kanal

centralna šupljina



Taksonomski markeri

- Dimorfizam fertilne i sterilne jedinke
- Broj zubaca u ohreji
- Broj rebara ili brazda na stablu i vaskularnih šupljina
- Oblik vrha klasića

Izražen dimorfizam fertilne i sterilne jedinke

Equisetum arvense



6-12 zubaca u ohreji

Equisetum telmateia



20-30 zubaca u ohreji

Equisetum sylvaticum



Grane pršljenasto granate

Equisetum pratense



Grane jednostavne



Dimorfizam fertilne i sterilne jedinke nije izražen

STROBILUSI TUPI



Equisetum palustre



Zubići bez brazde i sa širokim obrubom

Equisetum fluviatile

STROBILUSI ŠILJATI



Equisetum hiemale



Equisetum variegatum