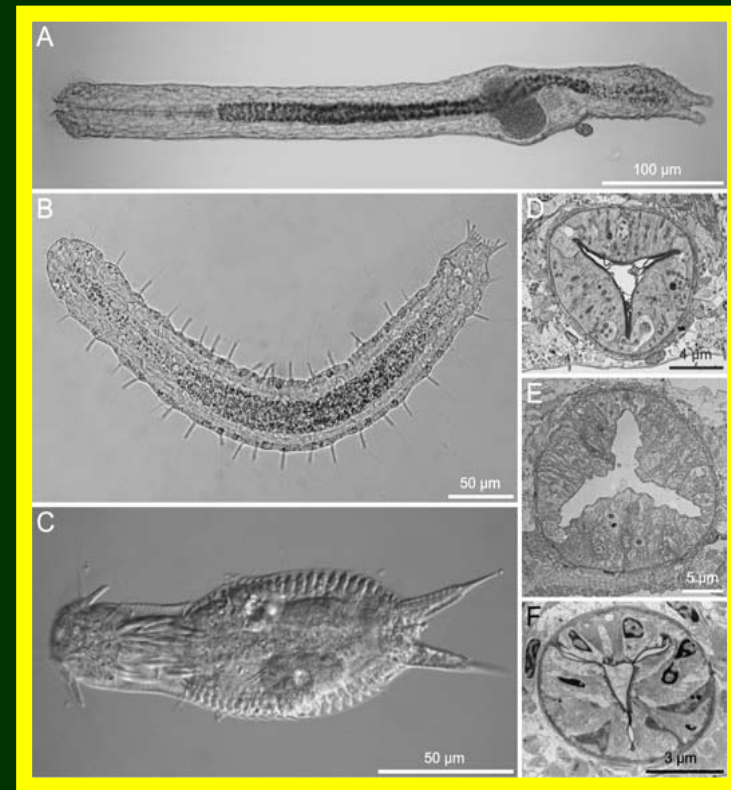
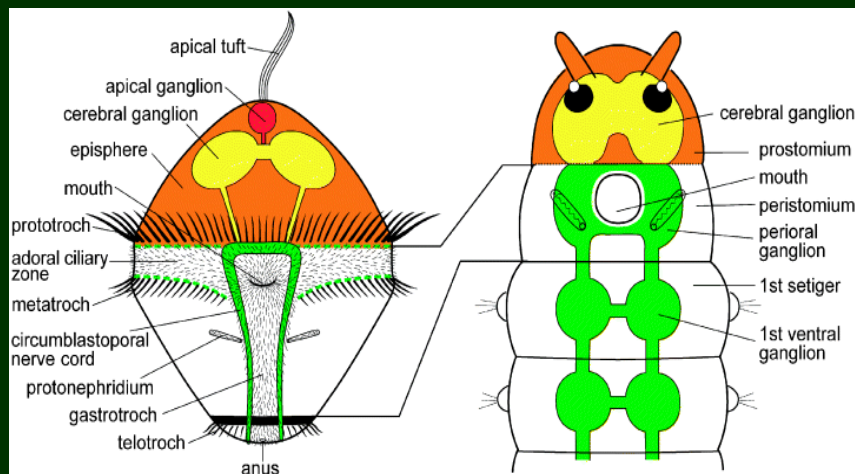
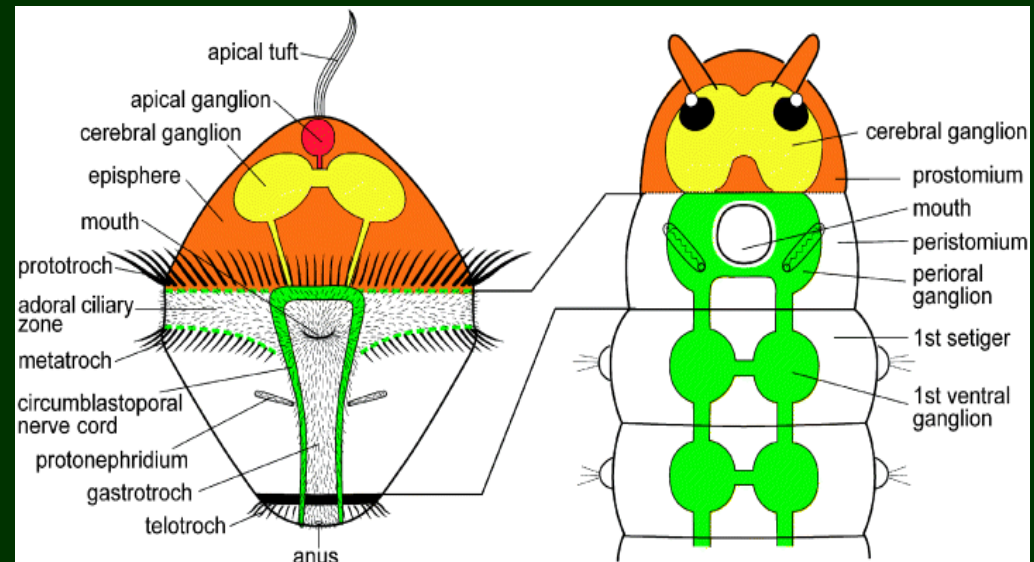
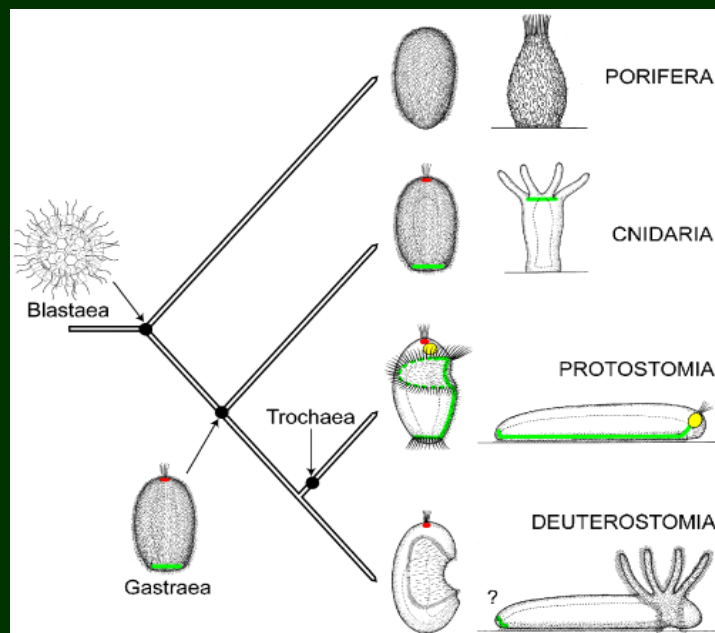


# Spiralia I „Platyzoa“

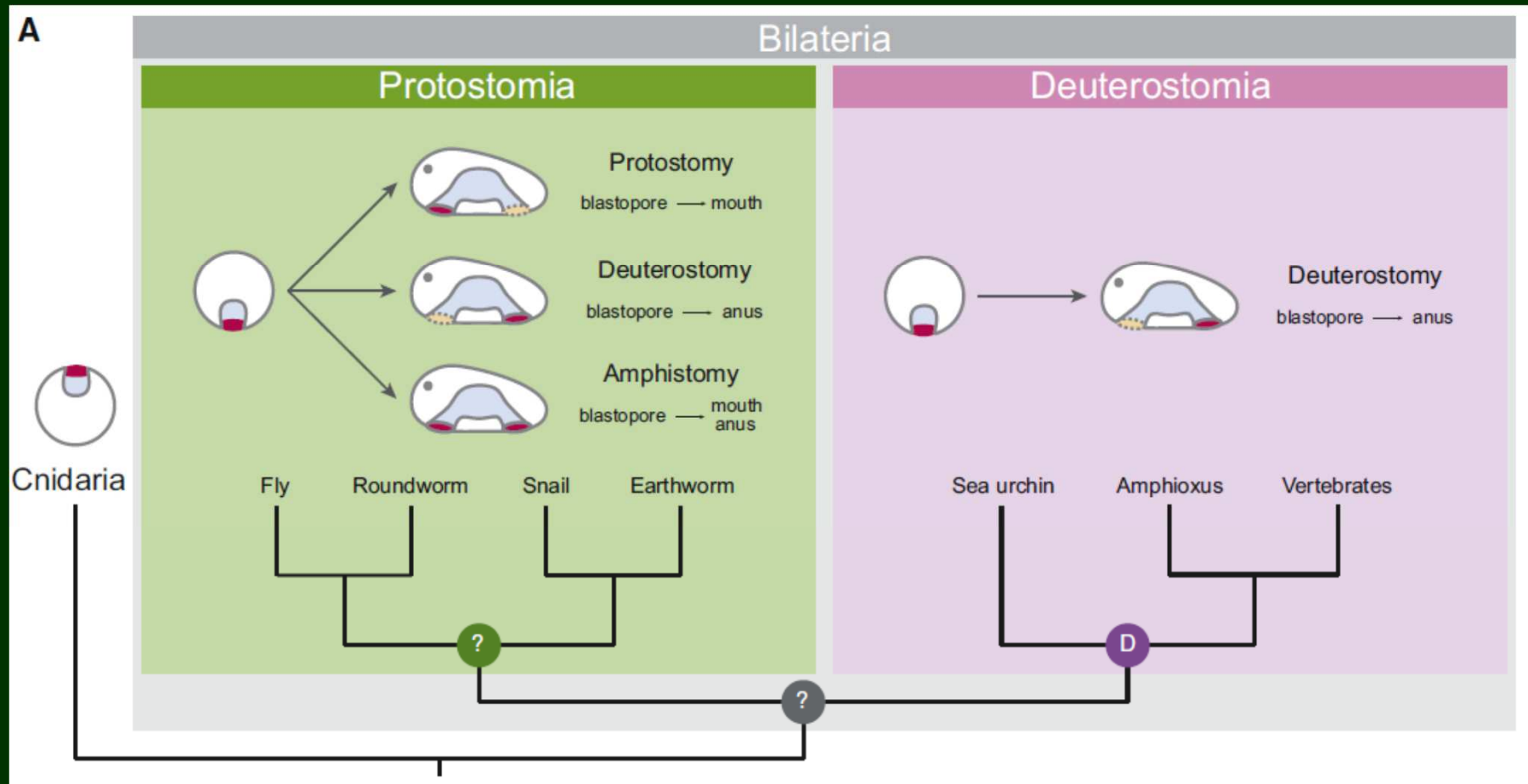


# Protostomia

- blastopór se mění v ústní i řitní otvor
- břišní nervová soustava

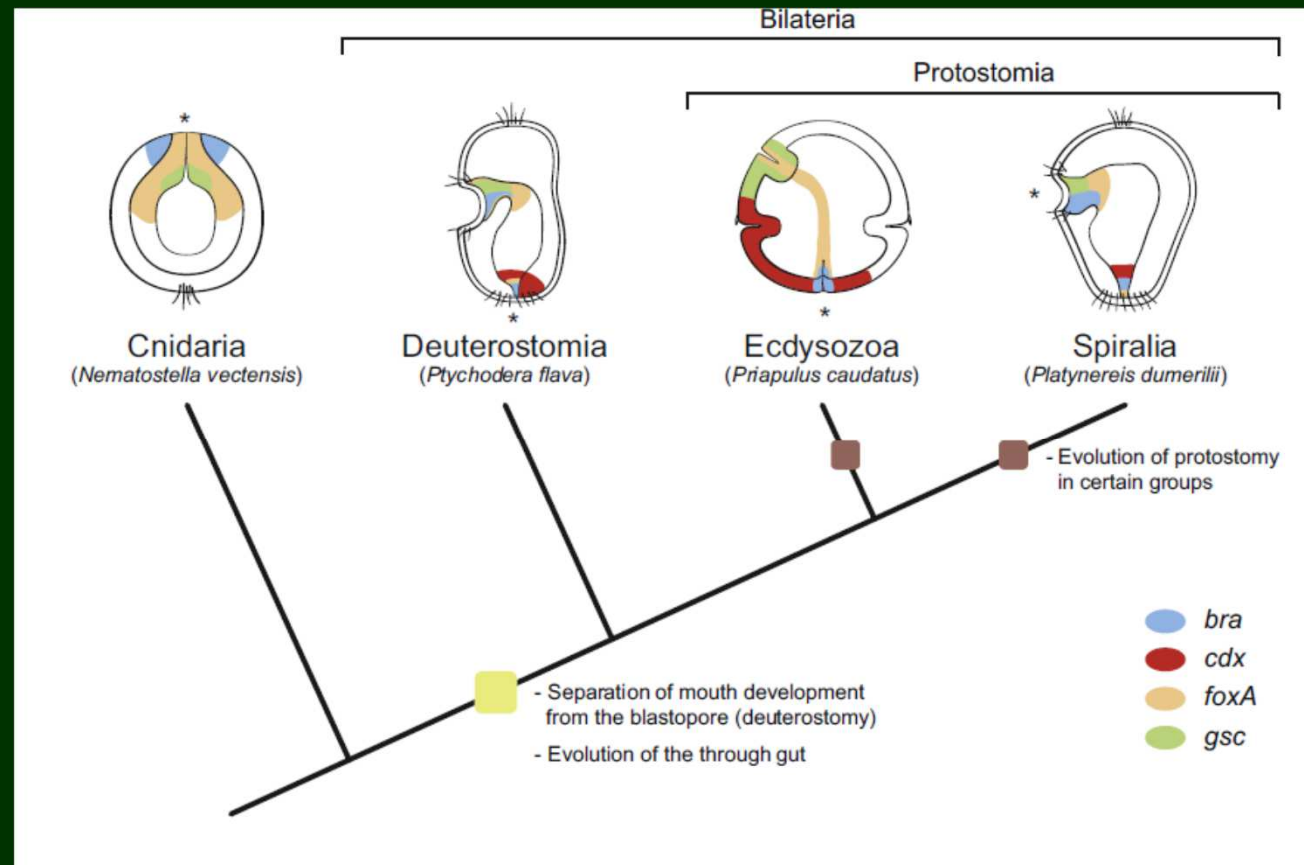


# Blastopór



# Prvo- vs. druhoústost bilaterií

- původní deuterostomie bilaterií?
- Ecdysozoa a ploutvenky jsou (víceméně) deuterostomní



# spirální rýhování

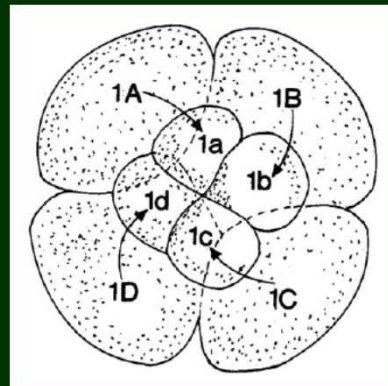
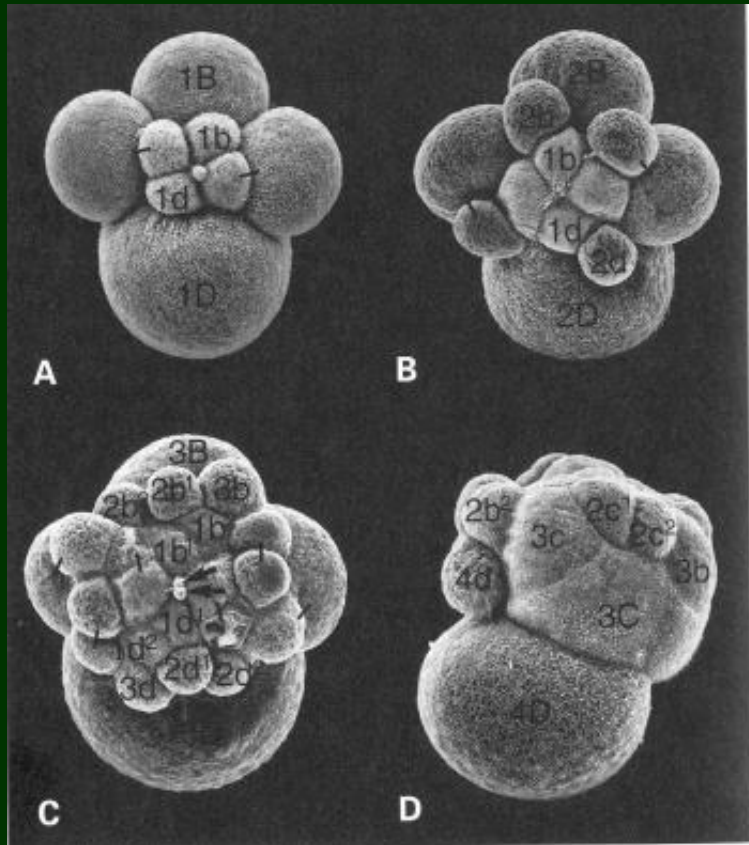
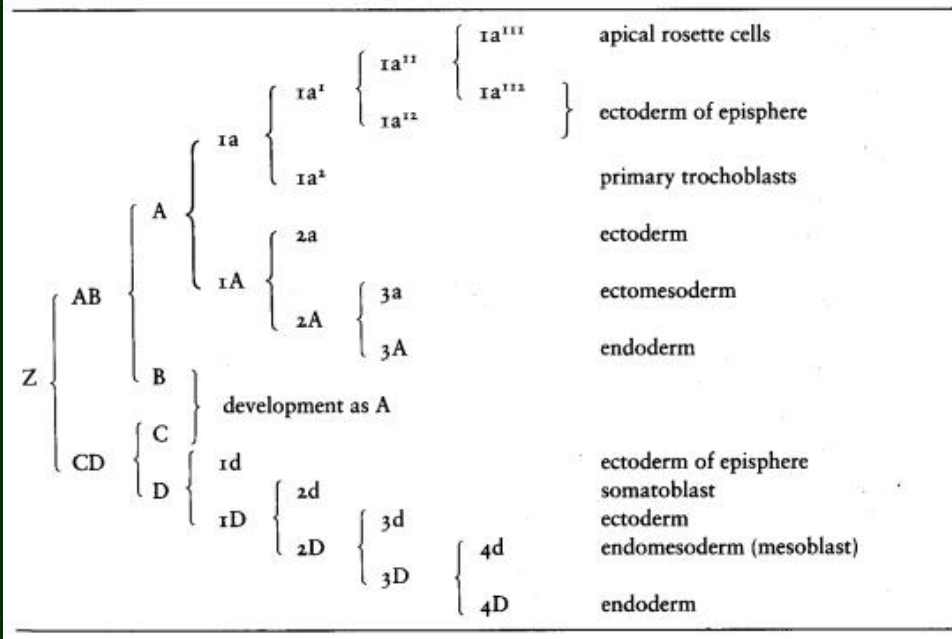
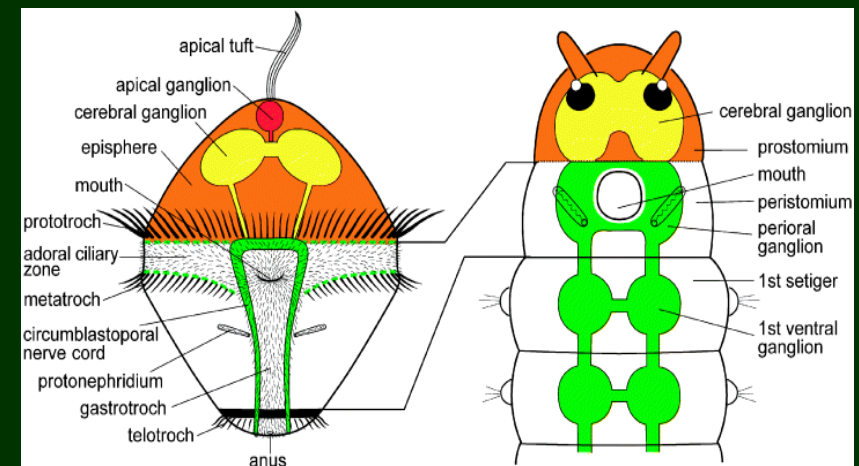
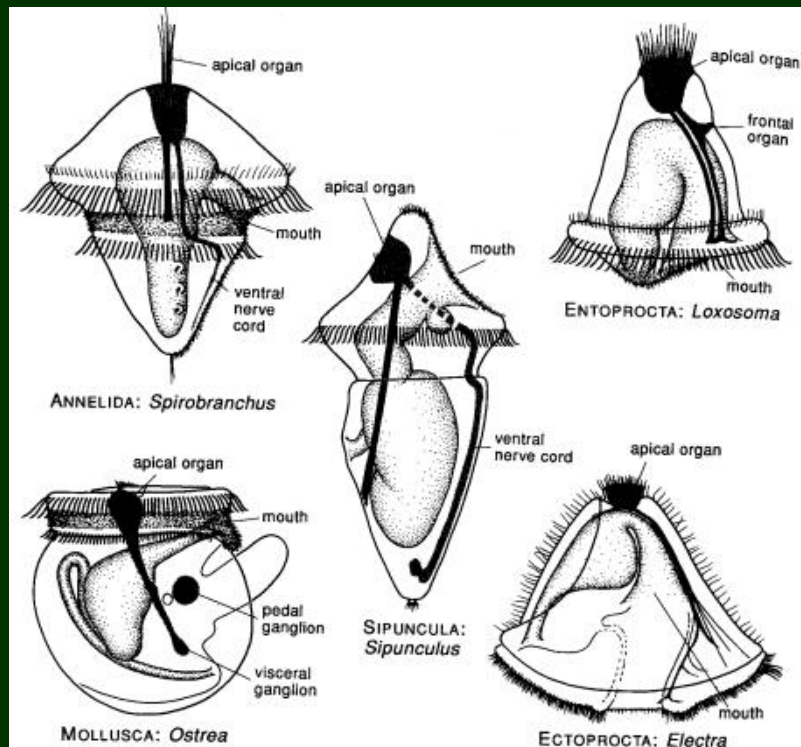
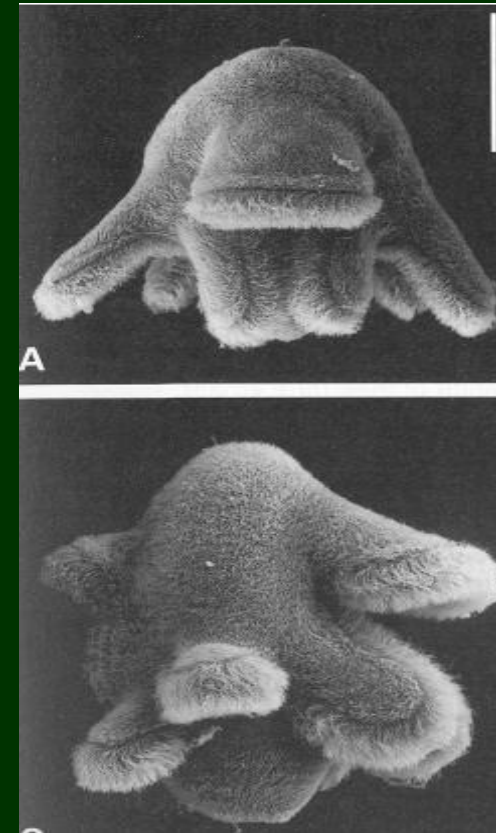
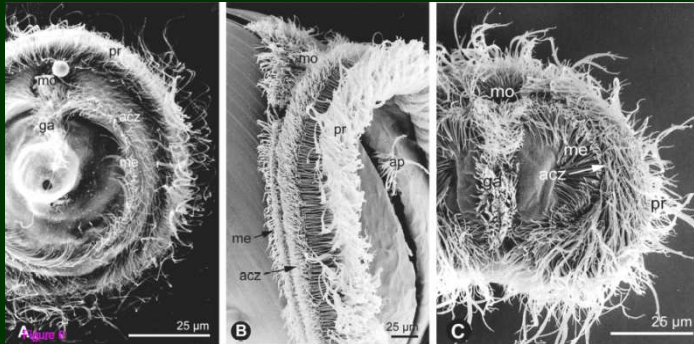


Table 13.1. Spiral cleavage in an annelid (*Arenicola*) and a mollusc (*Trochus*). Based on Siewing (1969)



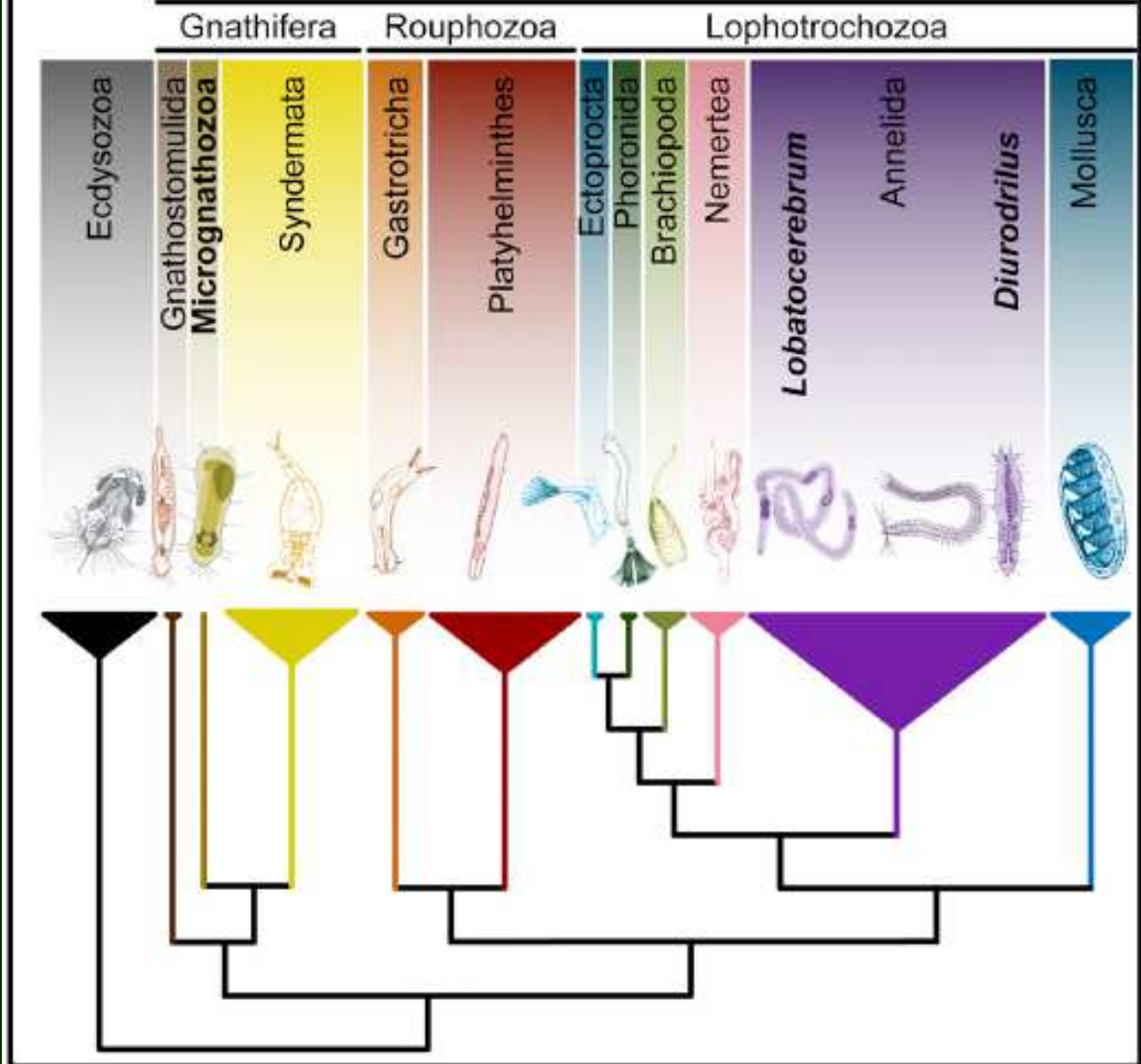
# trochoforové larvy



# Spiralia

- několik navzájem se vylučujících vyšších taxonů
- **Gnathifera** (Gnathostomulida + Micrognathozoa + Rotifera)
- **Platyzoa** (Gnathifera + Gastrotricha + Platyhelminthes)
- **Rouphozoa** (Gastrotricha + Platyhelminthes)
- **Platyrochozoa** (Rouphozoa + Lophotrochozoa)
- **Bryozoa** (Ectoprocta + Entoprocta + Cycliophora?)
- **Polyzoa** (Ectoprocta + Entoprocta + Cycliophora)
- **Trochozoa** (Nemertea + Mollusca + Brachiozoa + Annelida)
- **Brachiozoa** (Brachiopoda + Phoronida)
- **Lacunifera = Tetraneuralia** (Mollusca + Entoprocta)
- **Kryptrochozoa** (Nemertea + Brachiozoa)
- **Lophophorata** (Brachiozoa + Ectoprocta + Entoprocta? + Cycliophora?)

# Spiralia

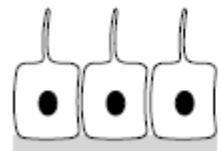




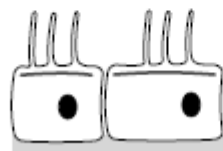
# Gnathifera



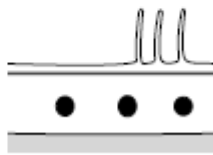
# Gnathifera



**Gnathostomulida**



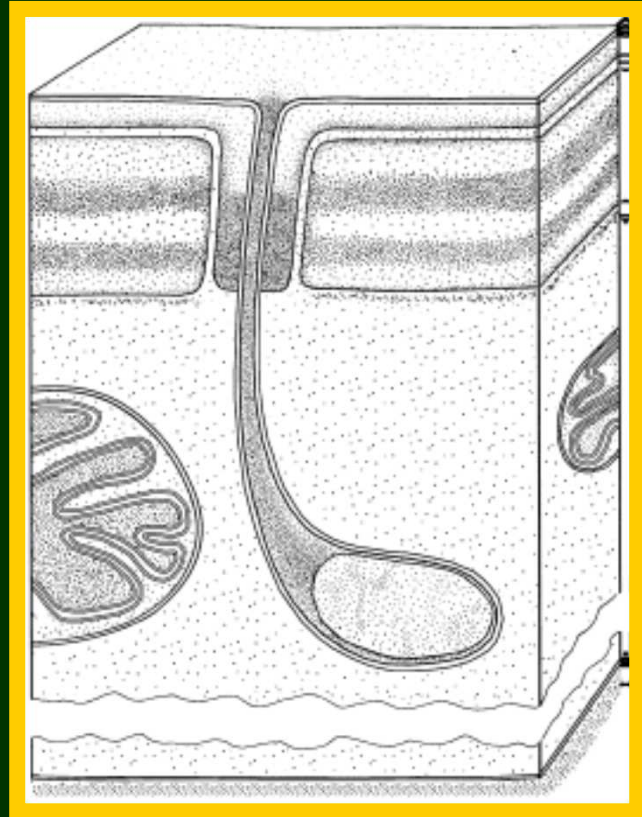
**Micrognathozoa**



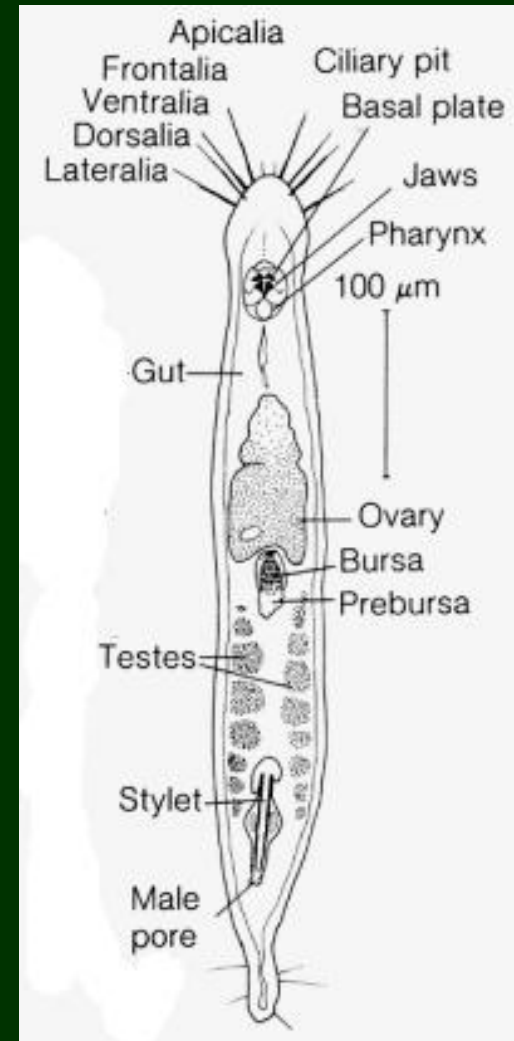
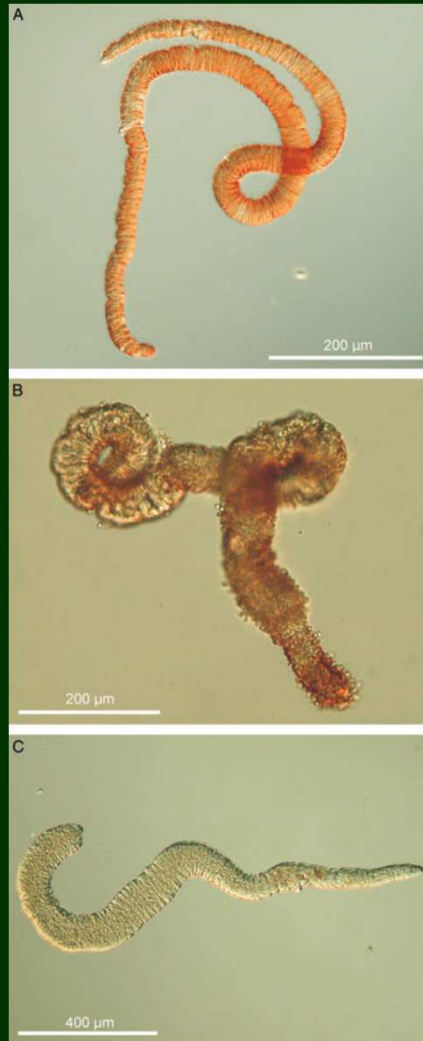
**Syndermata**

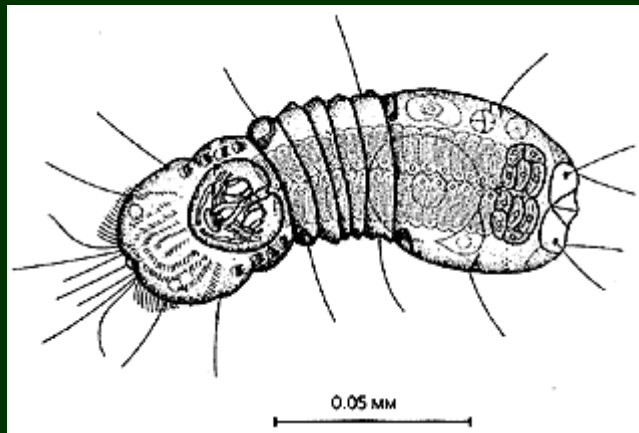
vnitrobuněčný skelet

bazální lamina



# Gnathostomulida

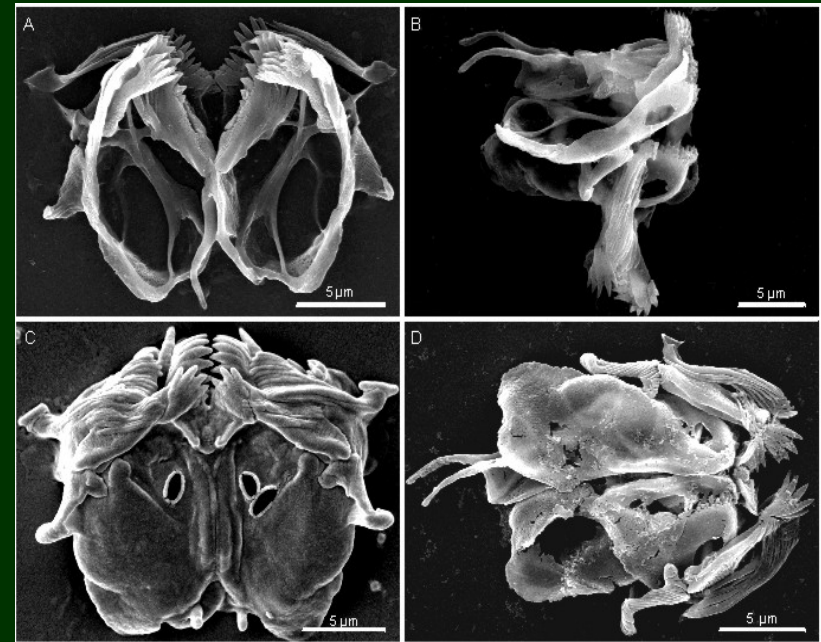




*Limnognathia maerski*

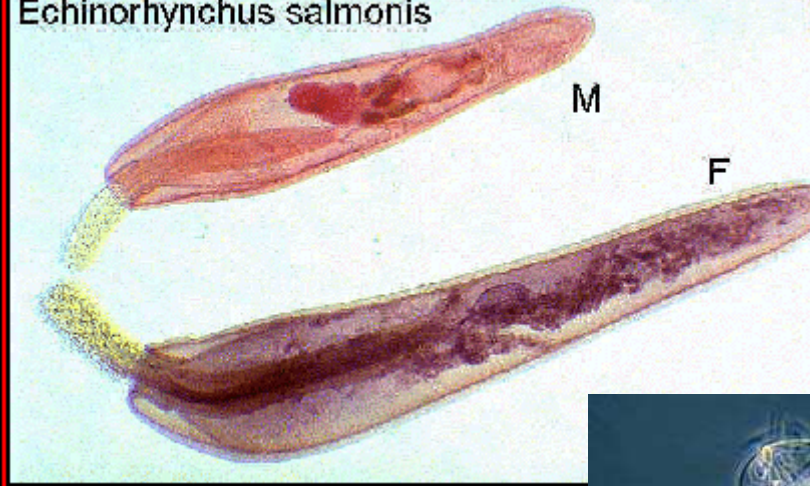
**Micrognathozoa**

# Micrognathozoa

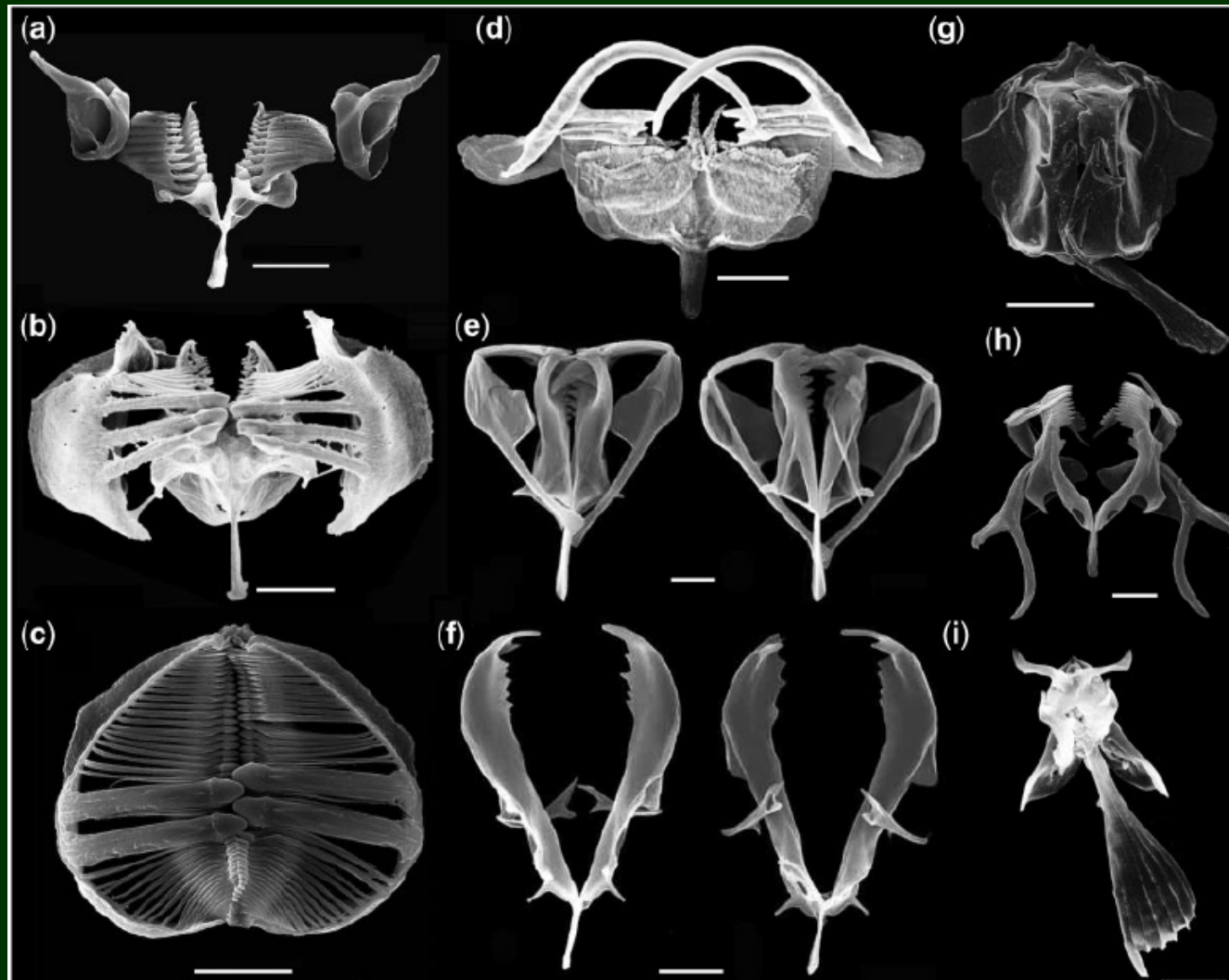


# Rotifera (= Syndermata)

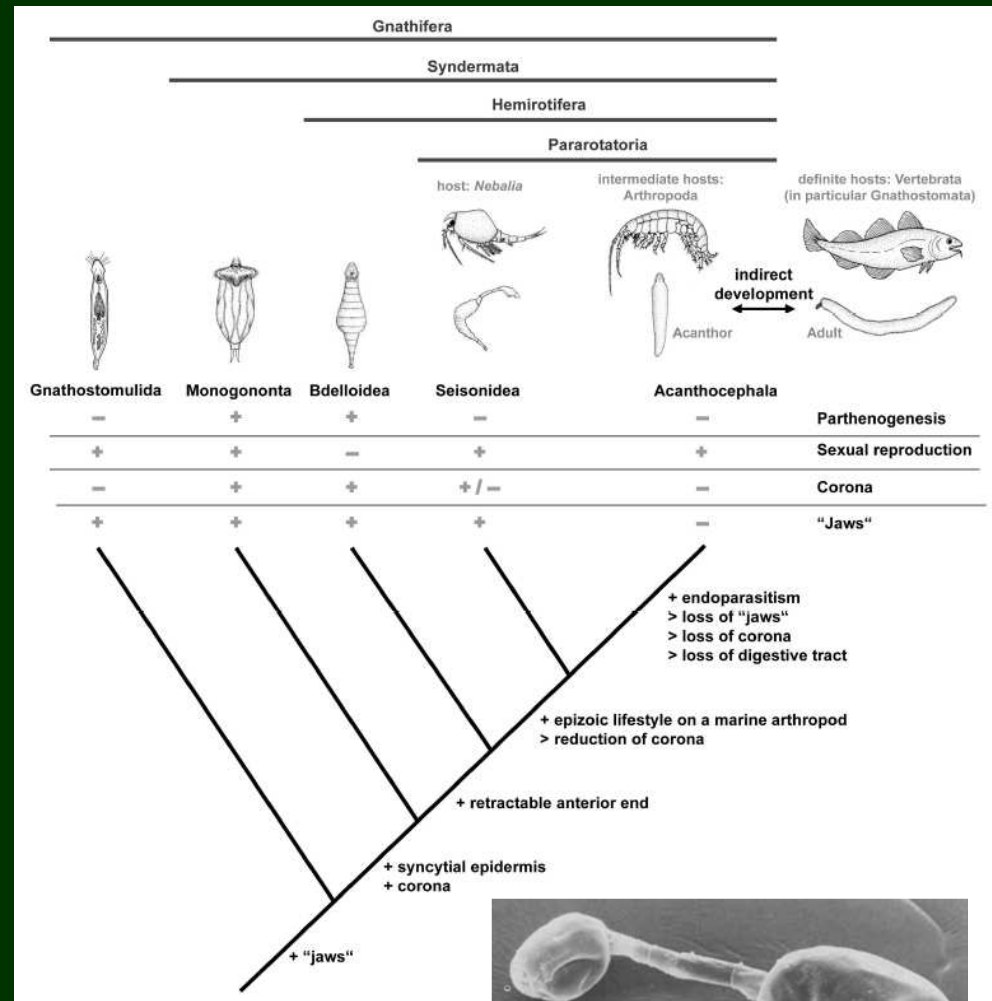
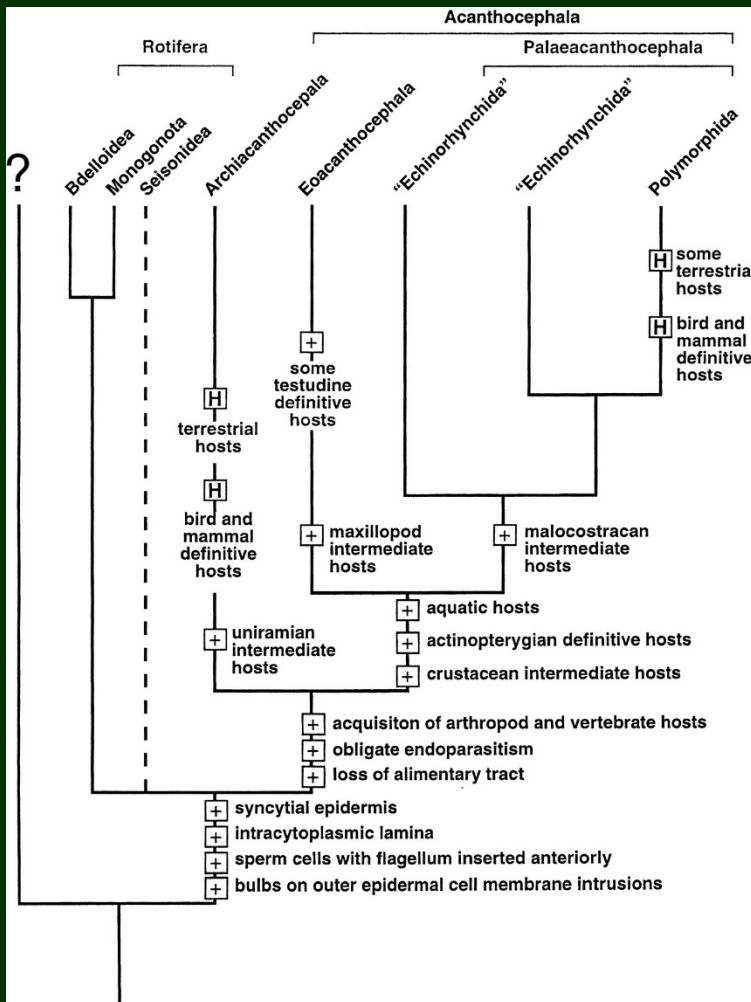
Echinorhynchus salmonis



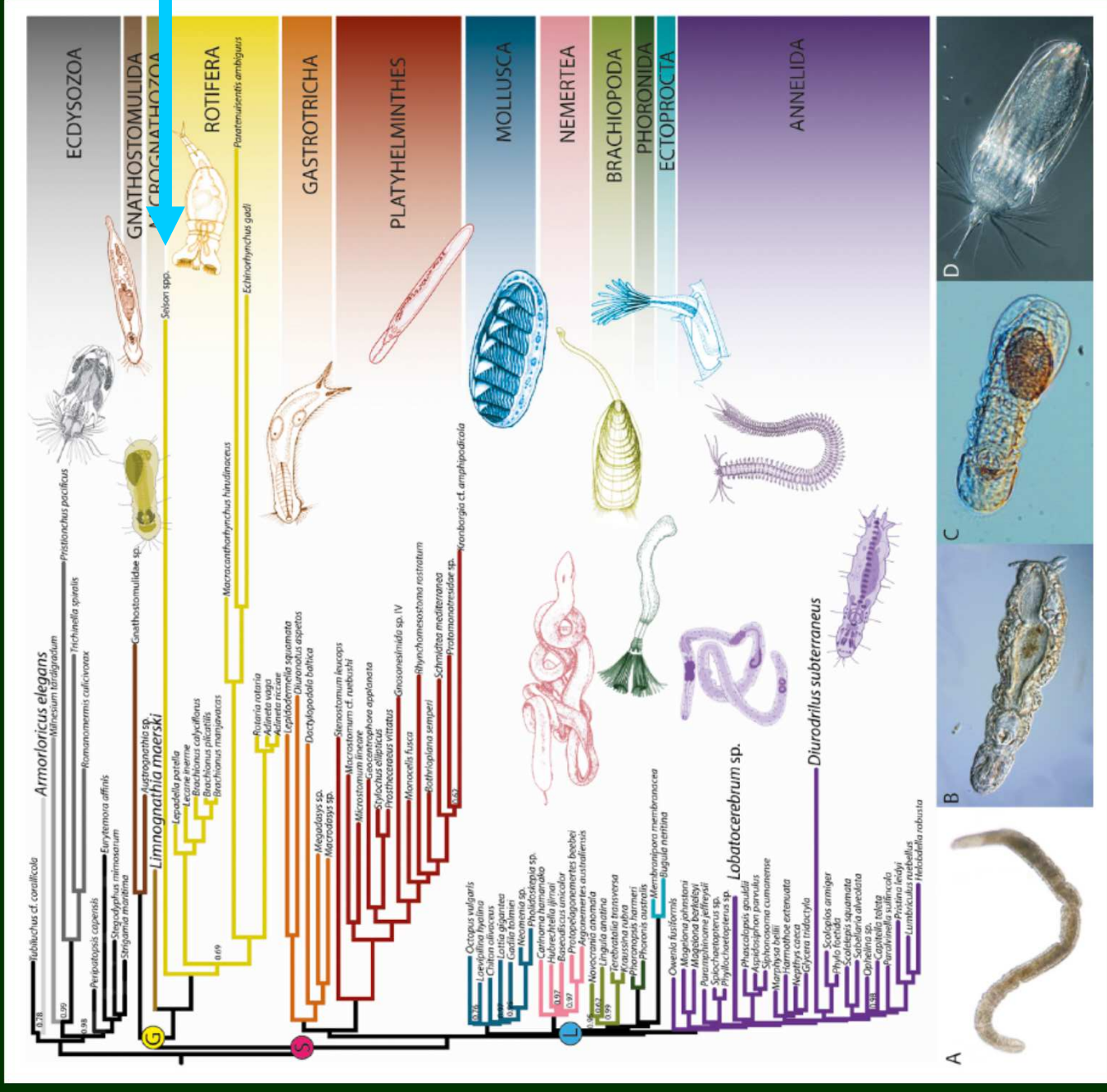
# Rotifera



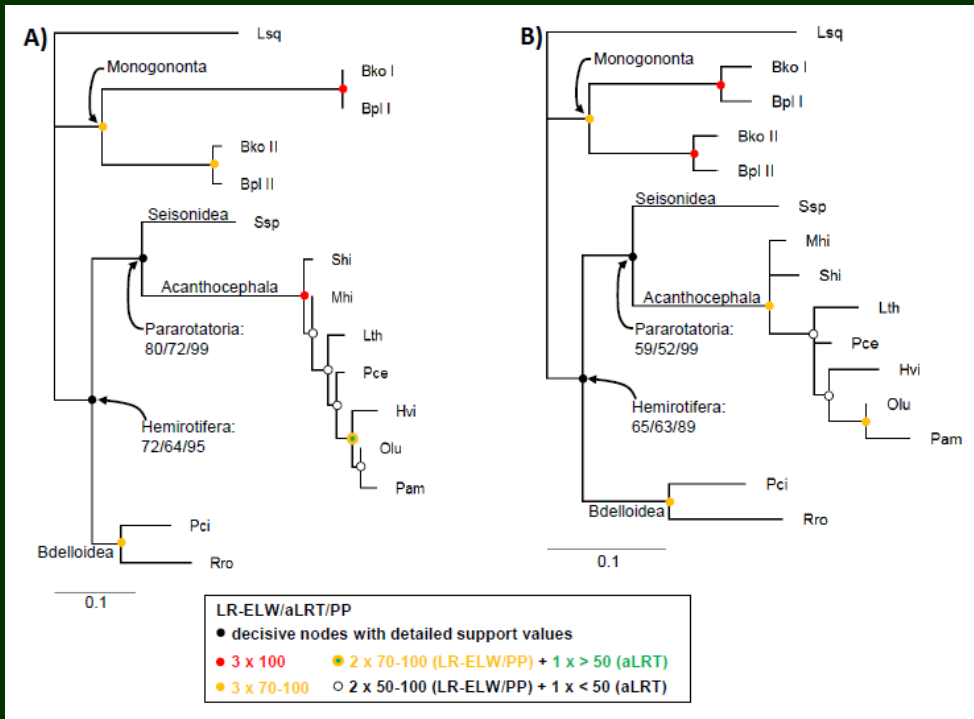
# Rotifera



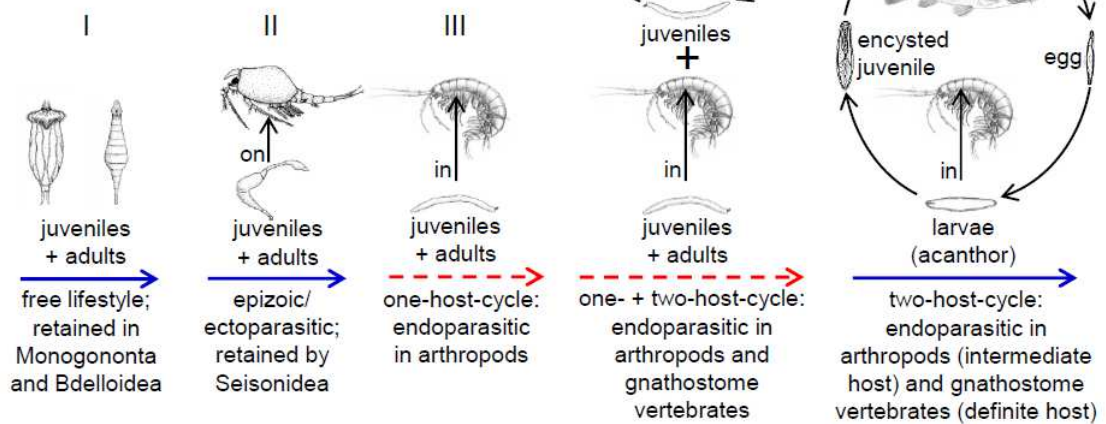




# Rotifera: pořadí genů v mtDNA



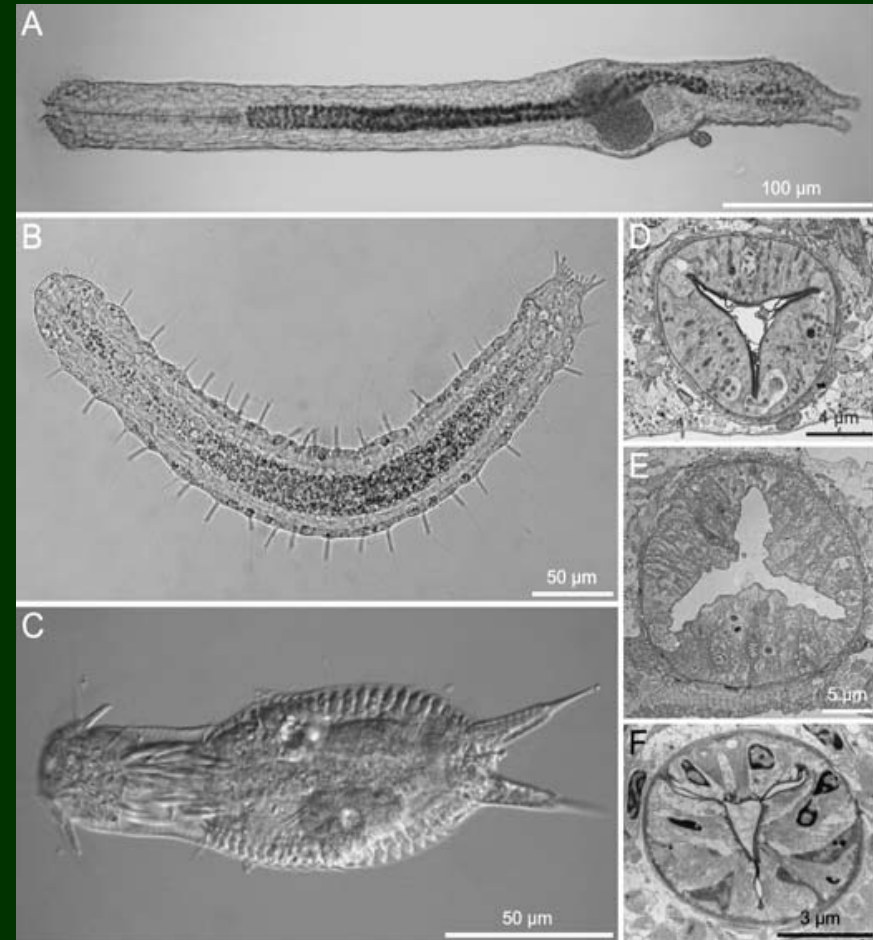
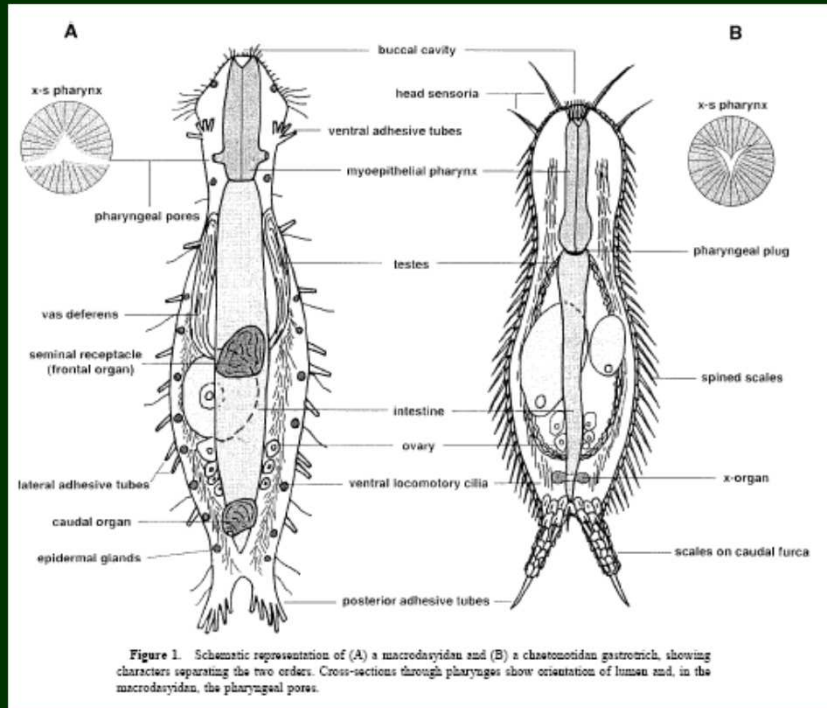
Seisonida: aktivně  
penetrují kutikulu  
hostitele a sají  
hemolymfu



# Gastrotricha

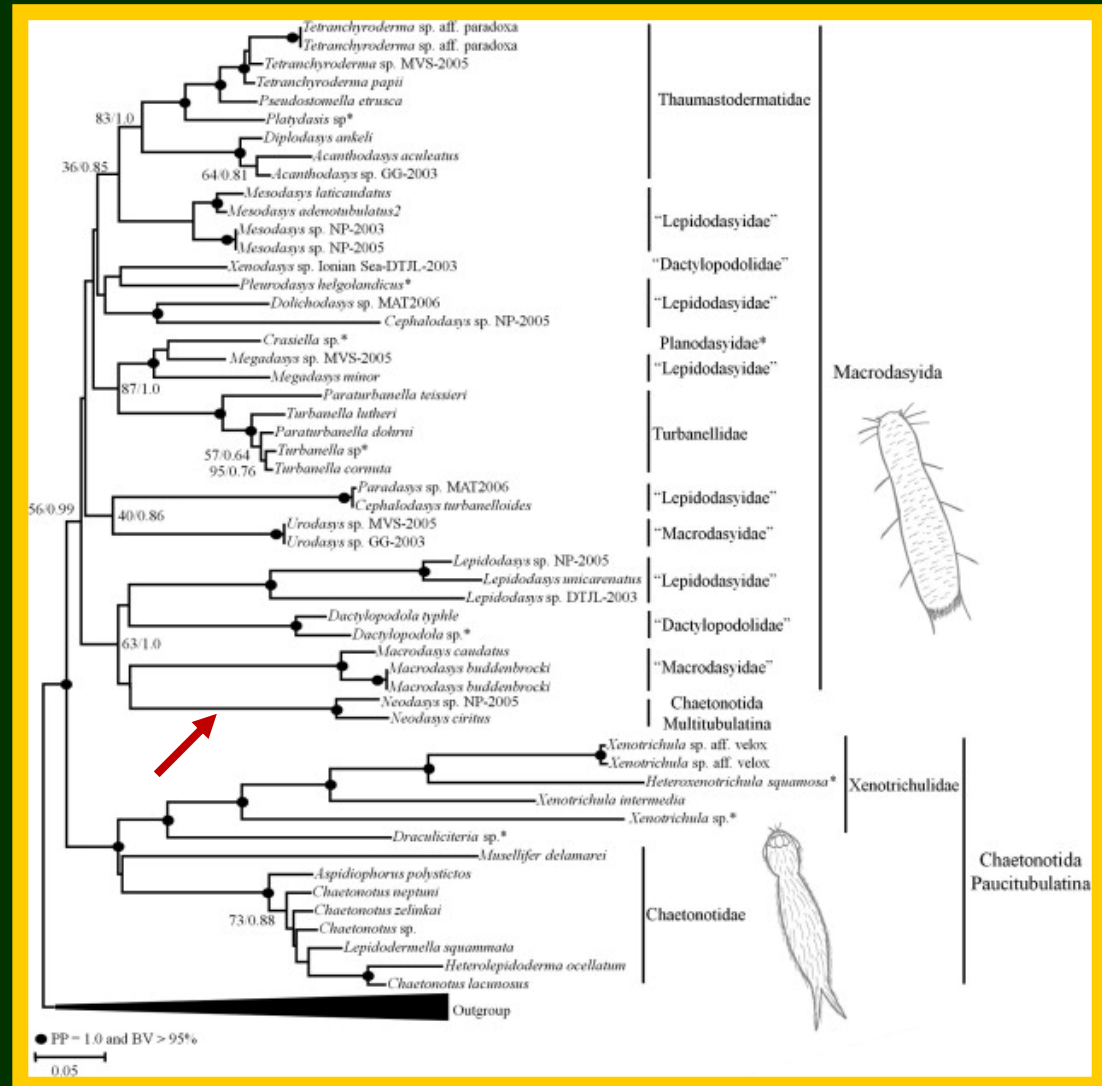
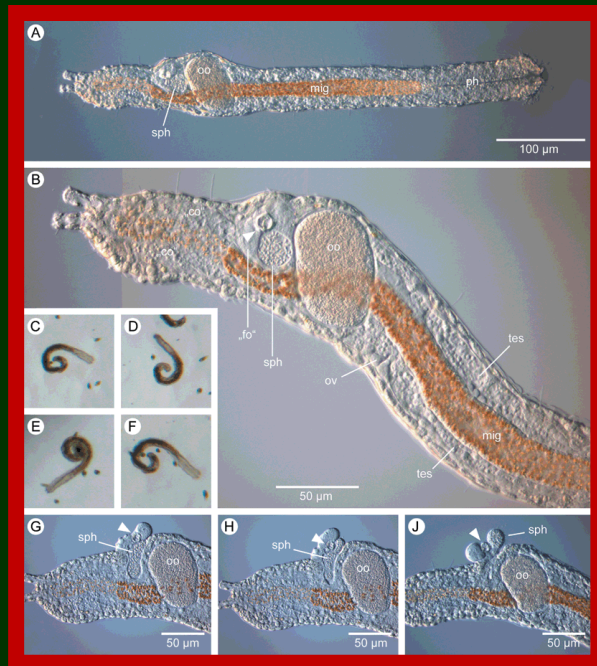


# Gastrotricha



# Gastrotricha: *Neodasys*

- tradičně  
Chaetonotida:  
Multitubulatina
- x 18S – uvnitř  
Macrodasysida



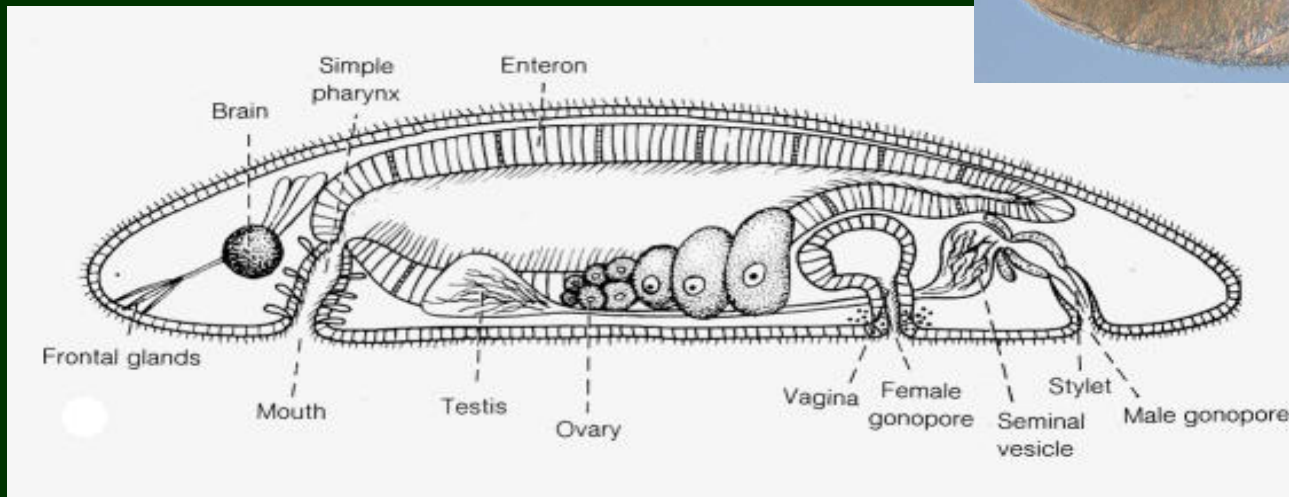
# Platyhelminthes



# Platyhelminthes: Catenulida

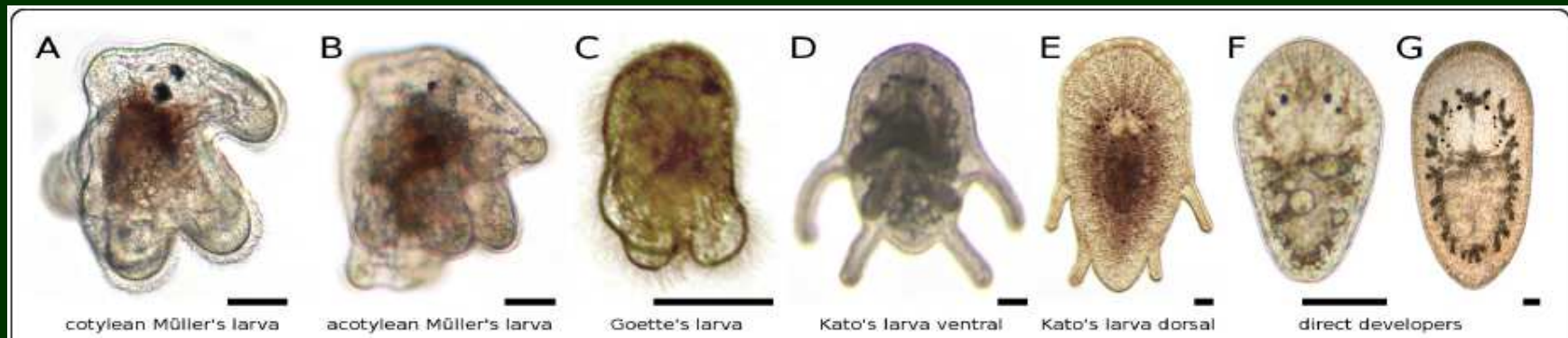


# Platyhelminthes: Macrostomorpha



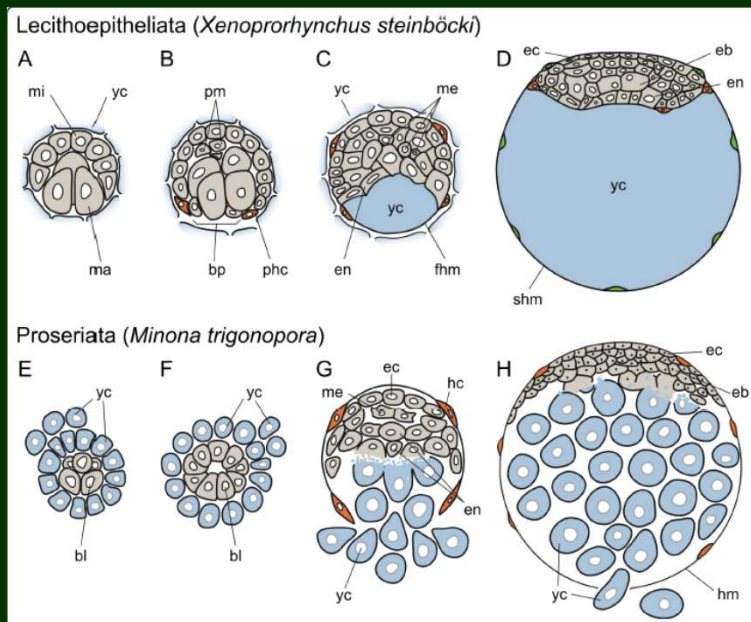
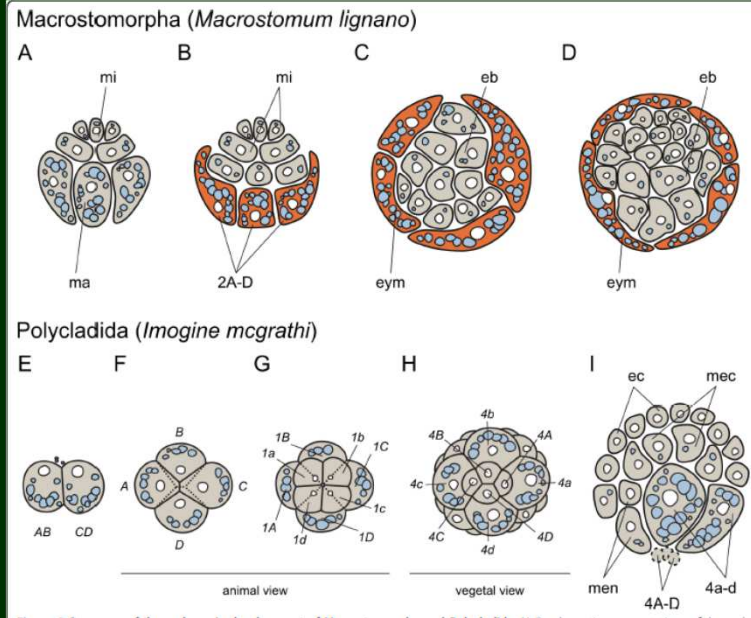


# Platyhelminthes: Polycladida

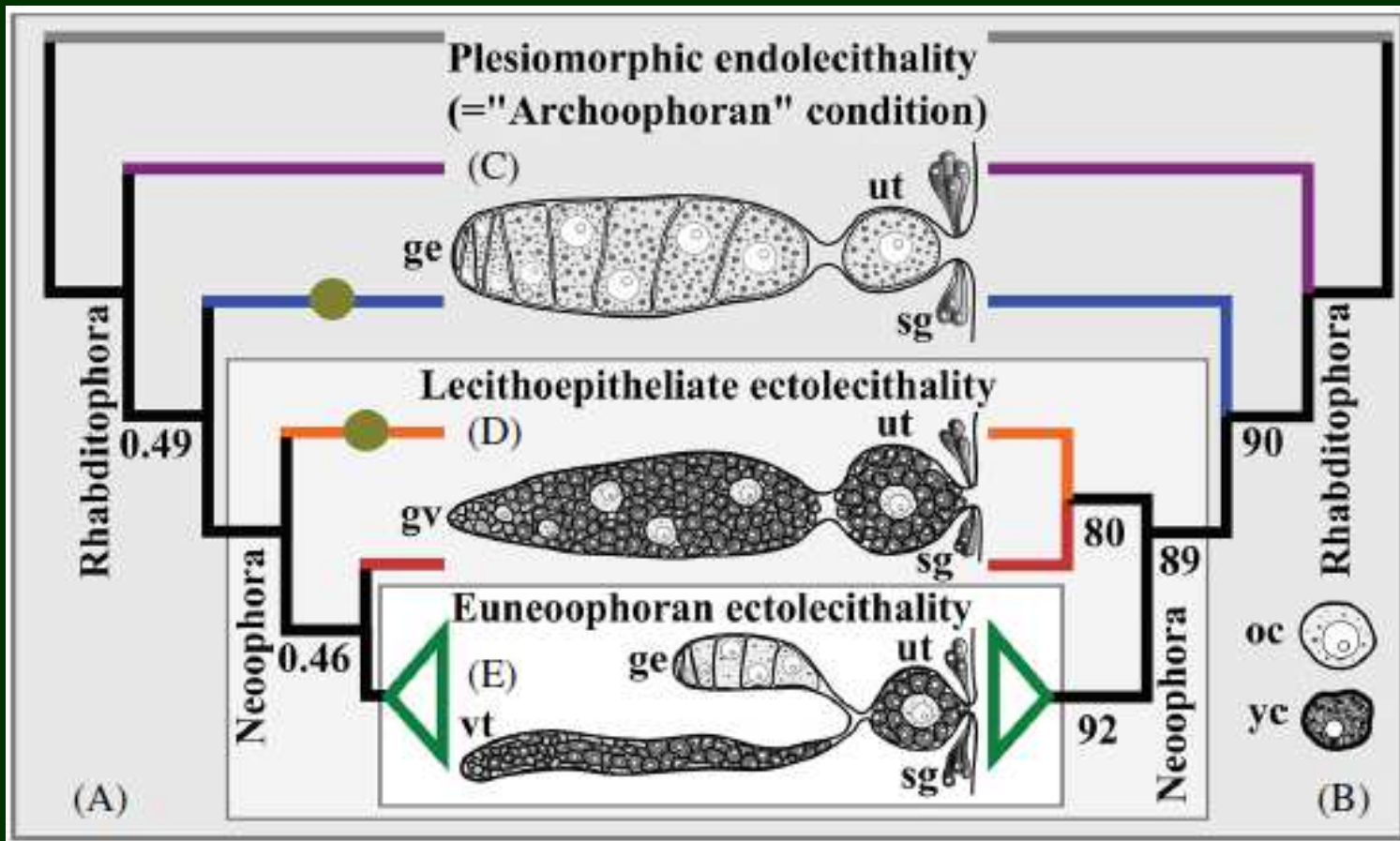


# Neophora

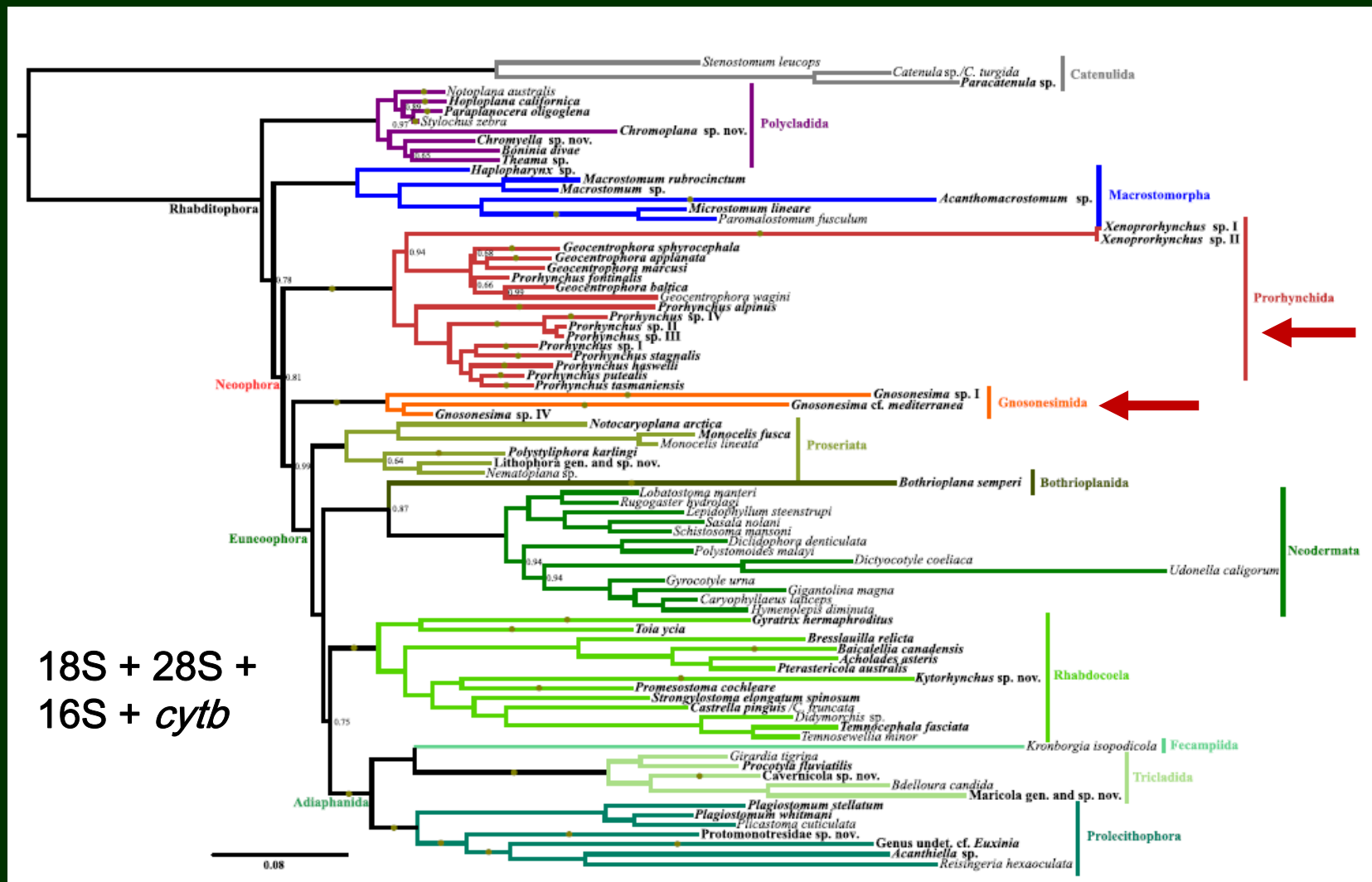
- „mnohobuněčná (ektolecitální) vajíčka“ – vaječné schránky s oocytem a několika vitelocyty



# Platyhelminthes evoluce neoforie

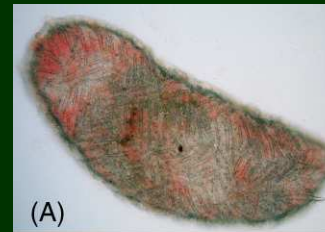


# Platyhelminthes



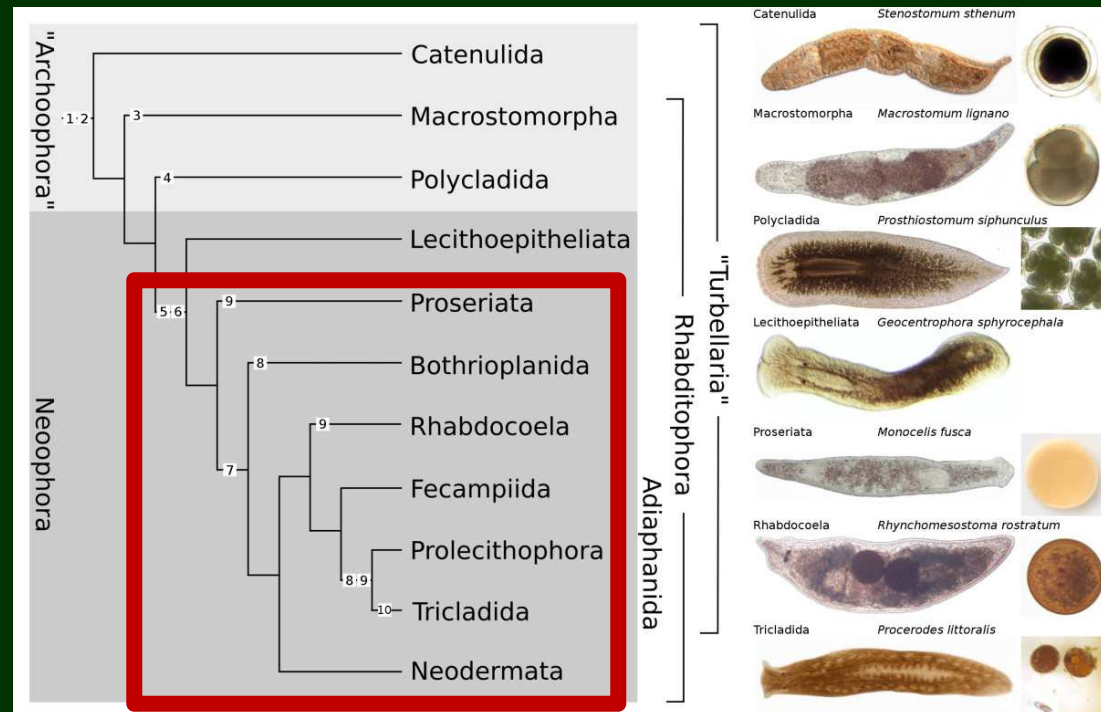
# Platyhelminthes: „Lecithoepitheliata“

- 1. Prorhynchida
- 2. Gnosesimida

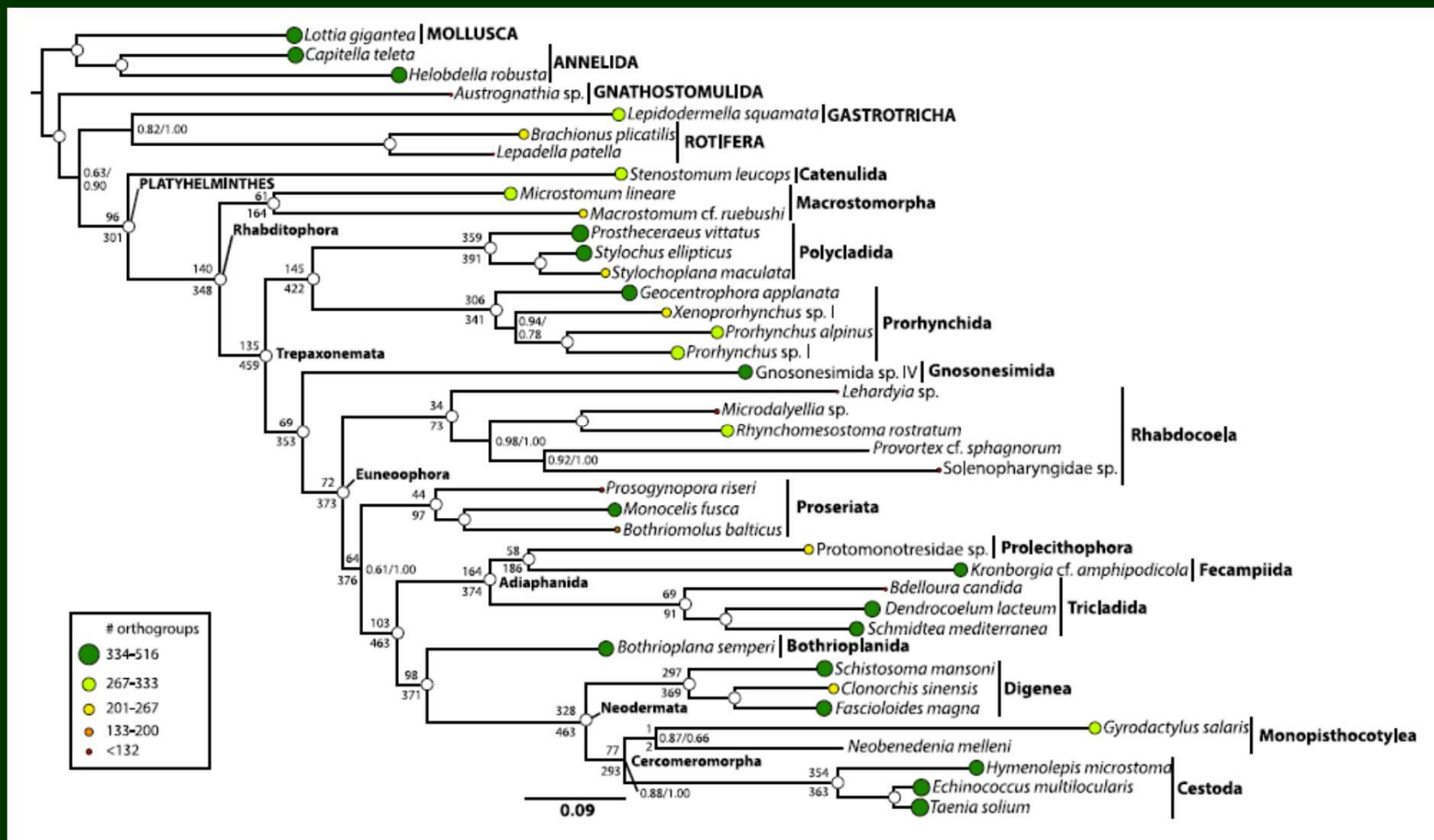


# Platyhelminthes: Euneoophora

- Proseriata
- Rhabdocoela
- Adiaphanida
- Bothrioneodermata

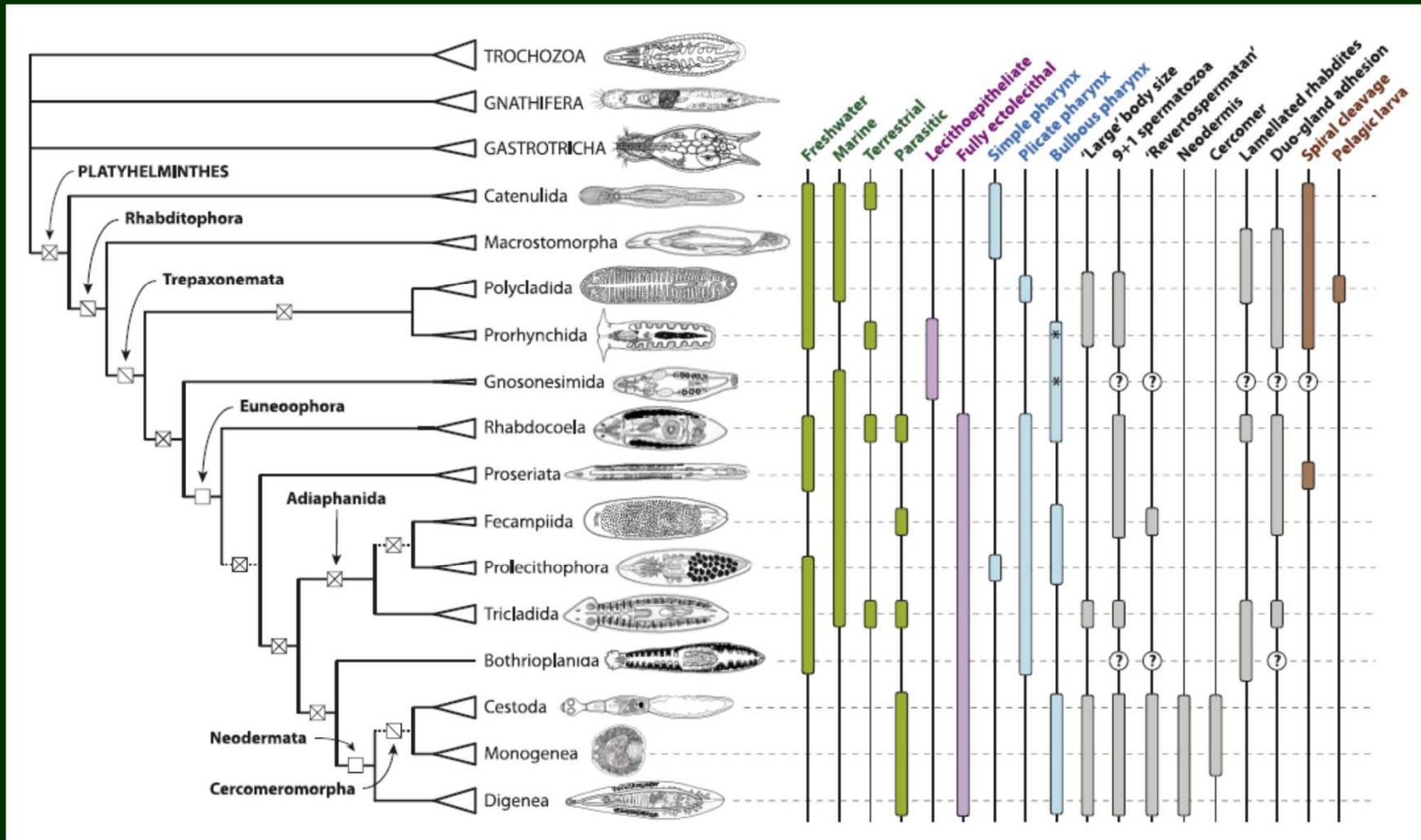


# Fylogeneze ploštěnců



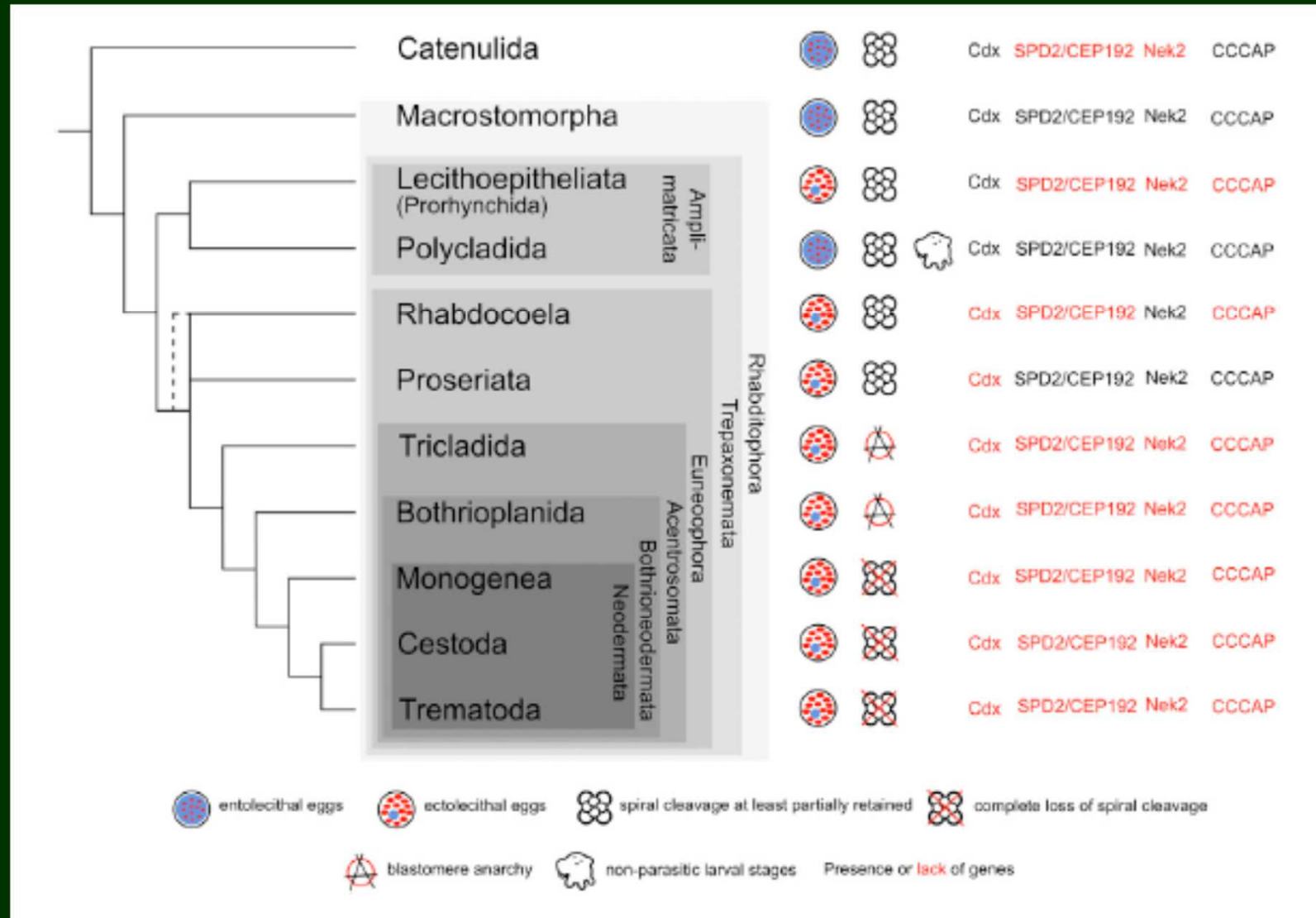
516 genů

# Fylogeneze ploštěnců





# Fylogeneze ploštěnců

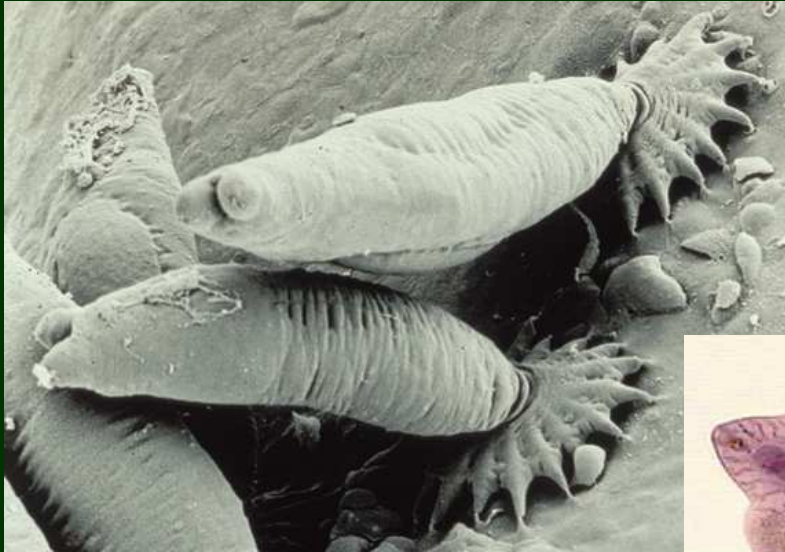


# Bothrioplanida

- *Bothrioplana*
- především přechodné sladké vody, vzácněji trvalé nádrže, kosmopolitní, dravec, partenogeneze (+ vzácně samčí rudimenty), schopnost přežívat dlouhodobé pasivní disperze (preadaptace pro parazitismus?)

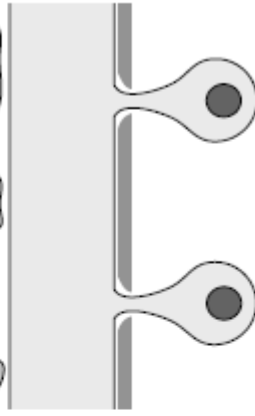
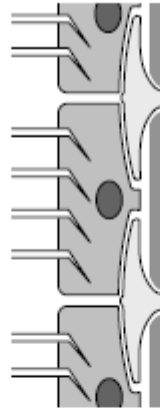
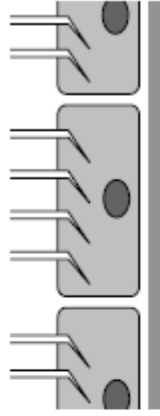
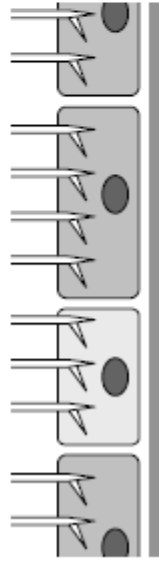
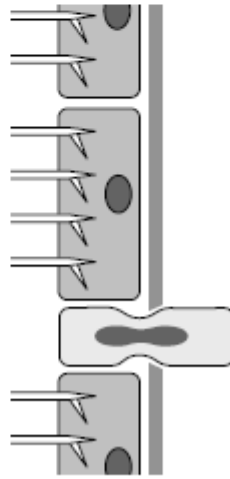
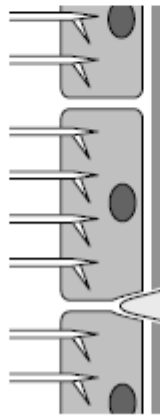
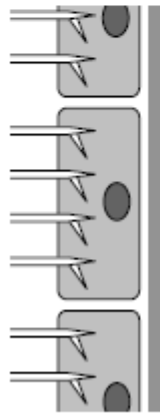


# Platyhelminthes: Neodermata

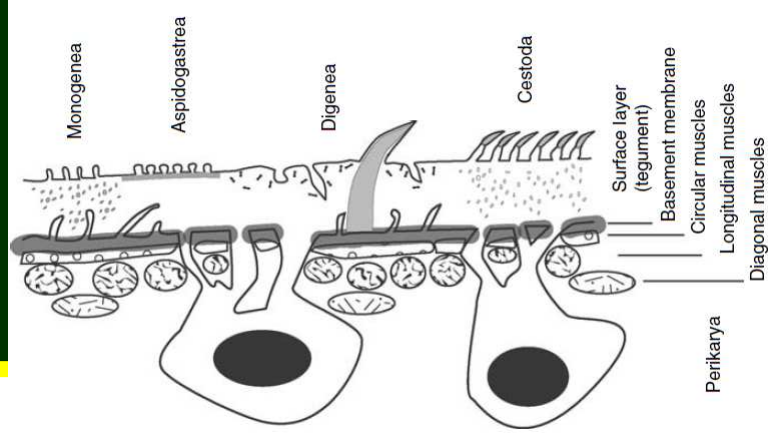


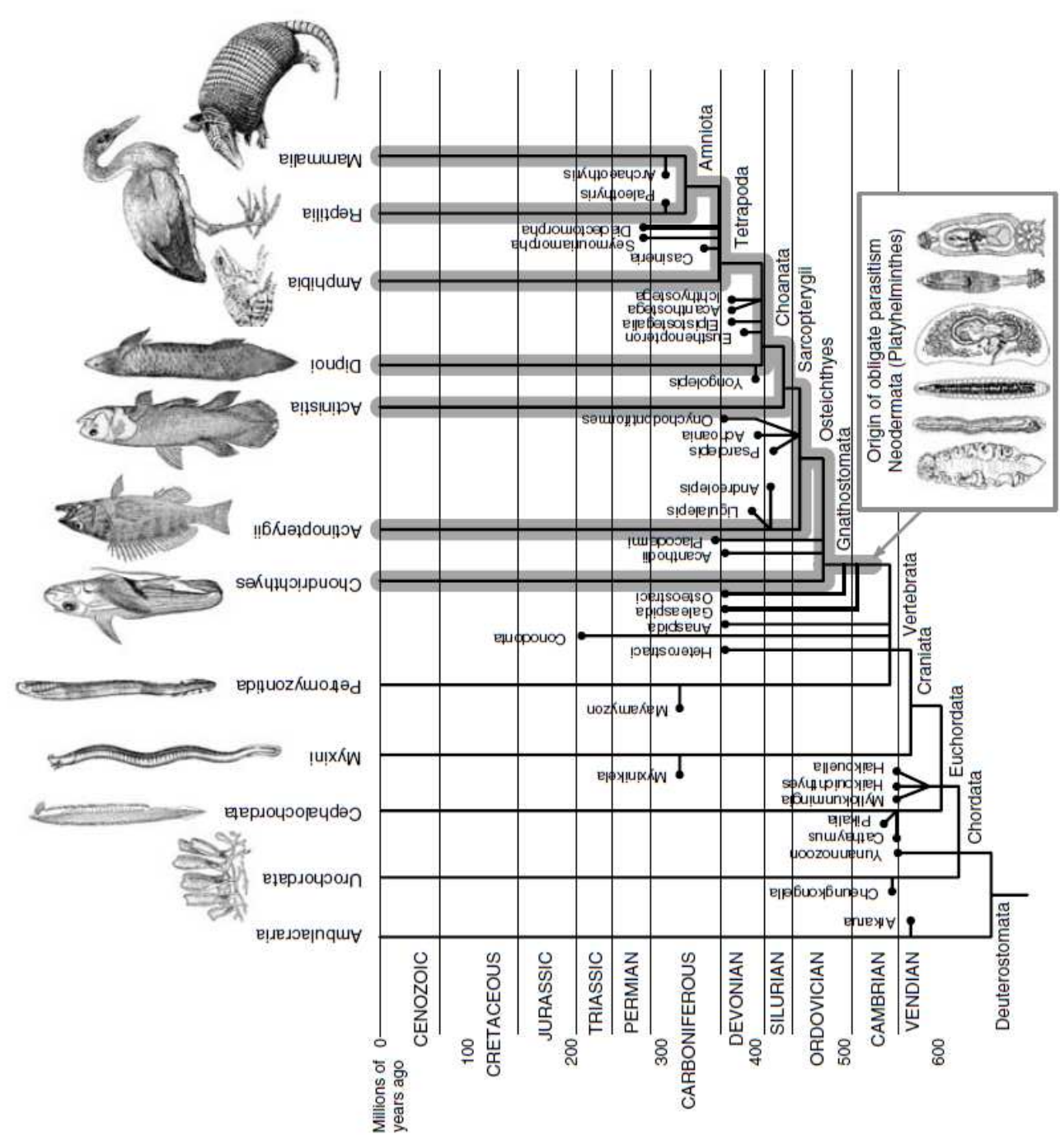
**Platyhelminthes**

**Neodermata**

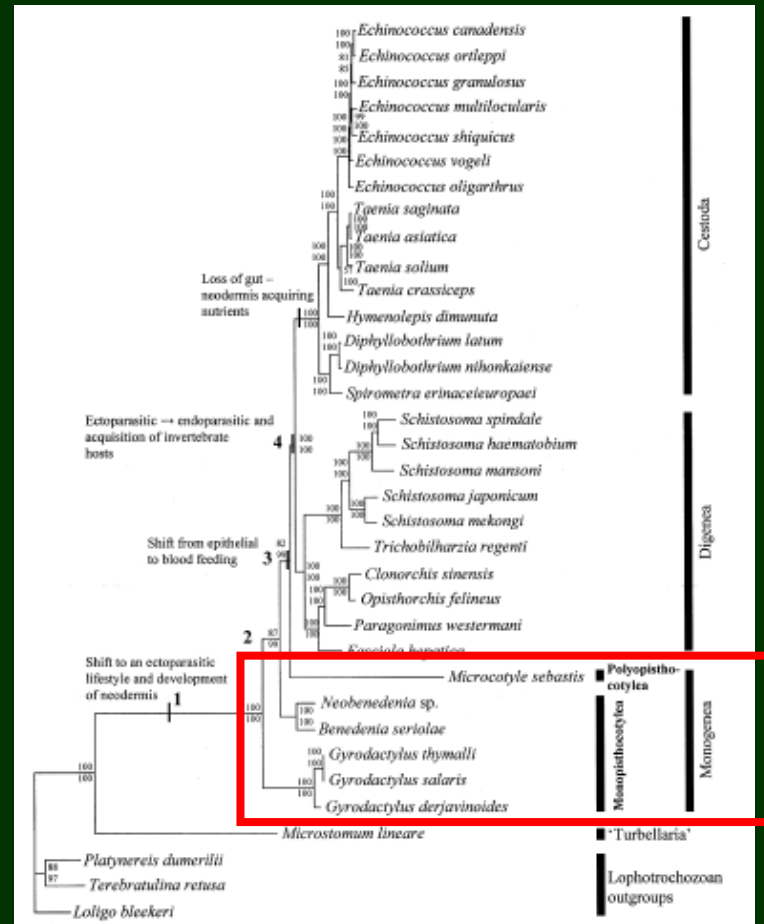
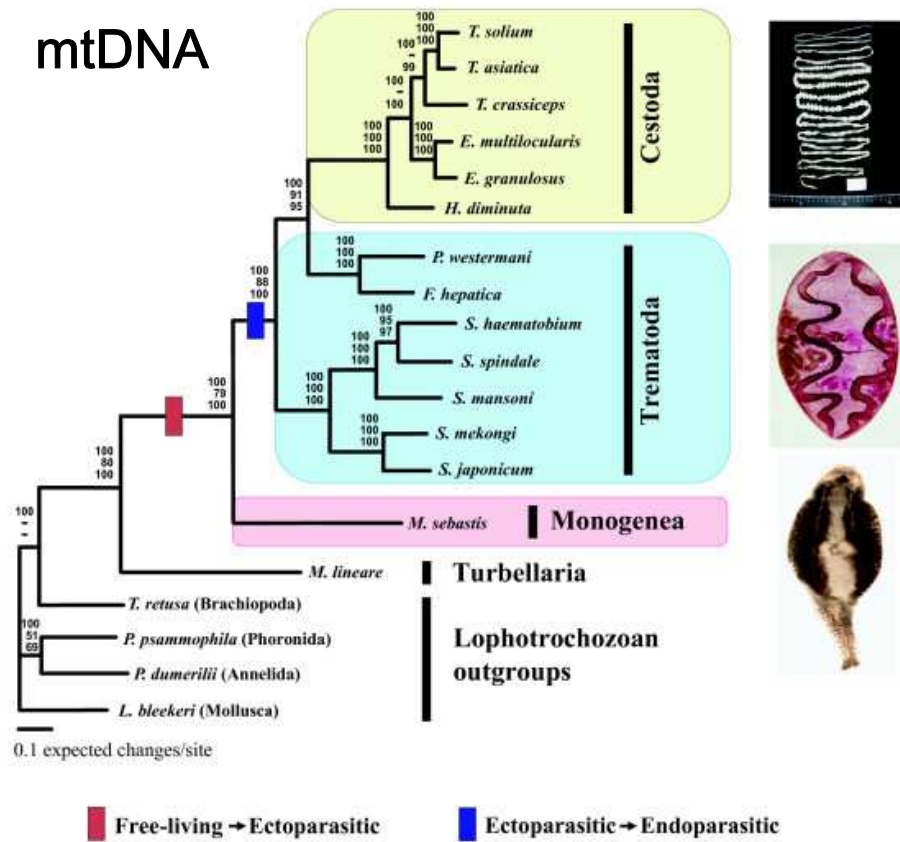


neoblast  
neodermis

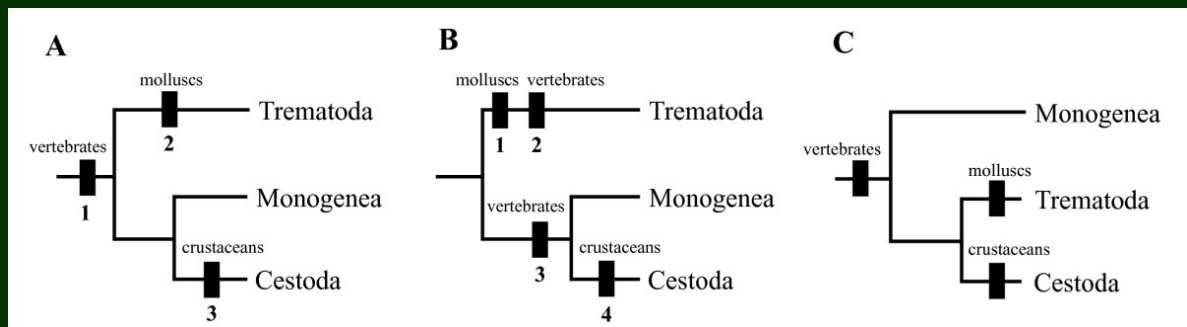




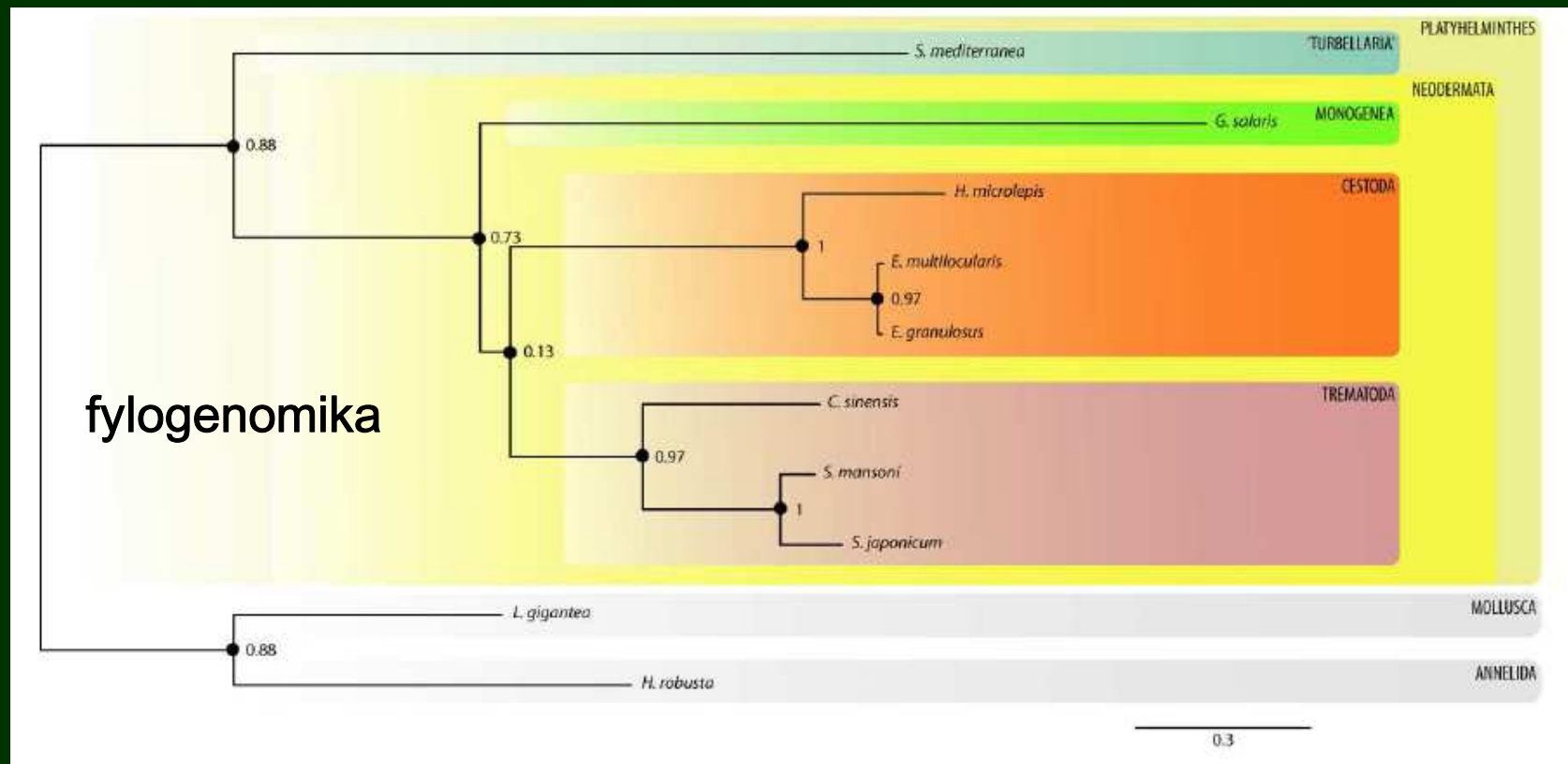
# mtDNA



# Neodermata



# Neodermata



# Rouphozoa vs. Platytrochozoa

- zajímavé vztahy uvnitř trochozoí x postavení *Seison*

