



Cvičení ze zoologie bezobratlých V Plathelminthes, Nematoda, Nematomorpha, Acanthocephala (+Chaetognatha)

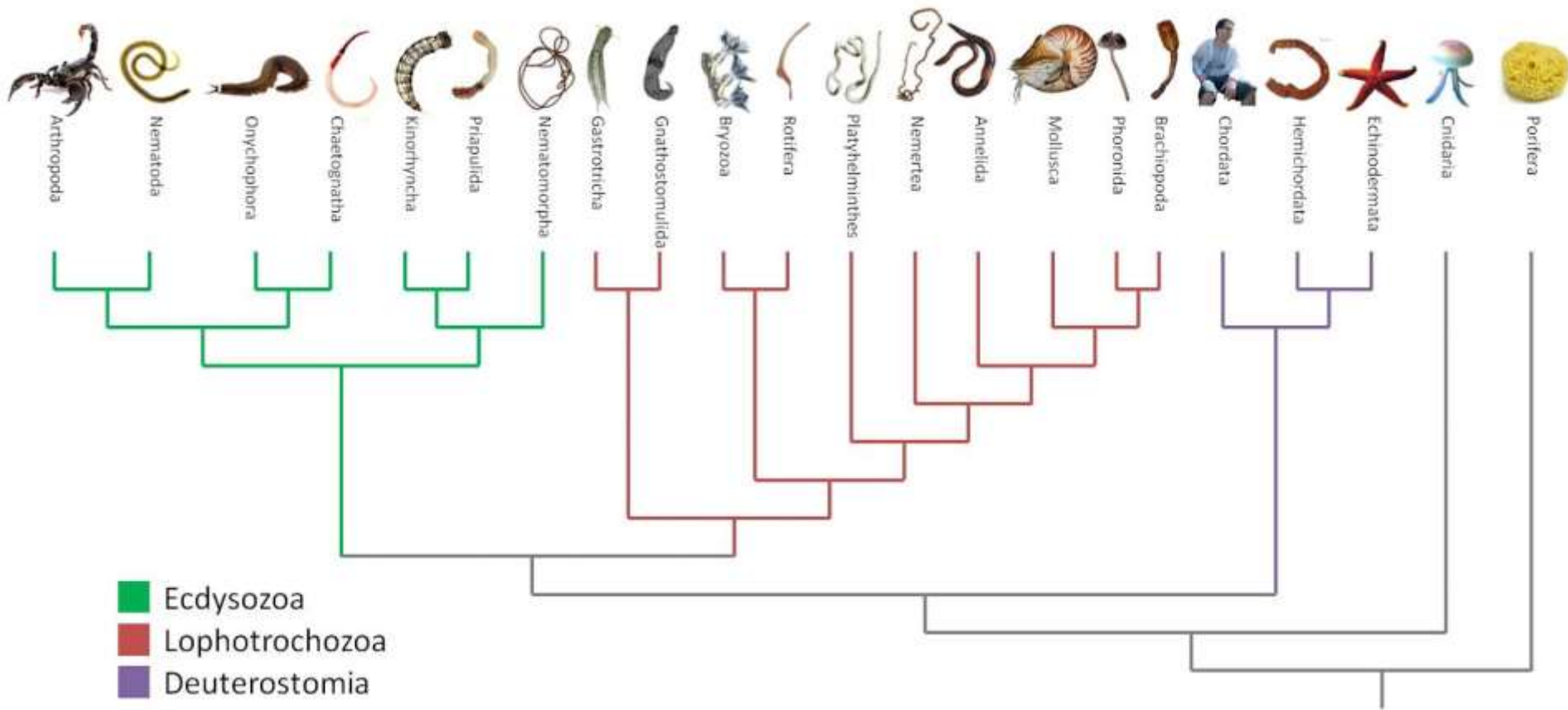


18.3.2013

Oldřich Nedvěd, PřF UK

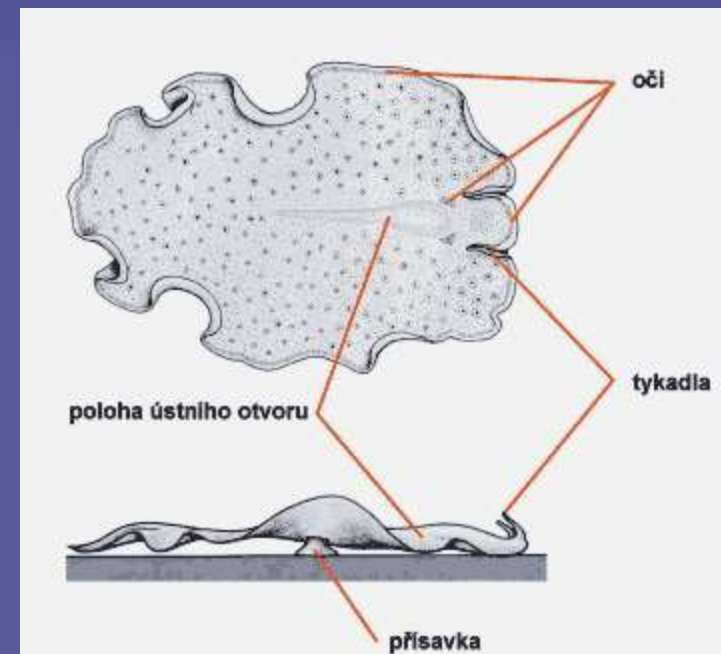
Martin Volf + FXJS, PřF JU





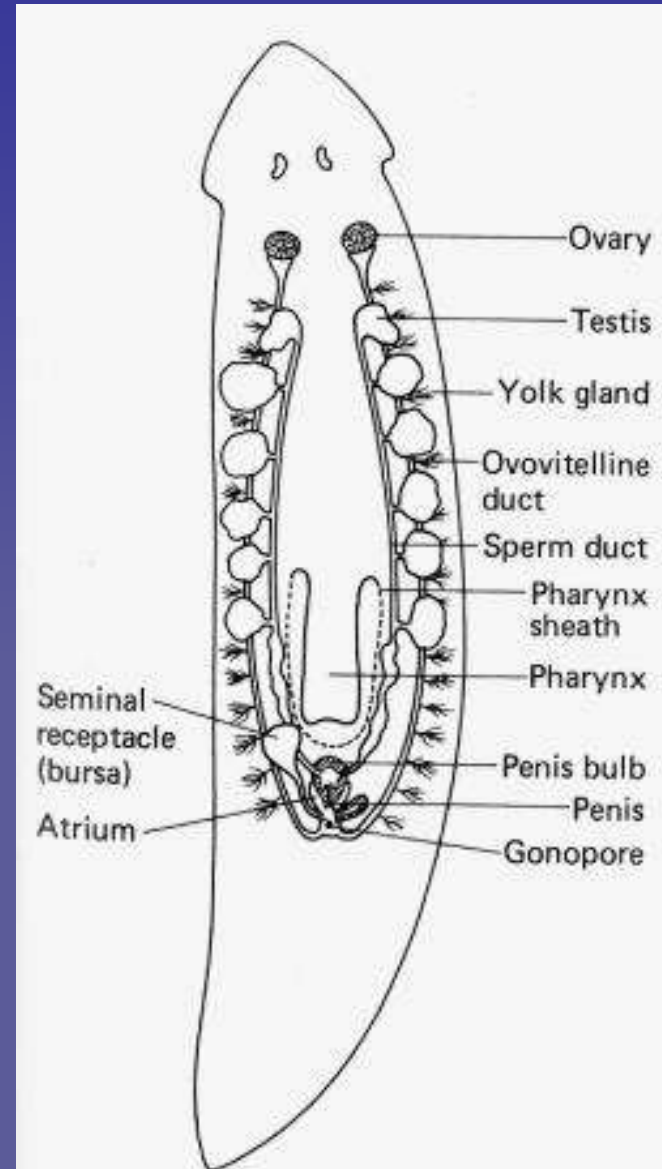
Plathelminthes = ploštěnci

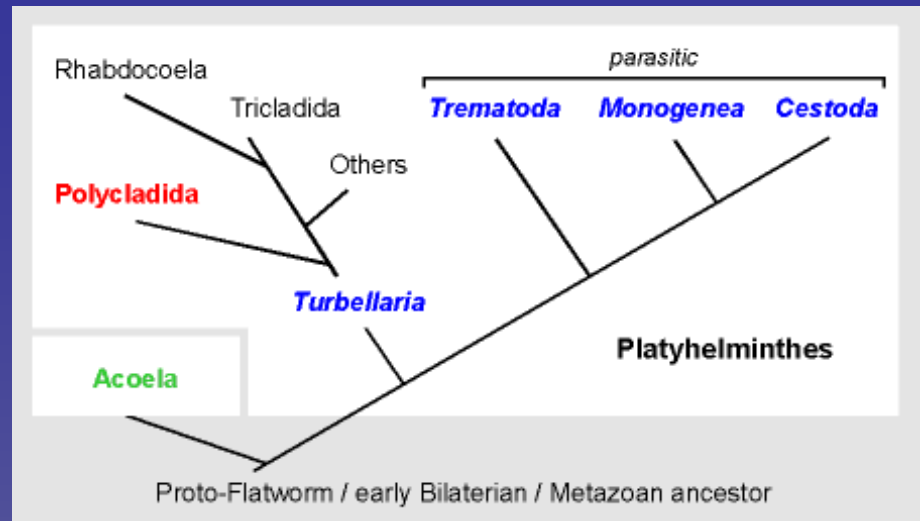
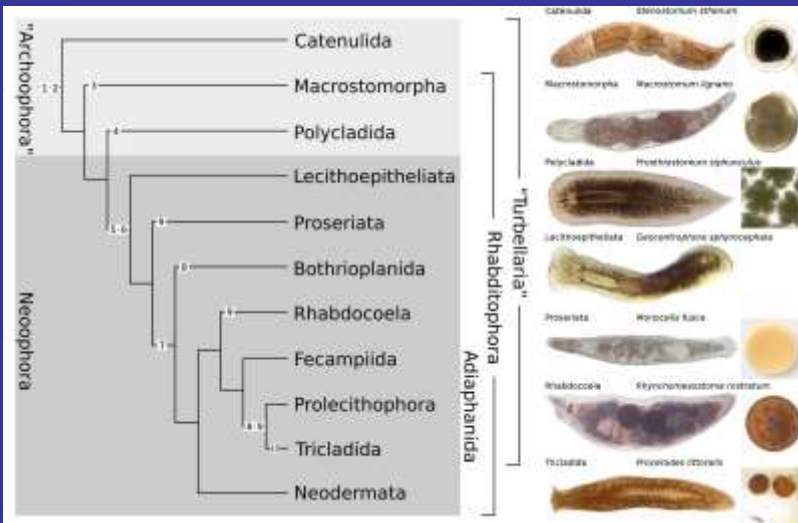
- Bilaterálně souměrní
- Bez pravé tělní dutiny
 - Mesenchym
- Bez C.S. a D.S.
- T.S. většinou slepá
- Protonefridie
- Slabá cefalizace



Platyhelminthes - flatworms

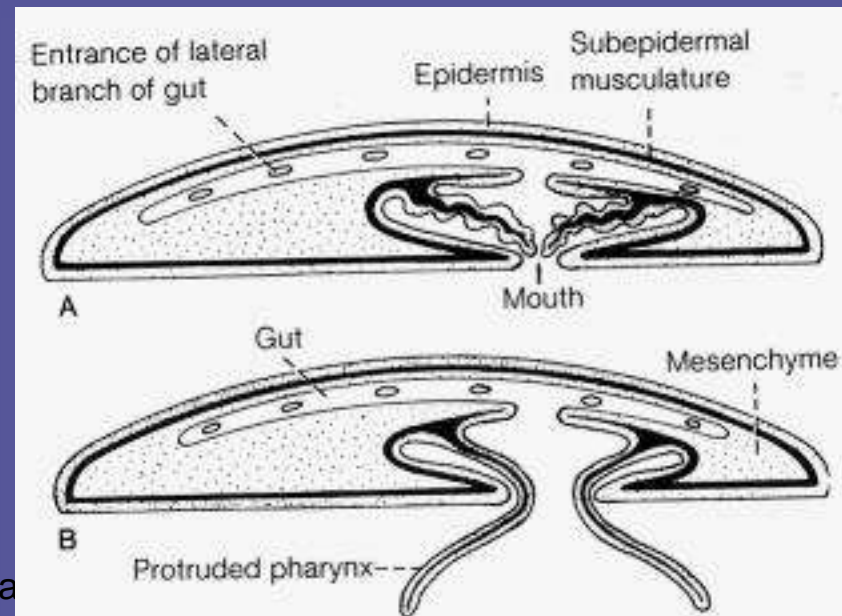
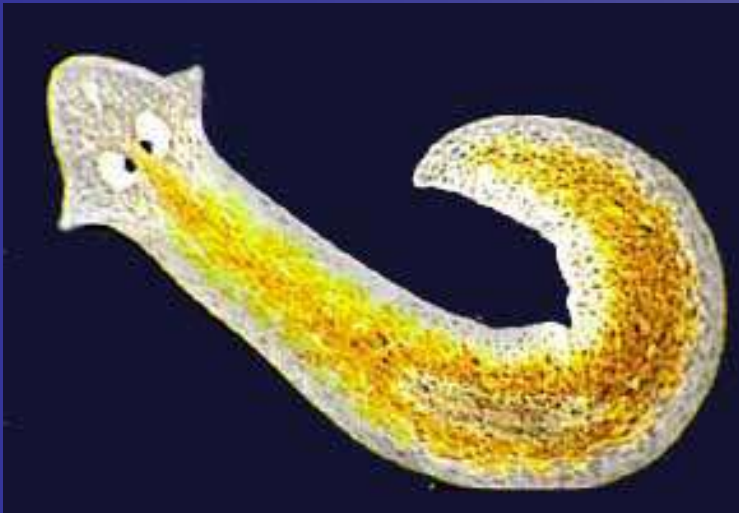
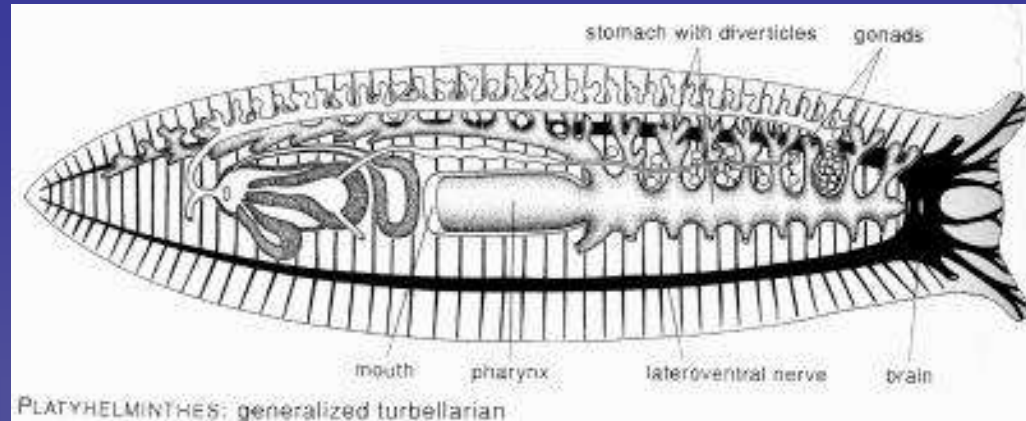
- Rozmnožování
 - simultánní hermafrodité (i gonochoristé)
 - Vitellaria (žloutek) a germaria (vajíčka)
 - Testes
 - nepohlavní
 - paratomie
 - Larvy parazitů





Tricladida - ploštěnky

- Trávicí soustava slepá
 - Ústa na spodní straně
 - Vychlipitelný hltan
 - Rozvětvená
- Nervová soustava žebříčková
- Oči



- Ploštěnka potoční
– *Dugesia gonocephala*

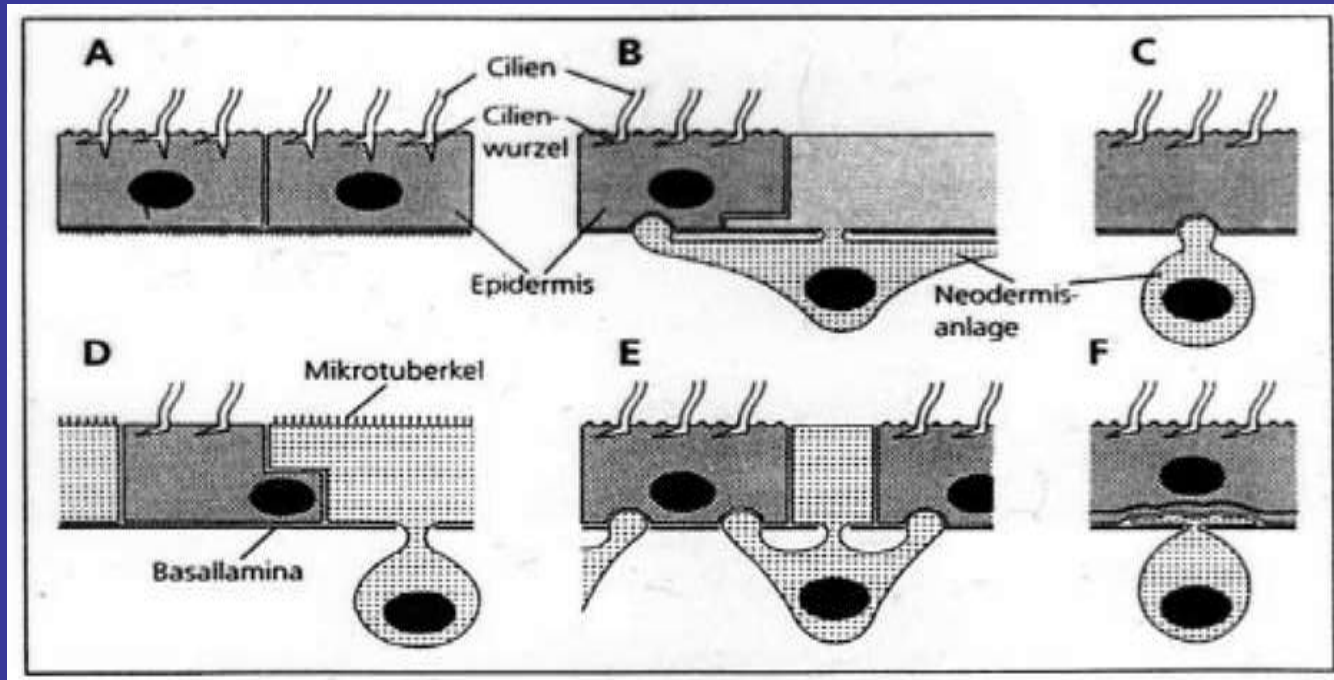


- Ploštěnka mléčná
– *Dendrocoelum lacteum*



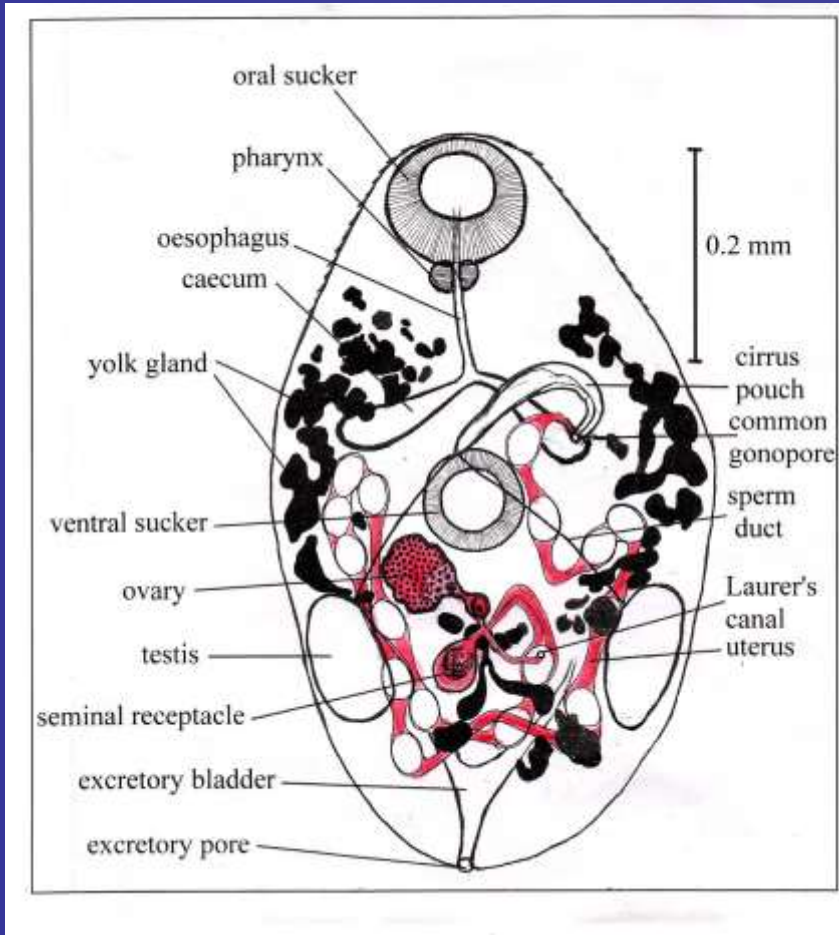
Neodermata

- Neodermis
- Paraziti



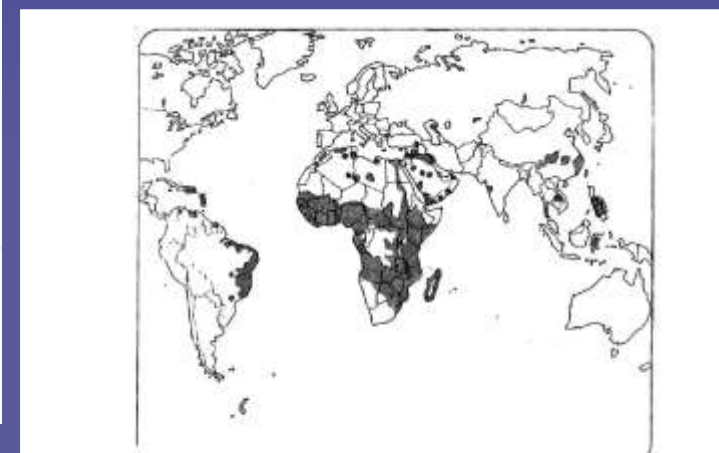
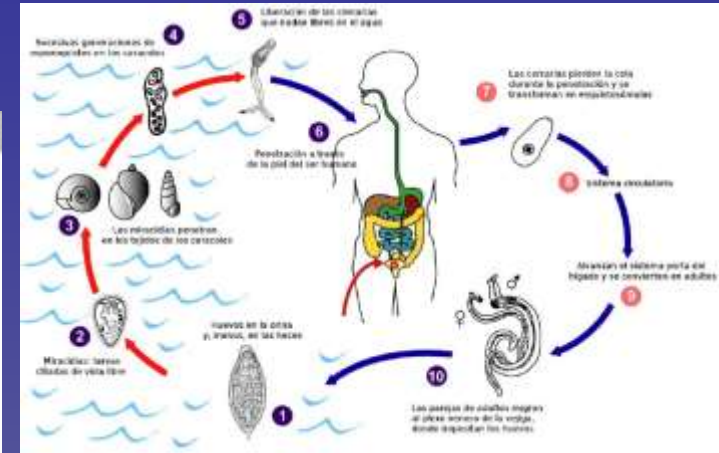
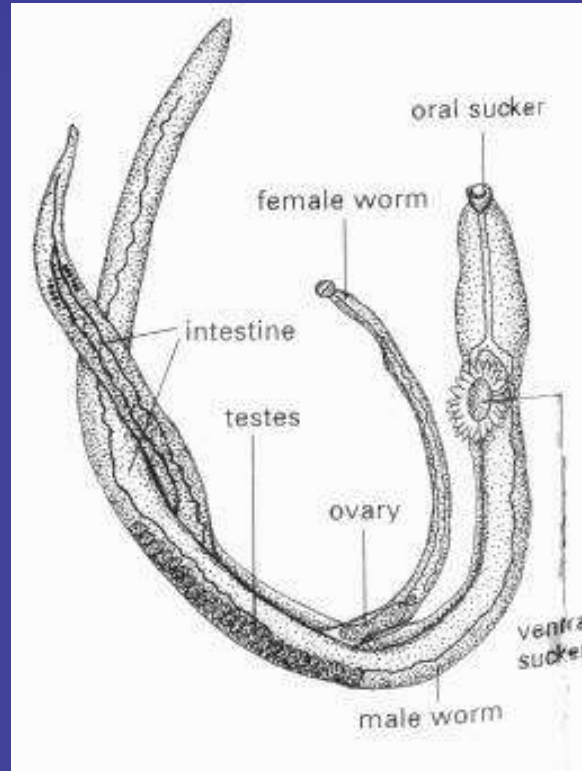
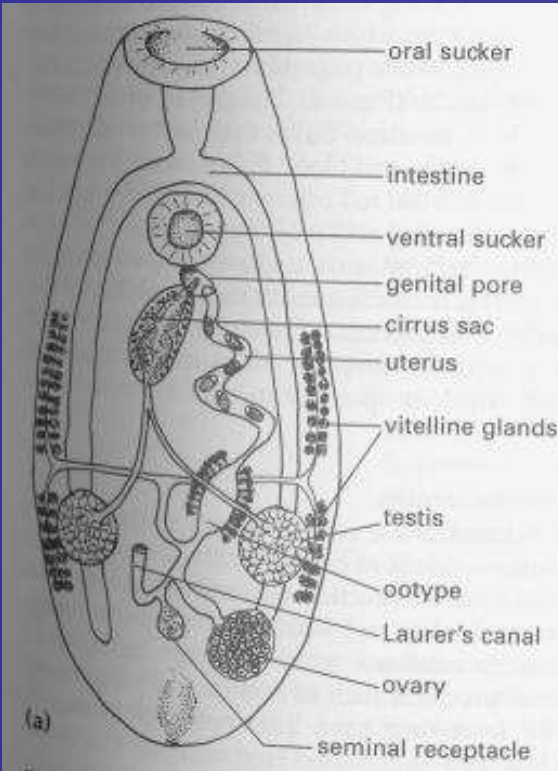
Trematoda (Digenea) = motolice

- Nejčastěji ústní a břišní přísavka
- Endoparaziti



Trematoda (Digenea) = motolice

- Hermafrodité
- gonochoristé - *Schistosoma*



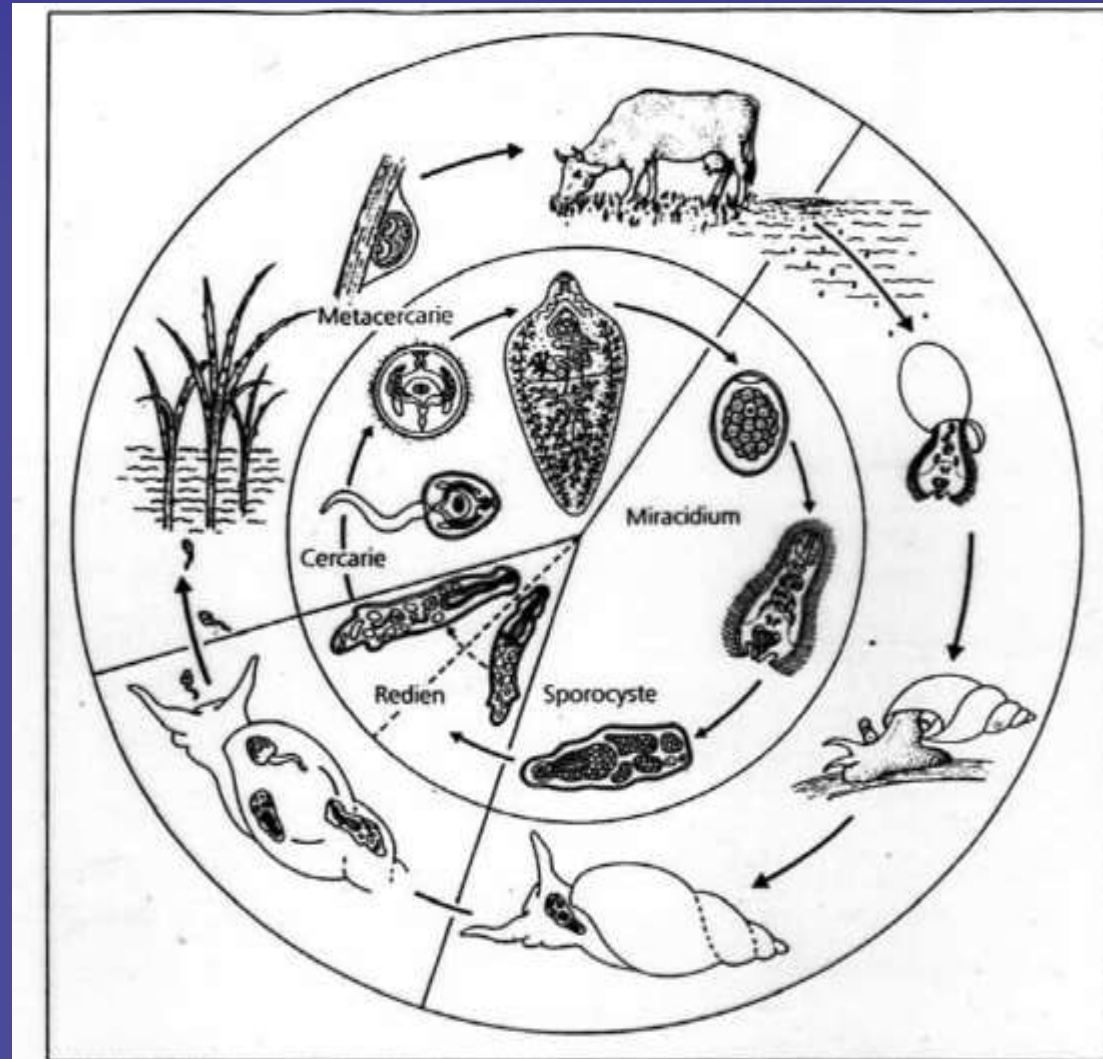
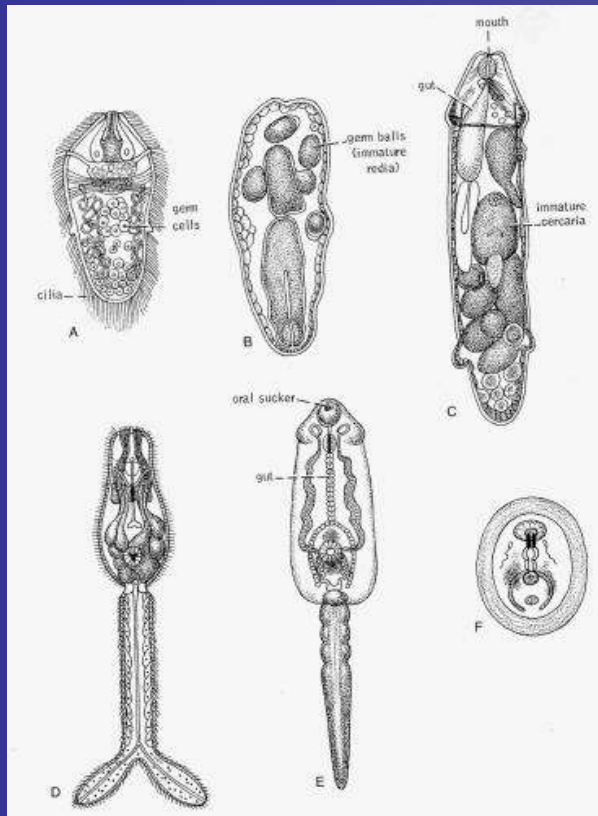
Trematoda (Digenea) = motolice

- Stádia - až 4 hostitelé!!!
 - miracidium
 - sporocysta
 - redie
 - cercarie
 - dospělá

Fasciola hepatica



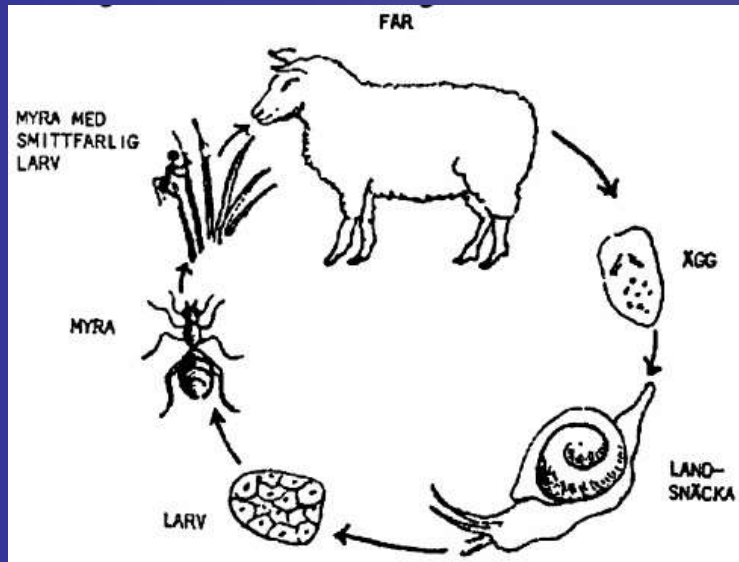
Motolice jaterní



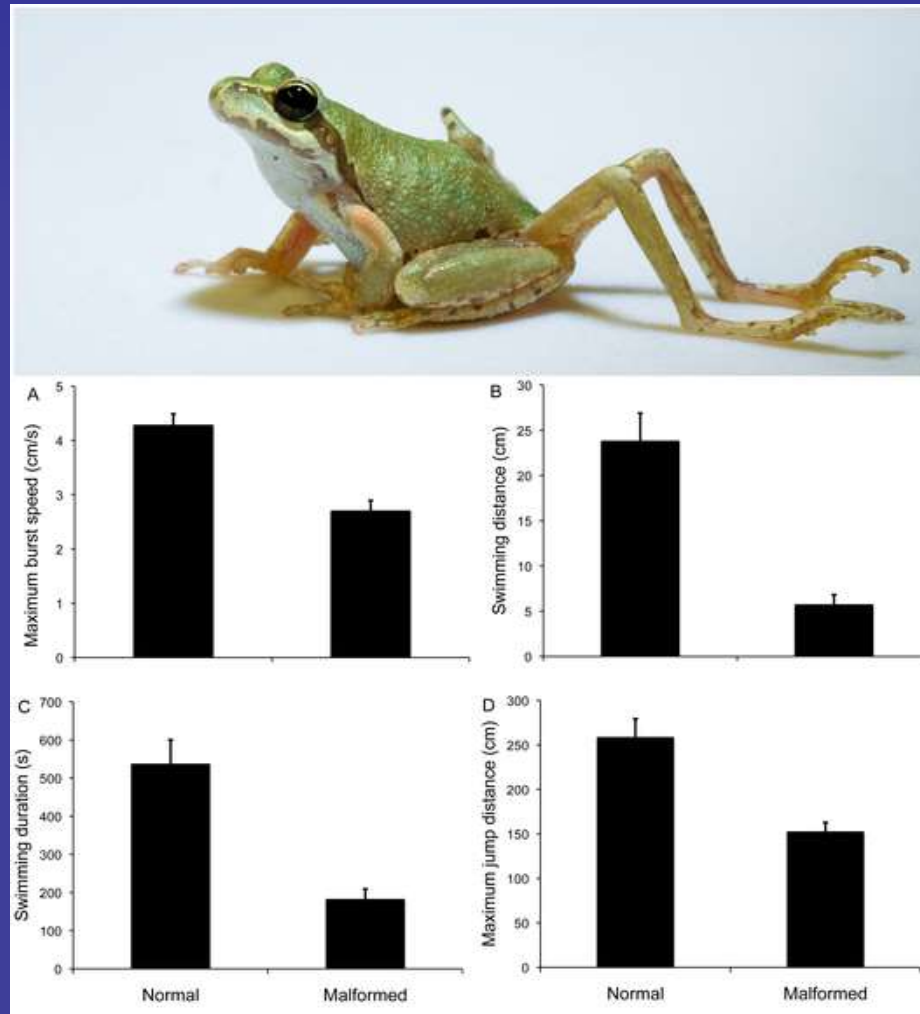
Trematoda (Digenea) = motolice

- Manipulace hostitele

Motolice kopinatá



- Figure 1. Effects of limbs malformations on the locomotory performance of Pacific chorus frogs (*P. regilla*) in laboratory trials.

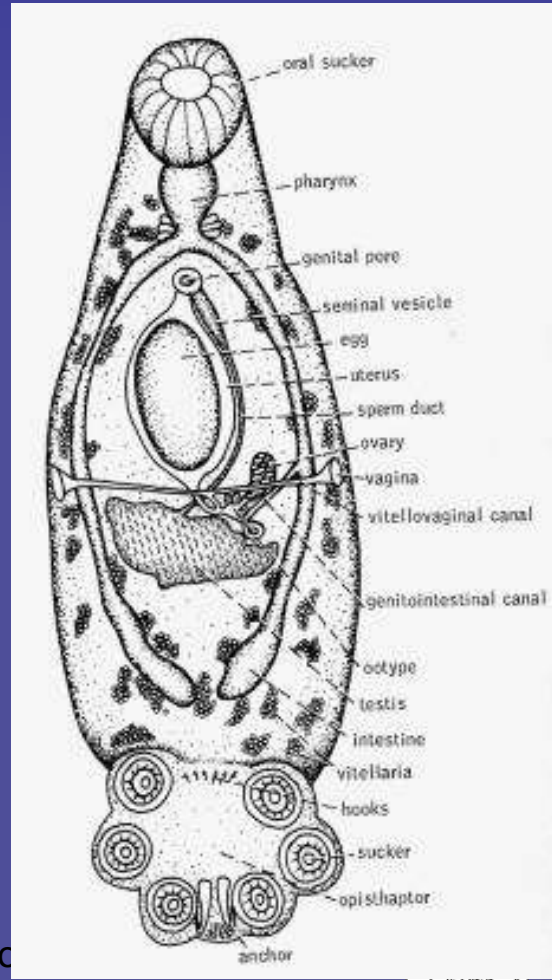
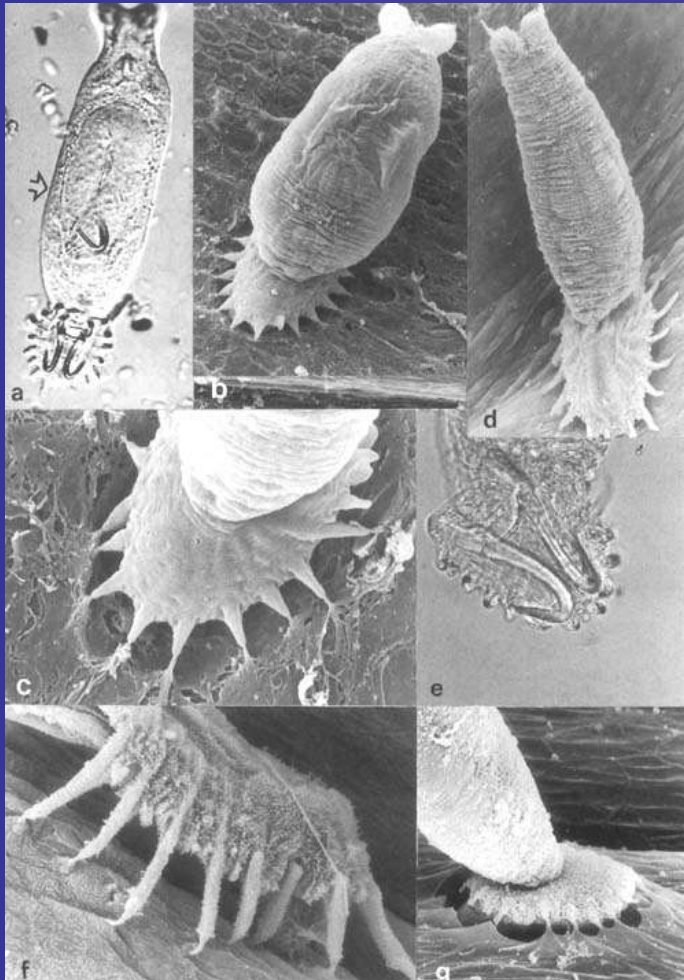


Goodman BA, Johnson PTJ (2011) Disease and the Extended Phenotype: Parasites Control Host Performance and Survival through Induced Changes in Body Plan. *PLoS ONE* 6(5): e20193. doi:10.1371/journal.pone.0020193
<http://www.plosone.org/article/info:doi/10.1371/journal.pone.0020193>



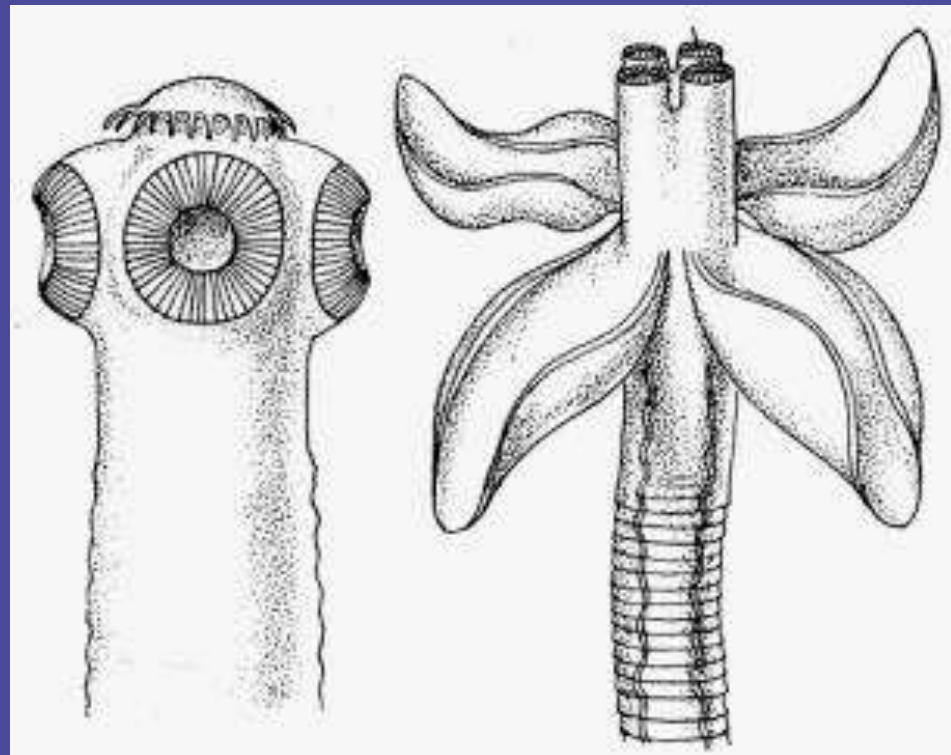
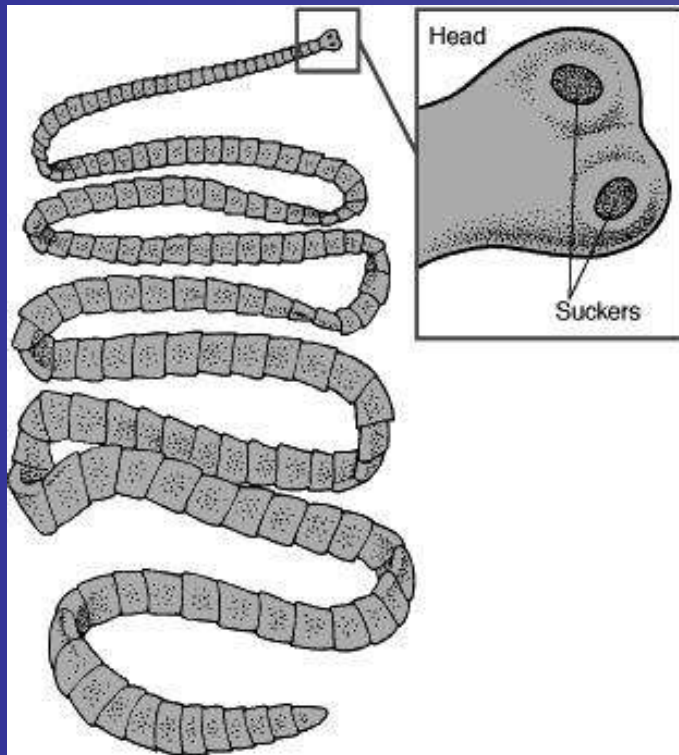
Monogenea = žábrohľísti

- Ectoparasité, na vodných živočišoch
- Jediný hostiteľ
- Opisthaptor



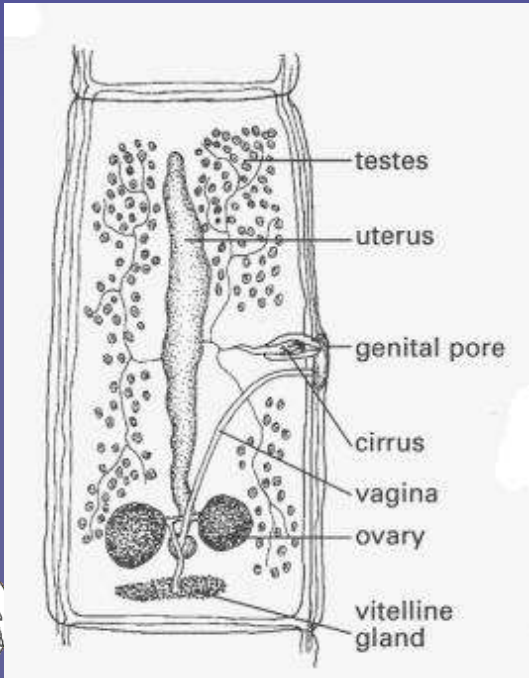
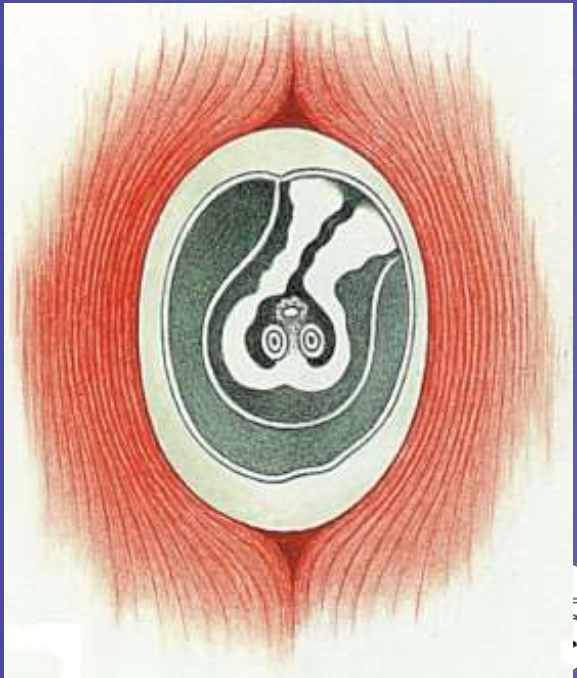
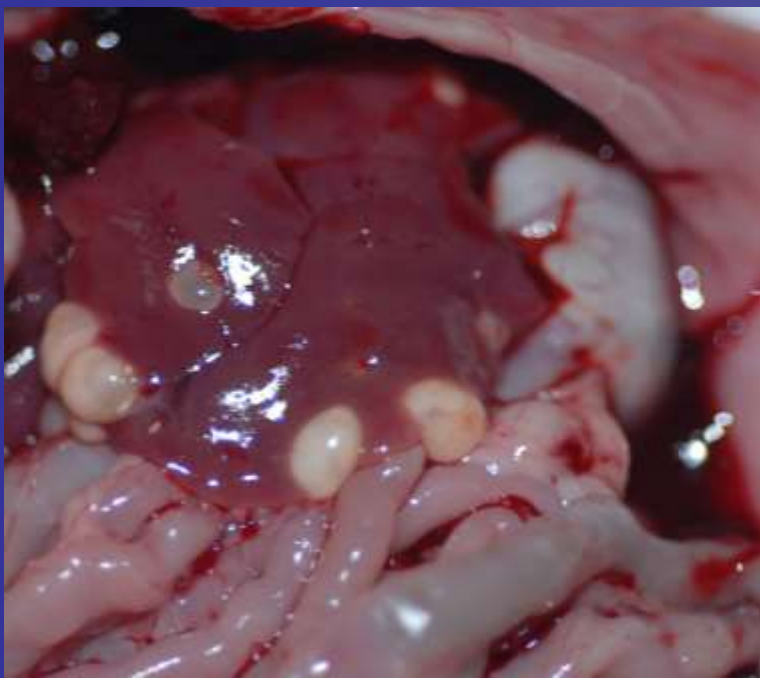
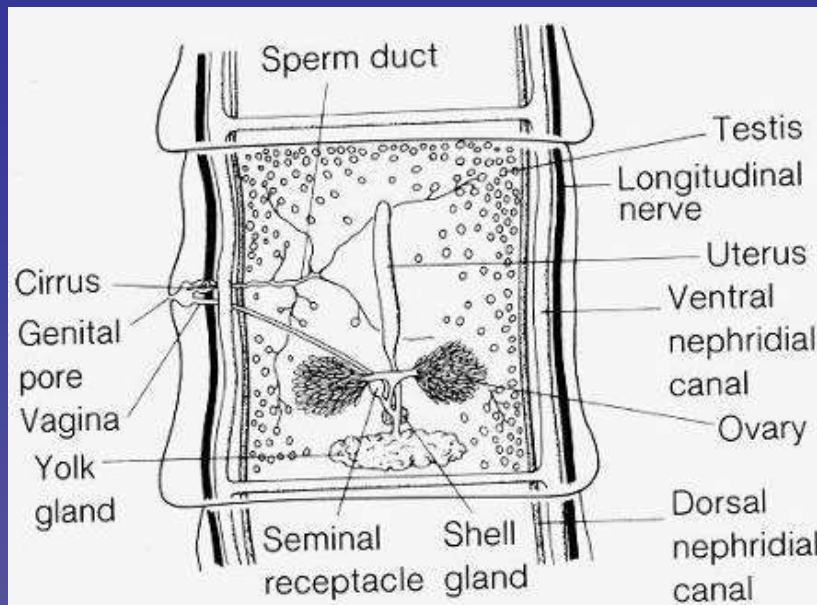
Cestoda = tasemnice

- Vícehostitelské
- Bazální:
- Odvozené: ccolex, proglotidy (strobila)



Cestoda = tasemnice

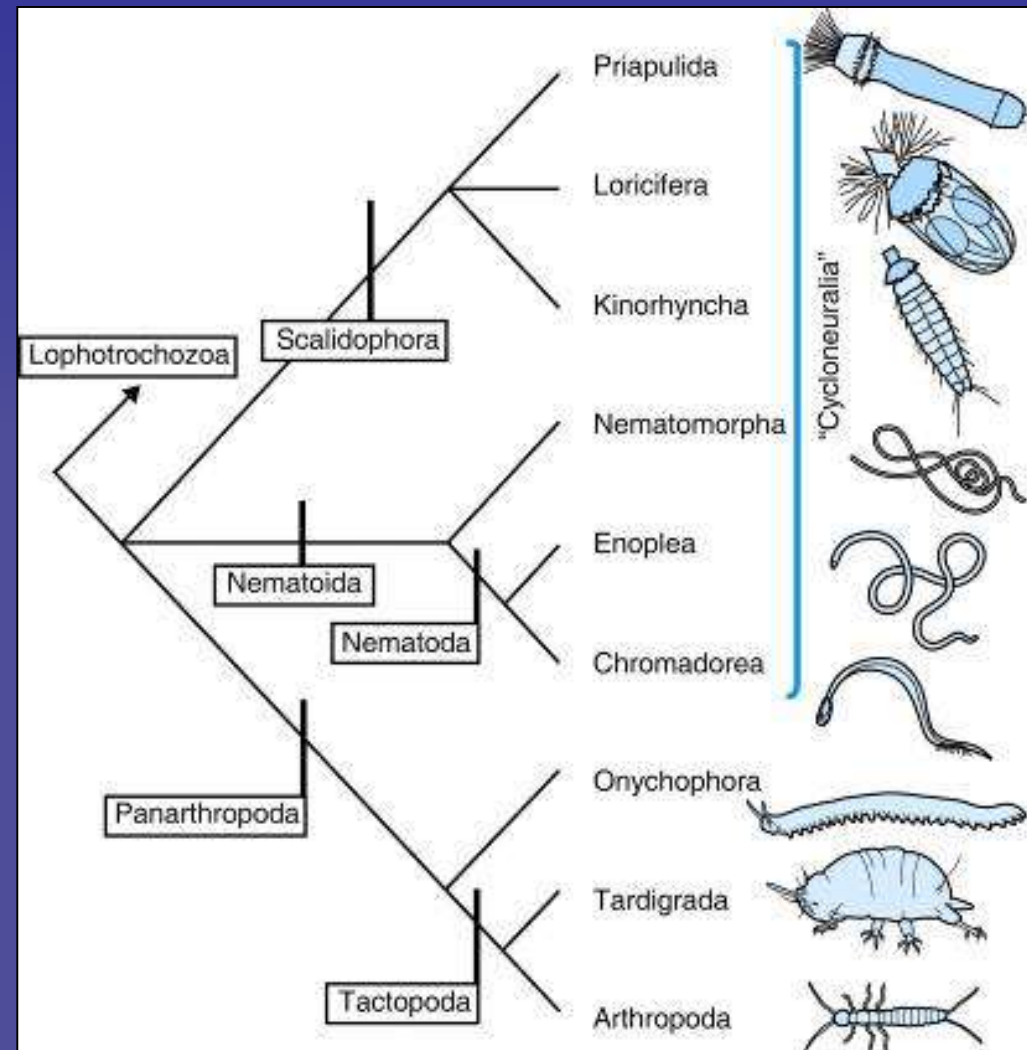
- Endoparazité
 - Larvy ve tkáních
 - Dospělé ve střevu
- Bez trávicí soustavy
- Proterandriční hermafrodité
- Různé typy larev
- Boubel



Ecdysozoa

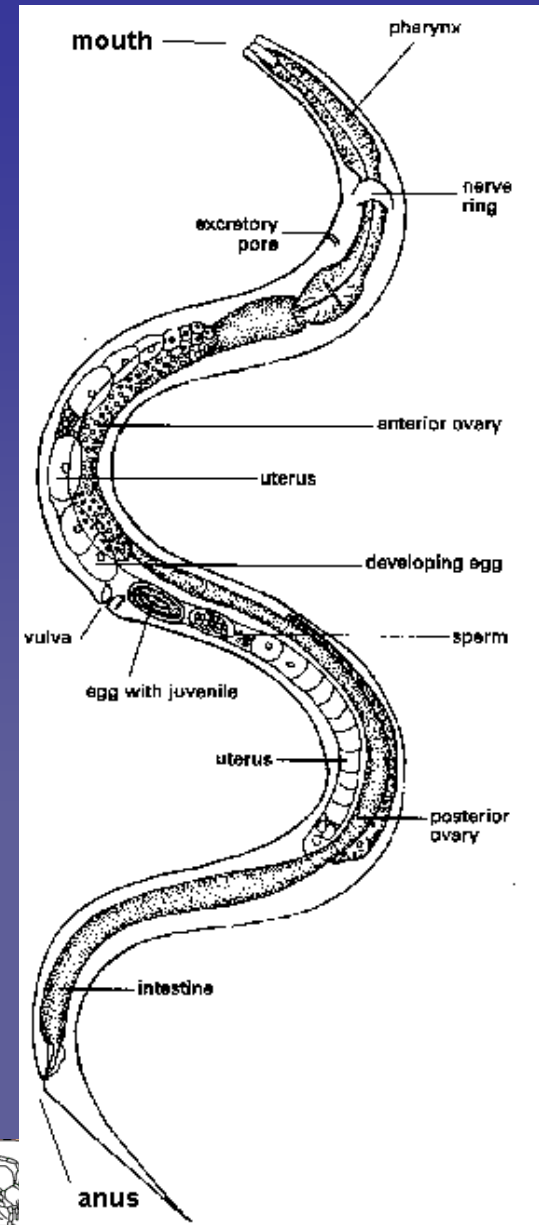
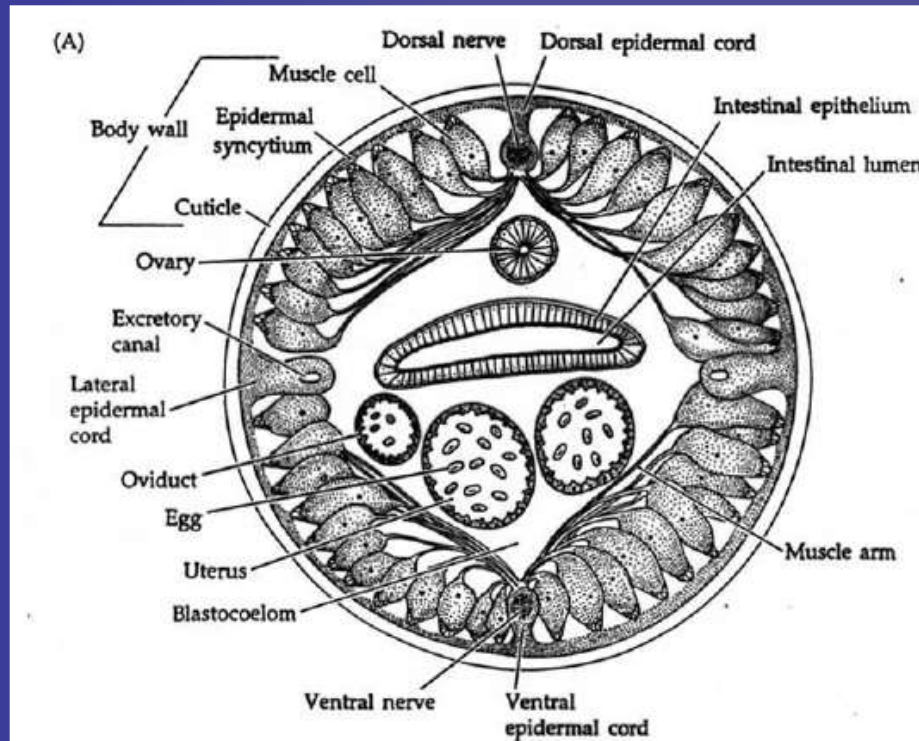
– System

- **Nematoda**
- **Nematomorpha**
- Scalidophora = Cephalorhyncha
 - Priapulida
 - Kniorhyncha
 - Loricifera
- Onychophora
- Tardigrada
- Arthropoda



Nematoda - hlístice

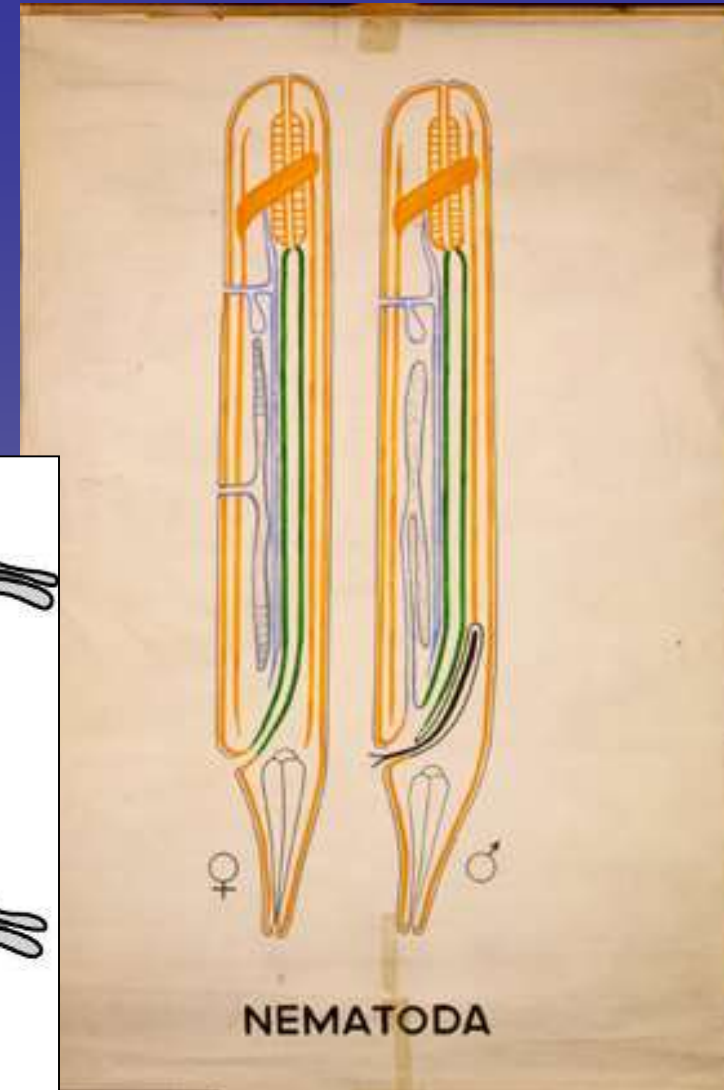
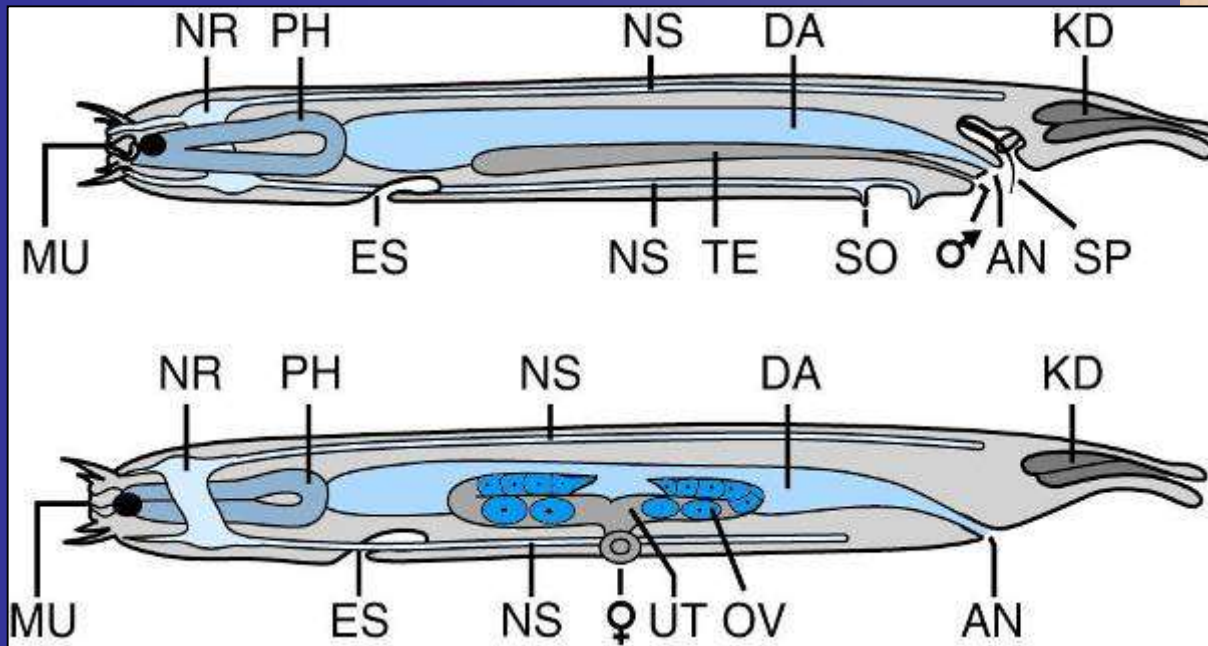
- Kolagenní kutikula
- Podélní svaly
 - 4 segmenty
 - Pouze esovitě kroucení
- Trubicovitá trávicí soustava
 - Vzácně zuby
 - Ocásek



Nematoda

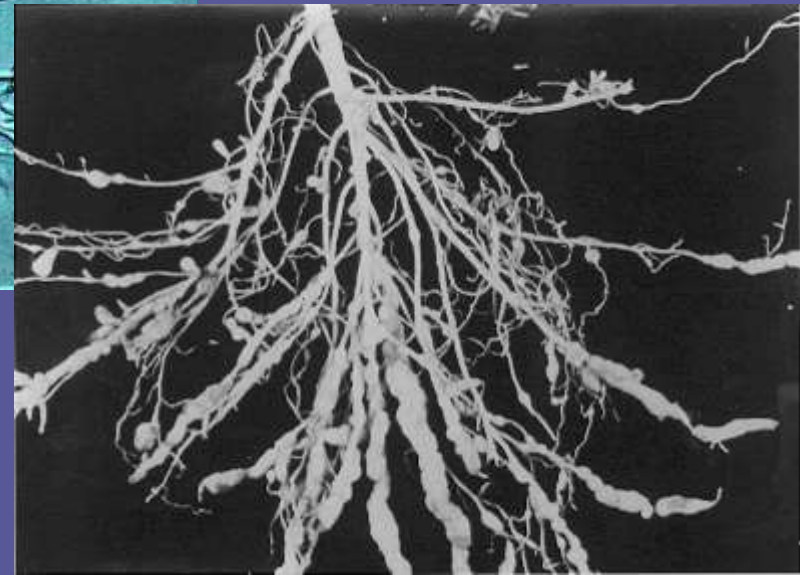
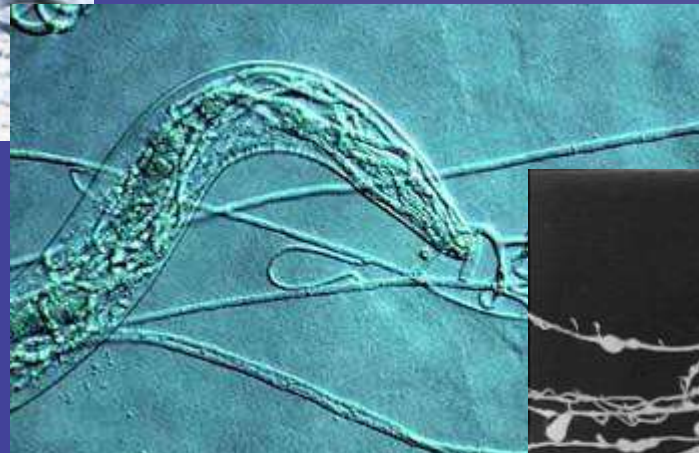
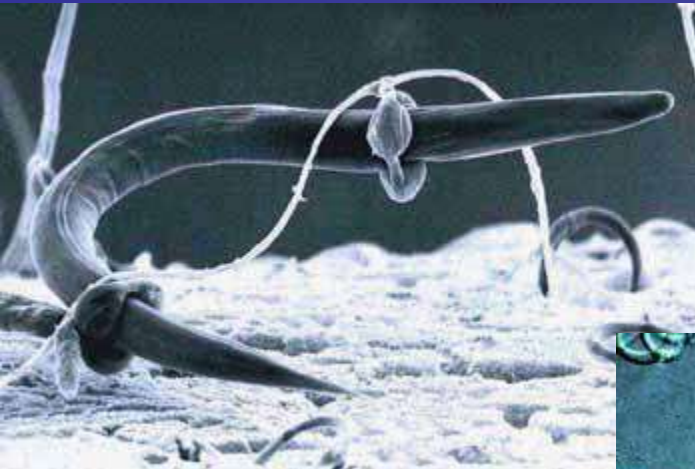
–Gonochoristé

- Samičí otvor uprostřed těla
- Samci s kloakou

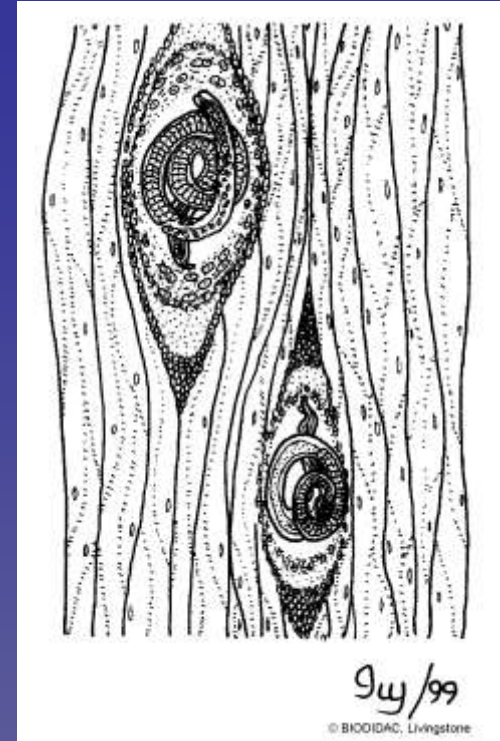


Nematoda

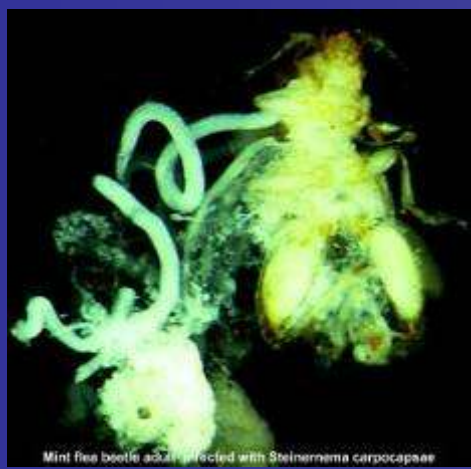
- Půdní
- Vodní
- Parazité



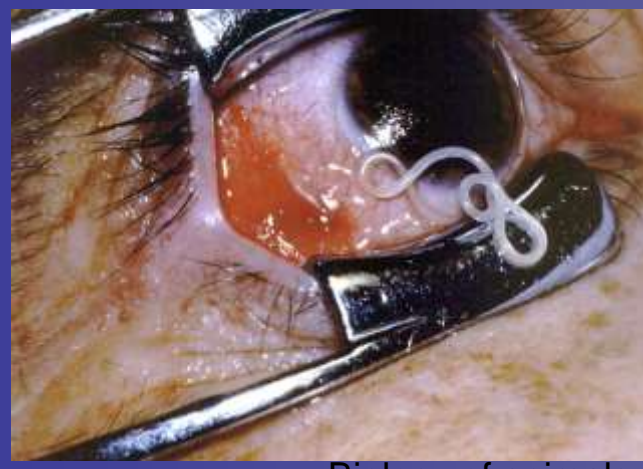
Nematoda



9/11/99
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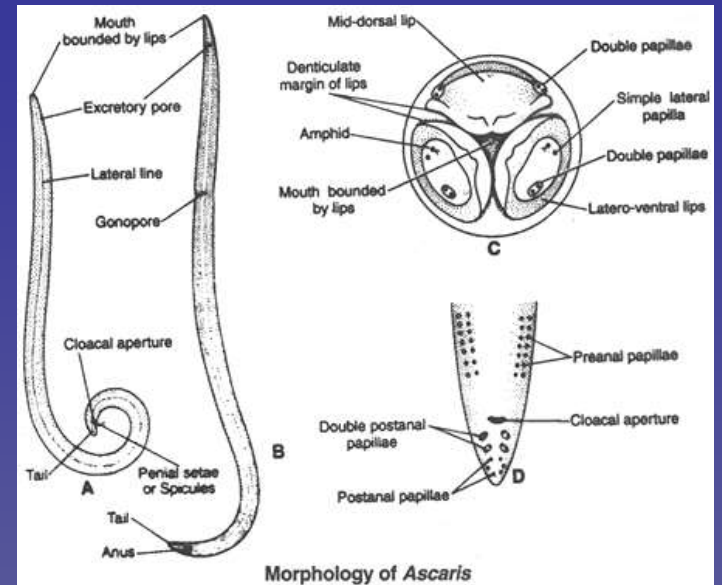
Mint flea beetle adults infested with *Steinernema carpocapsae*



Nematoda

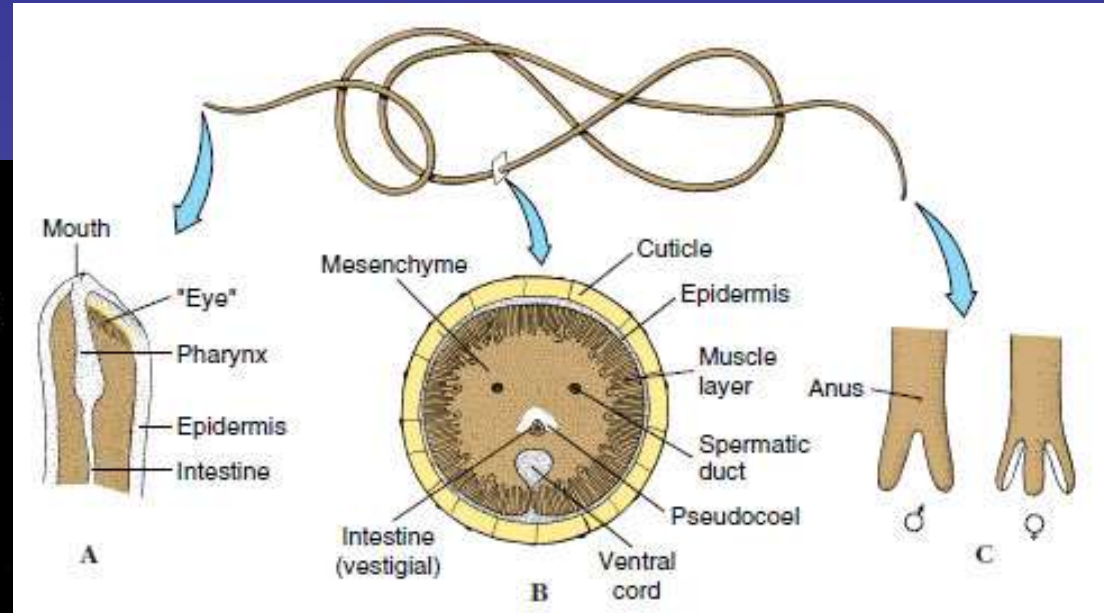
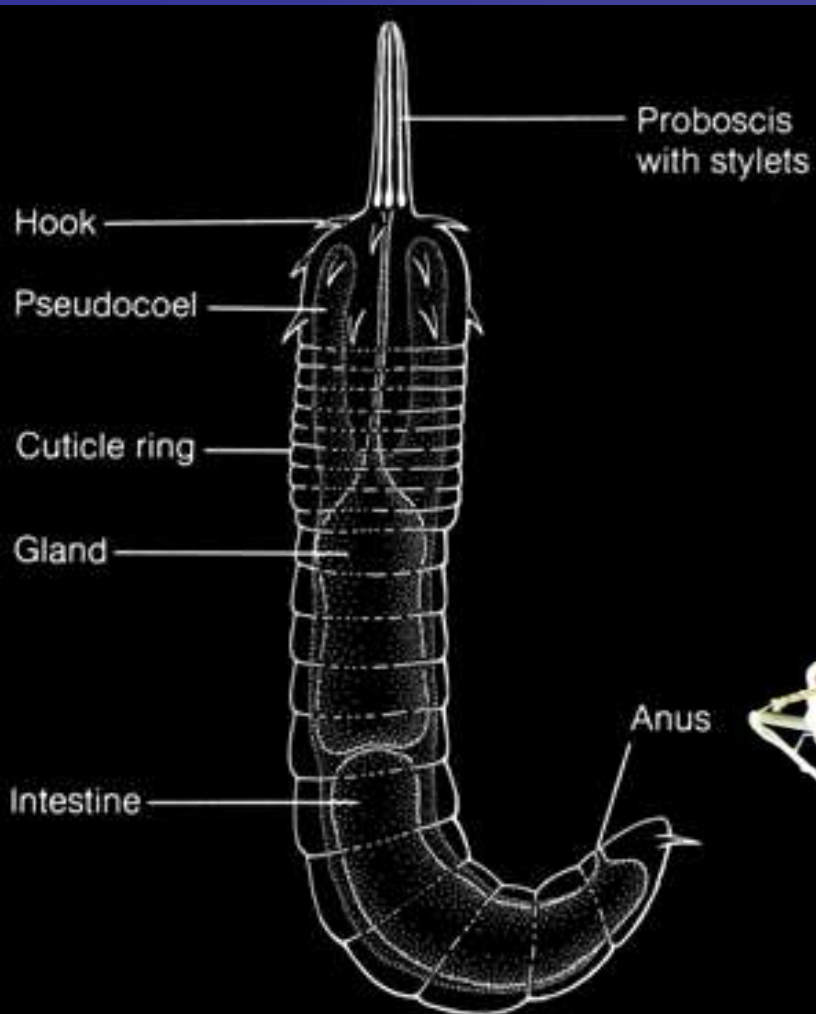
- *Ascaris*
 - 1/6 lidstva
 - hypoxický metabolismus

- *Enterobius*

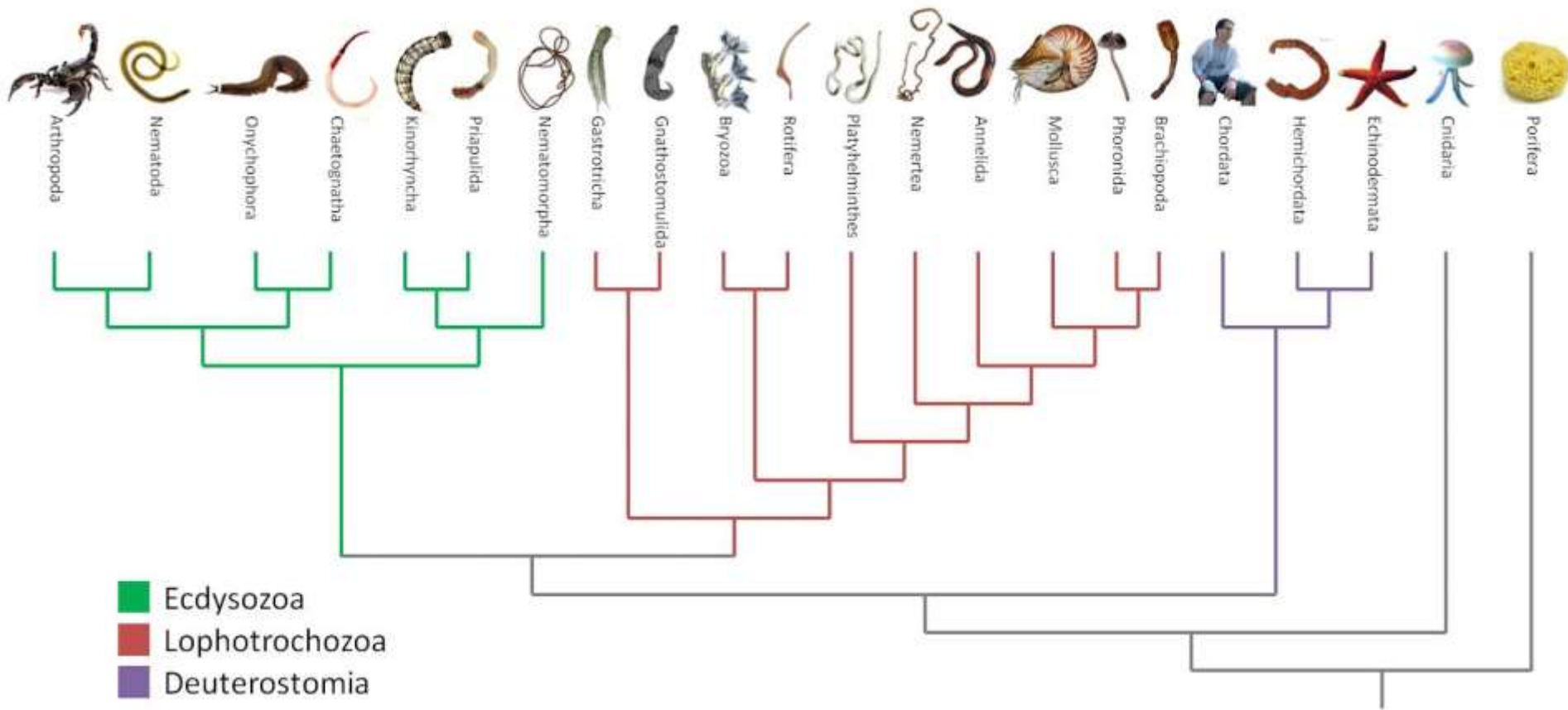


Nematomorpha – strunovci

- Dospělci bez trávicí soustavy
- Laločnatý konec těla
- Parazité členovců - manipulace

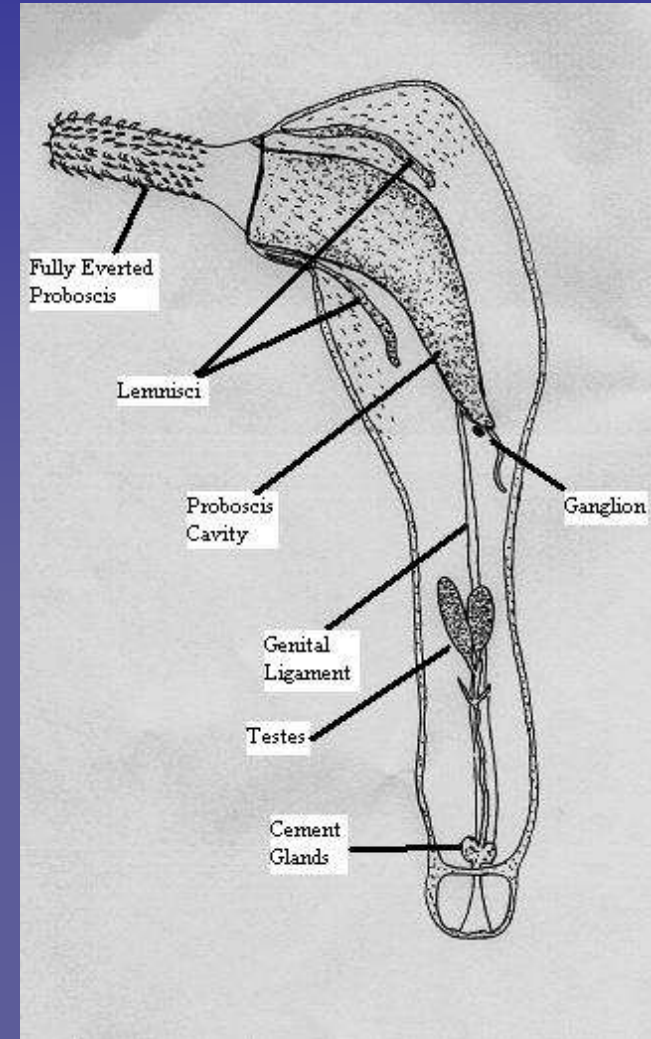
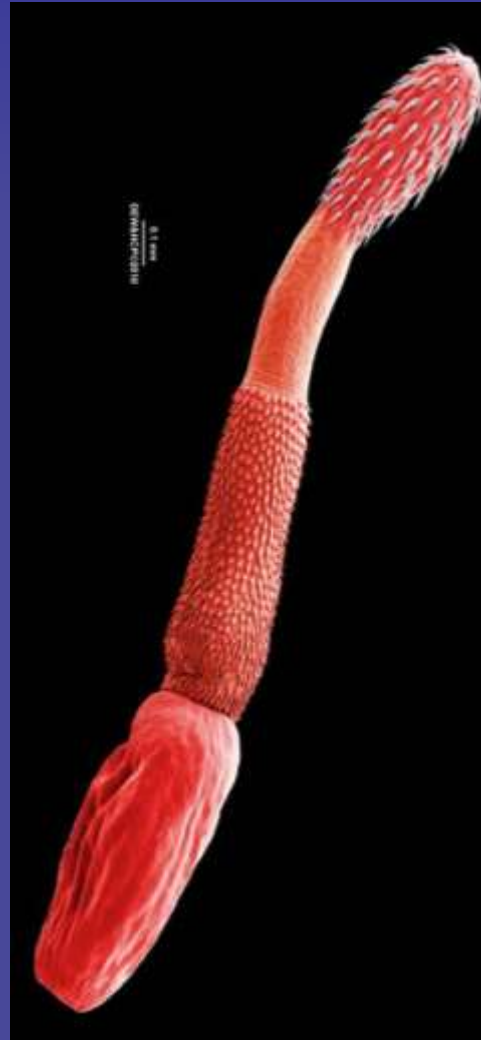


<https://www.youtube.com/watch?v=D7r1S6-op8E>

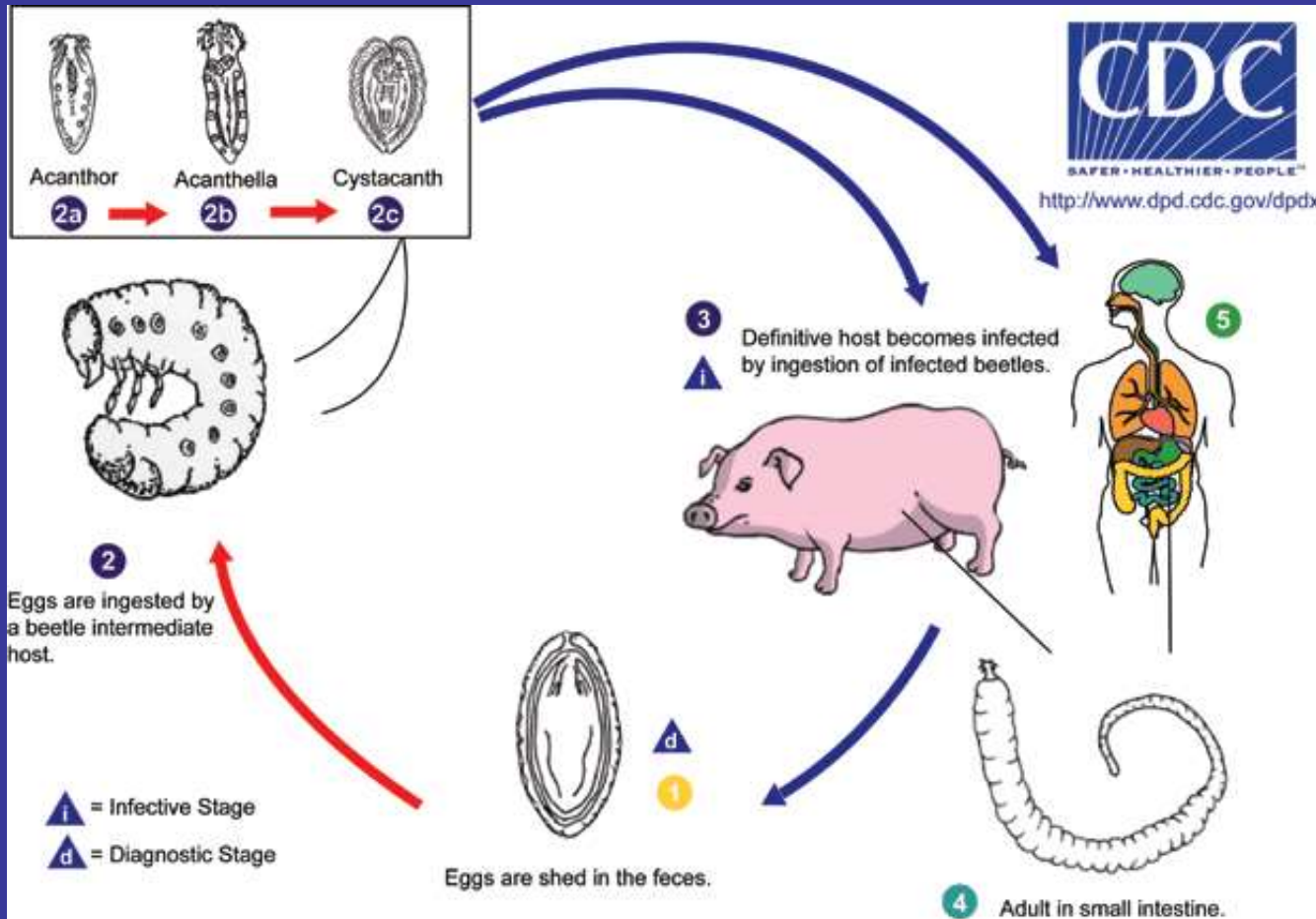


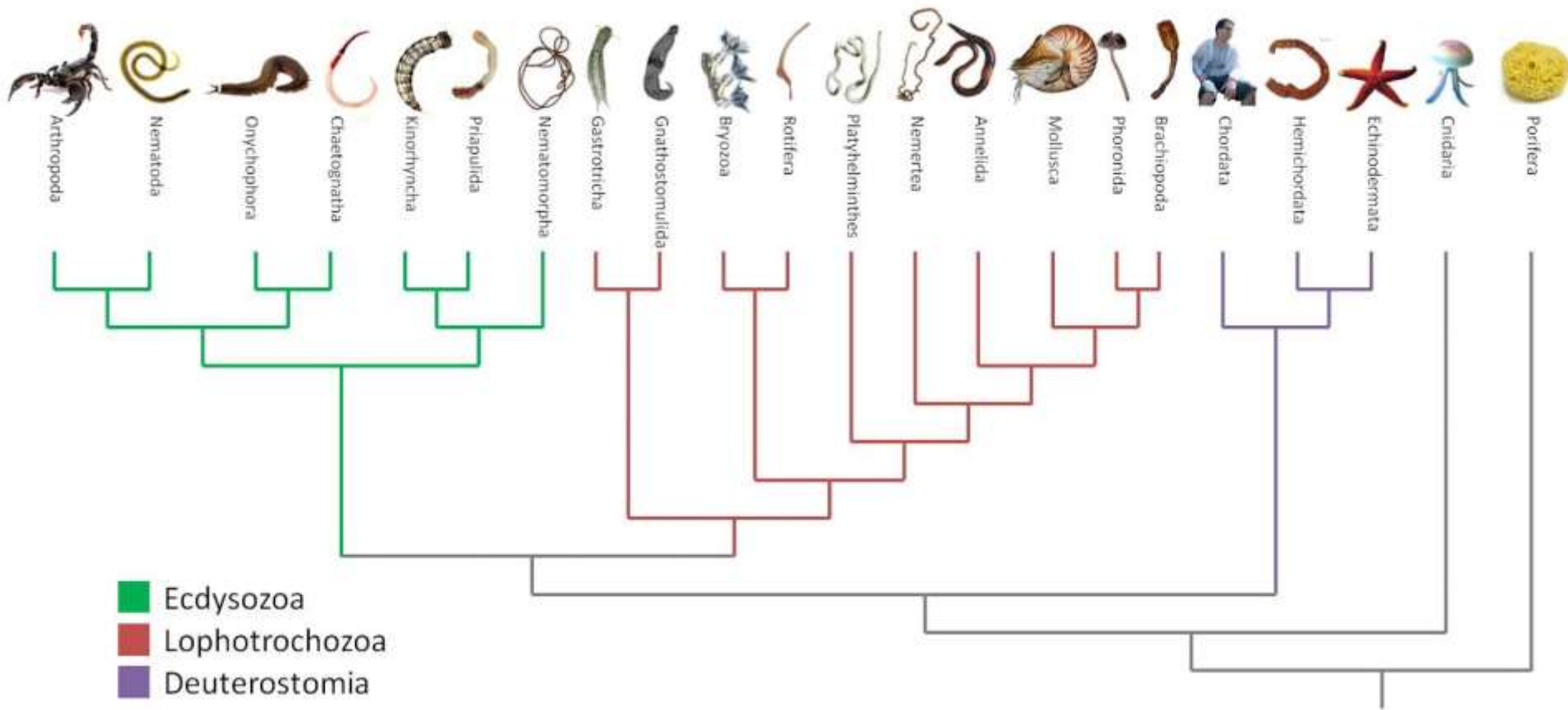
Acanthocephala

- Paraziti
 - Střídání hostitelů
- Syncytiální pokožka
- Otrněný proboscis
 - Uchytení v hostiteli
 - lemnisci
- Ligament – drží orgány
- Příjem potravy povrchem těla
- Gonochoristi



Macracanthorhynchus





Chaetognatha

- Mořští, predátoři, významná součást planktonu
- 0,5 – 10 cm
- Hlava – chitinové ostny, tetrodotoxin (od *Vibria*)
- Trup – 2 membranózní ploutvičky
- Ocas – terminální ploutev
- Ca. 120 druhů, 20 rodů, ale ULTRA hojní
- Hermafrodité, vývoj relativně přímý

