



Univerzitet u Beogradu  
Fakultet veterinarske medicine

*Katedra za biologiju*

Predmet:  
**ZOOLOGIJA**  
2024/2025

Acoelomata. Platyhelminthes and Nemertina  
Pseudocoelomata. Nematoda  
Coelomata. Mollusca, Annelida

# BILATERIA

gde spadaju svi filumi složeniji od  
Coelenterata (**više EUMETAZOA**)

dele se na:

## ACELOMATA

- Platyhelminthes
- Nemertina

## PSEUDOCOELOMATA

- Nematoda
- Rotatoria
- Acanthocephala
- Gastrotricha
- Kinorhyncha
- Nematomorpha
- Entoprocta

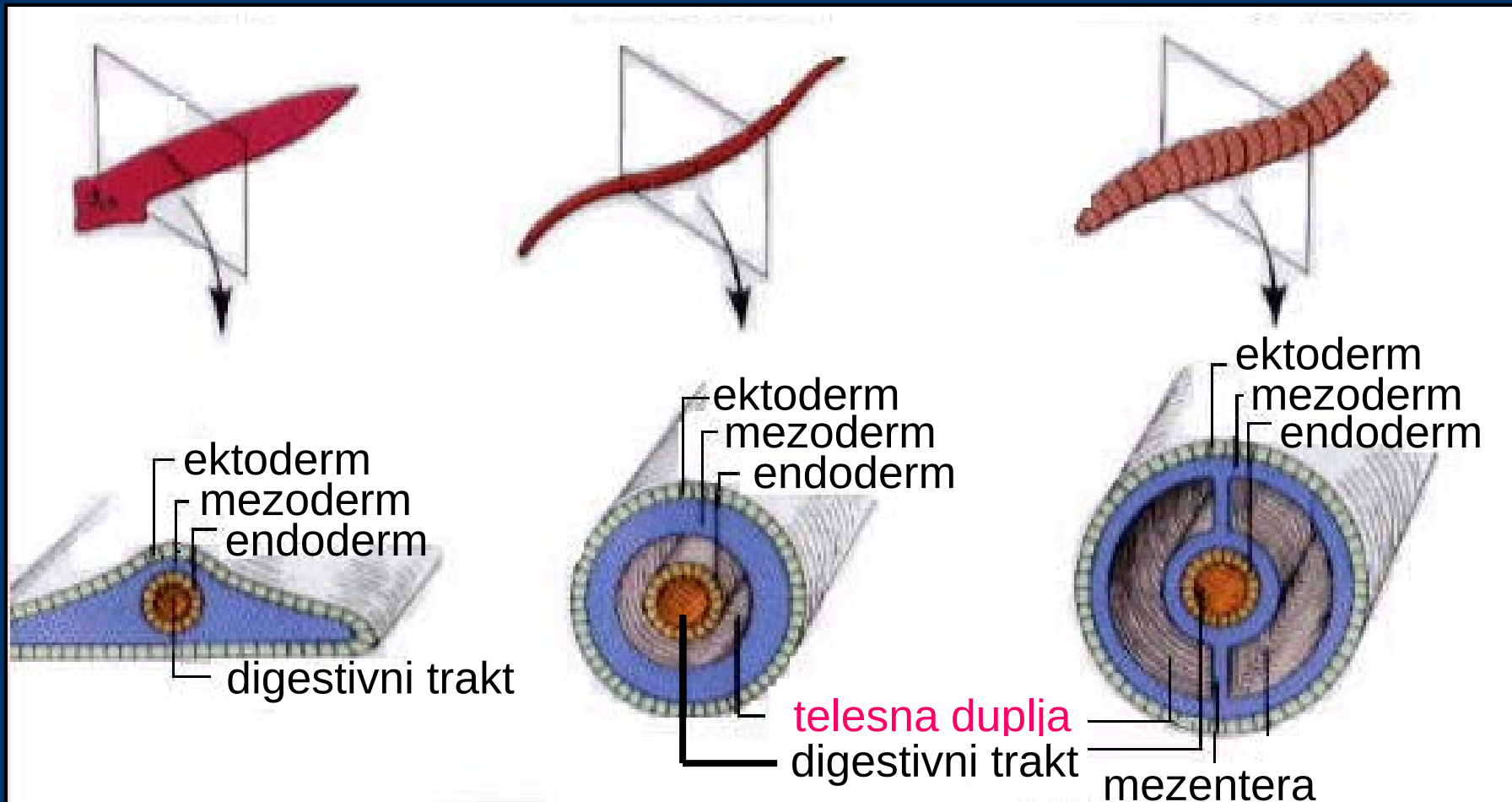
## COELOMATA

- Mollusca
- Annelida
- Arthropoda
- Echinodermata
- Chordata

## ACELOMATA

## PSEUDOCOELOMATA

## COELOMATA



# Phylum: Plathelminthes

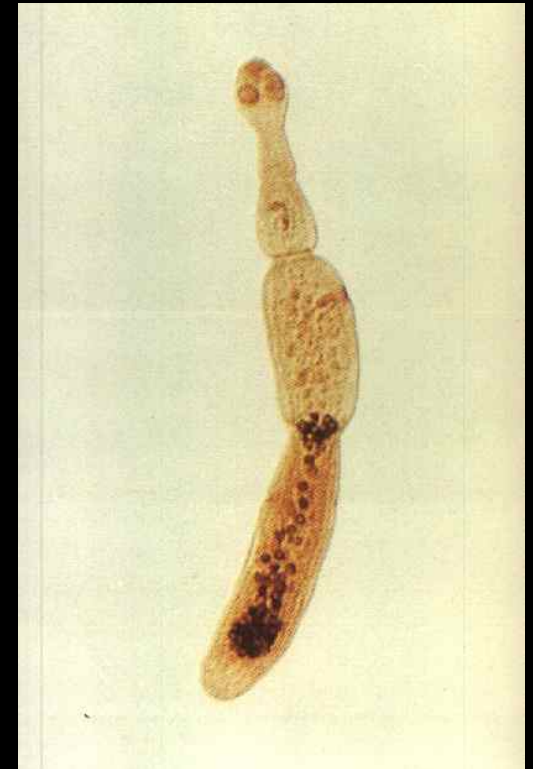
Classis:  
Turbellaria



Classis:  
Trematoda



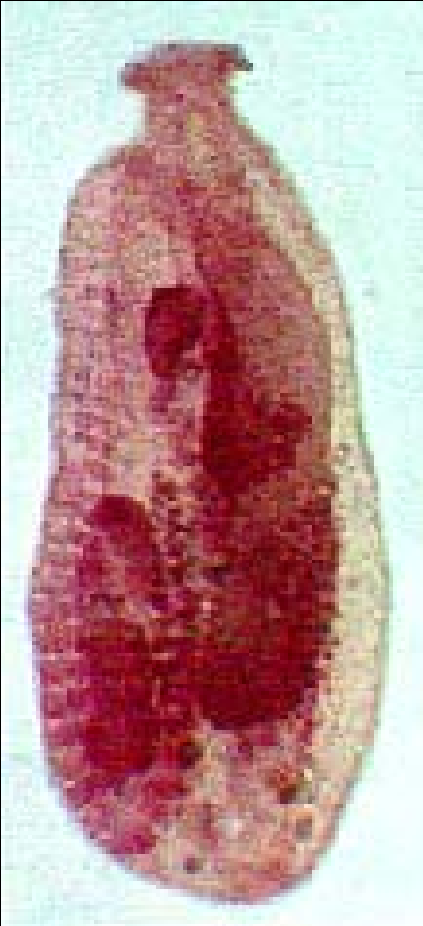
Classis:  
Cestoda



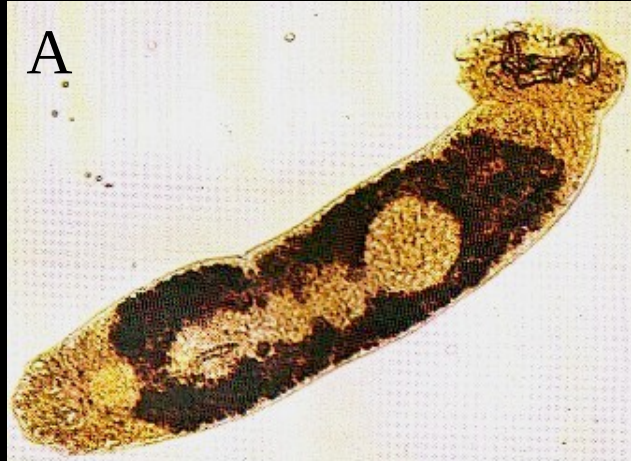
# classis: Trematoda

Ordo: Aspidobothria

Ordo: Monogenea



*Aspidogaster conchicola*

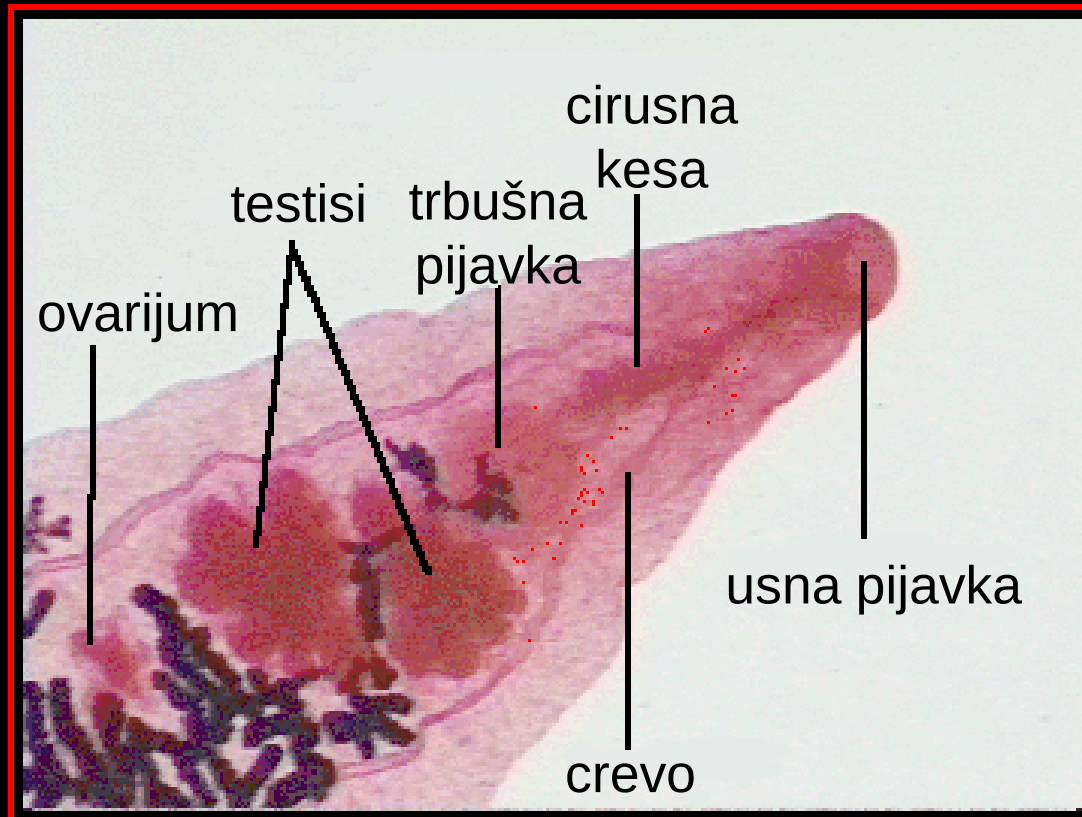


- A. *Dactylogyrus vastator*
- B. *Gyrodactylus elegans*
- C. *Diplozoon paradoxum*

classis: Trematoda  
Ordo: Digenea



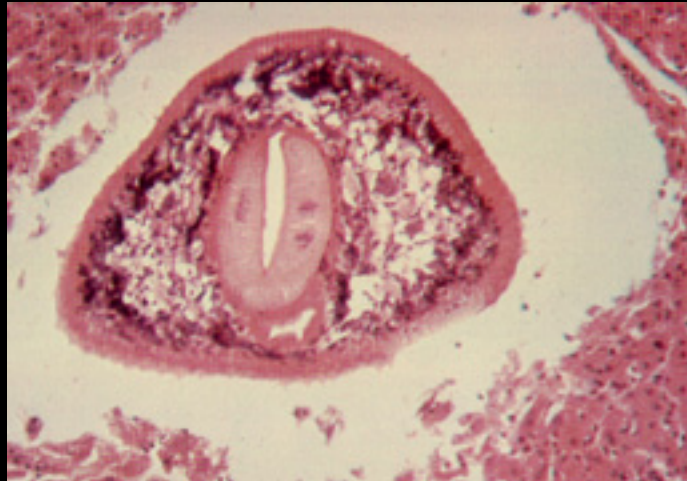
**Mali metilj**  
***Dicrocoelium lanceolatum***



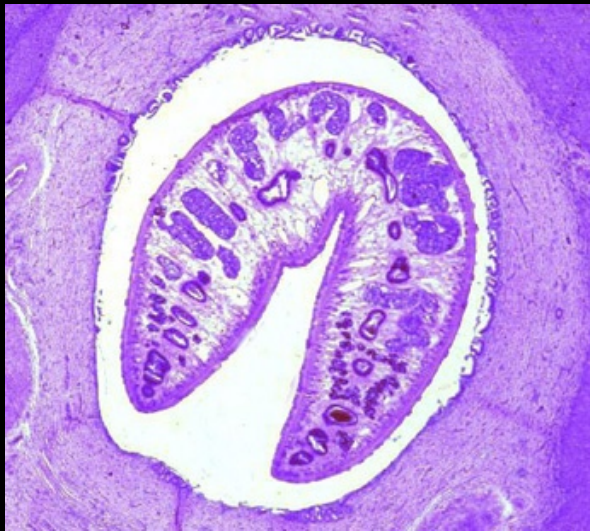
classis: Trematoda  
Ordo: Digenea

1. Adult u žučnom kanalu i
2. u jetri (savijena "U" forma)

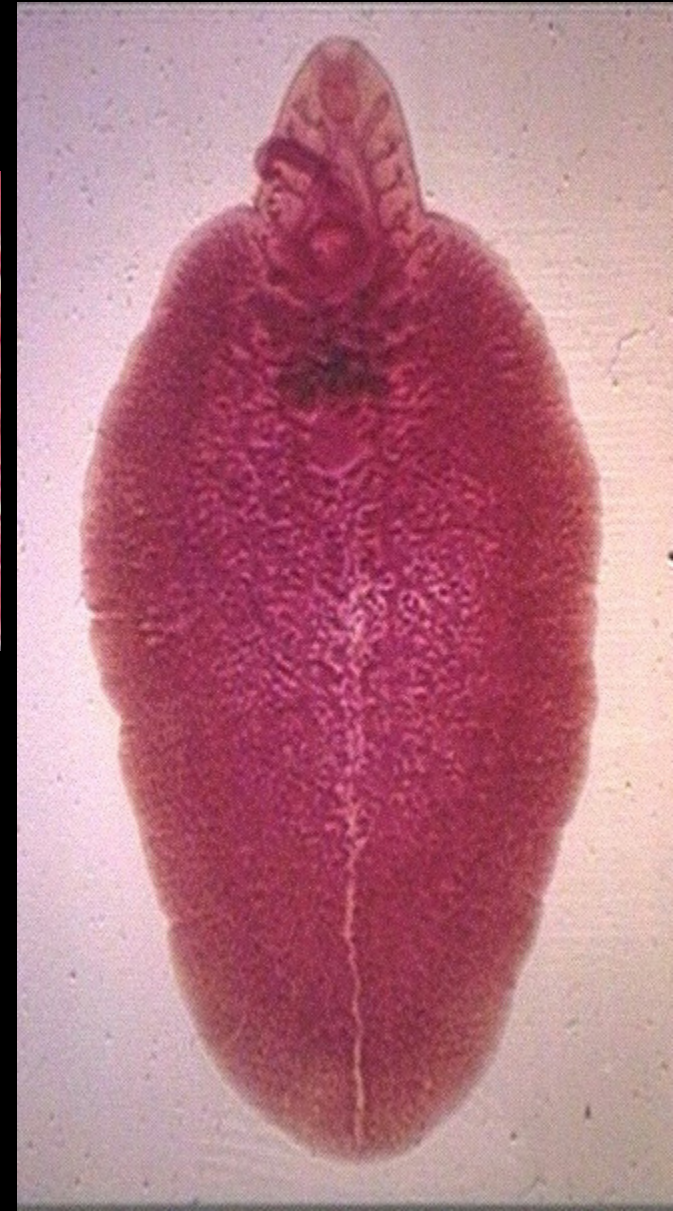
1



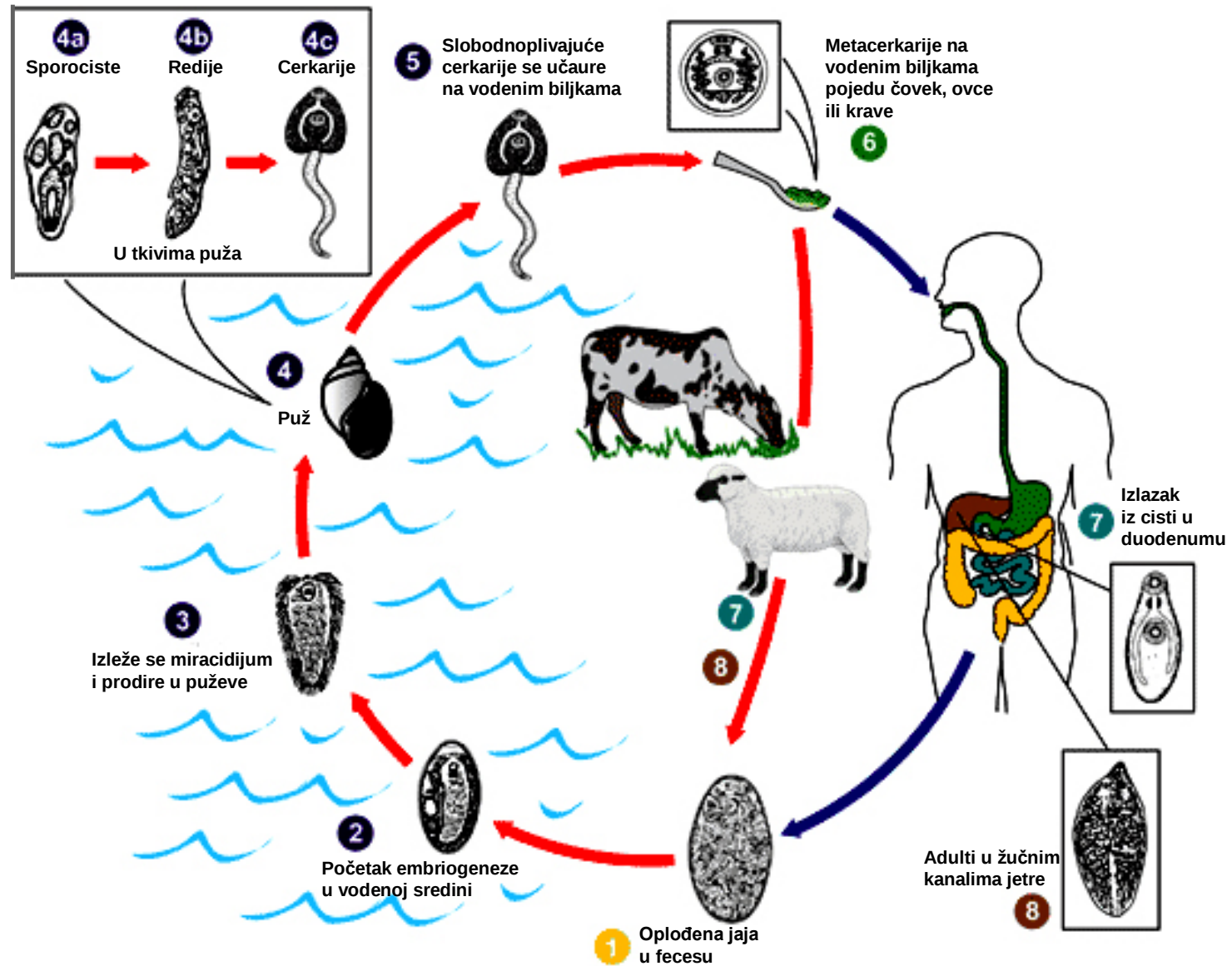
2

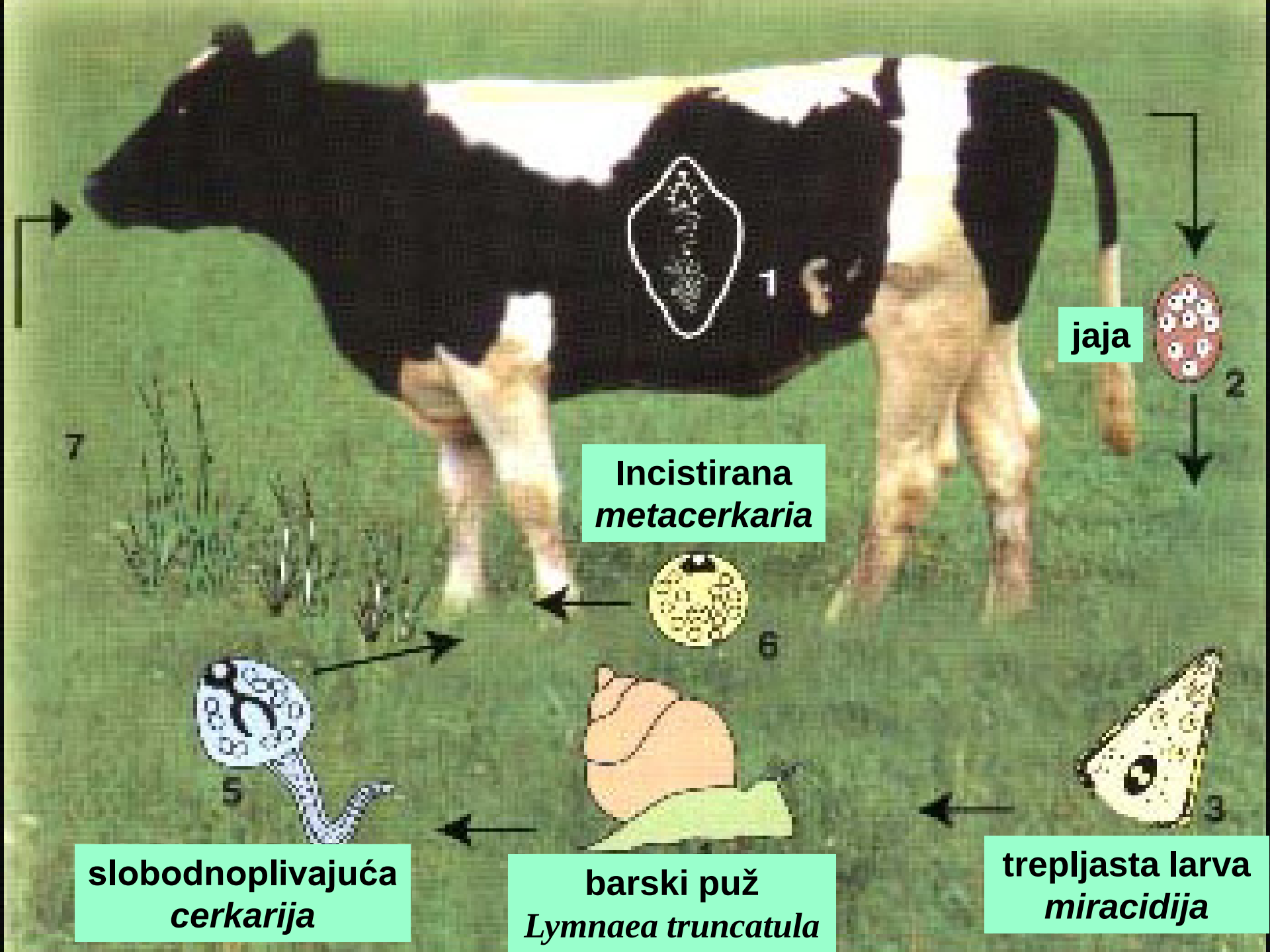


**Veliki metilj**  
*Fasciola hepatica*



# *Fasciola hepatica*





**Incistirana  
metacerkaria**

**jaja**

**2**

**barski puž**  
*Lymnaea truncatula*

**slobodnoplivajuća  
cercarija**

**trepljasta larva  
miracidija**

**7**

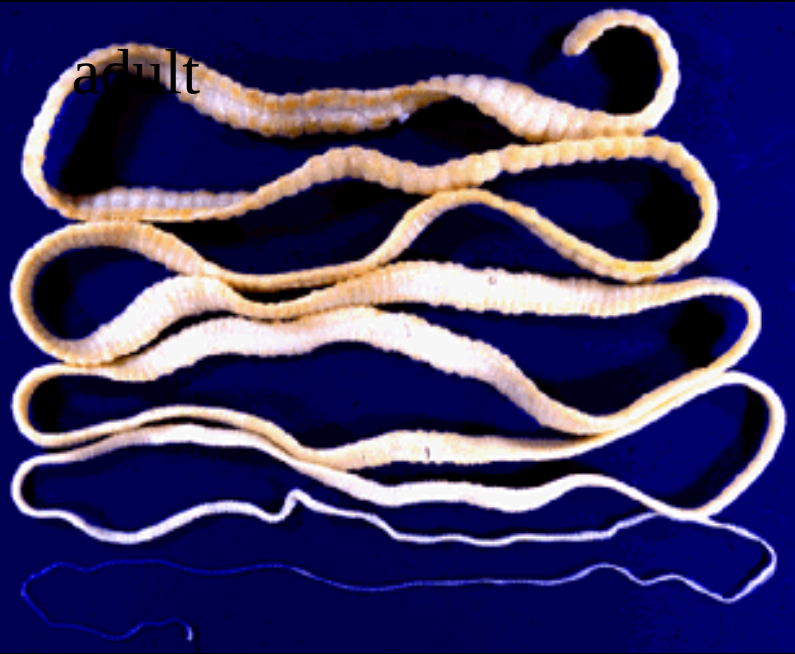
**6**

**3**

**5**

classis: Cestoda

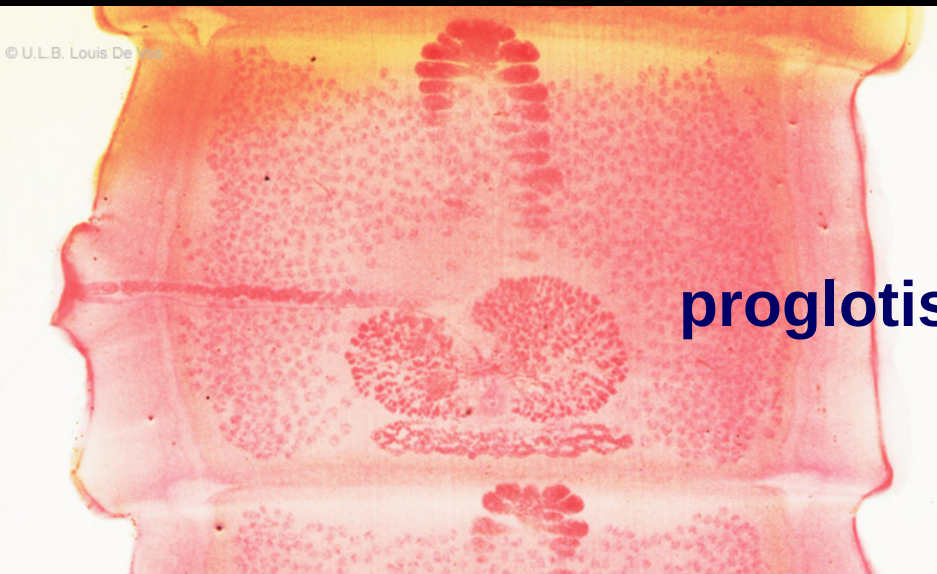
adult



**Svinjska pantljičara**  
***Taenia solium***



scolex



proglotis

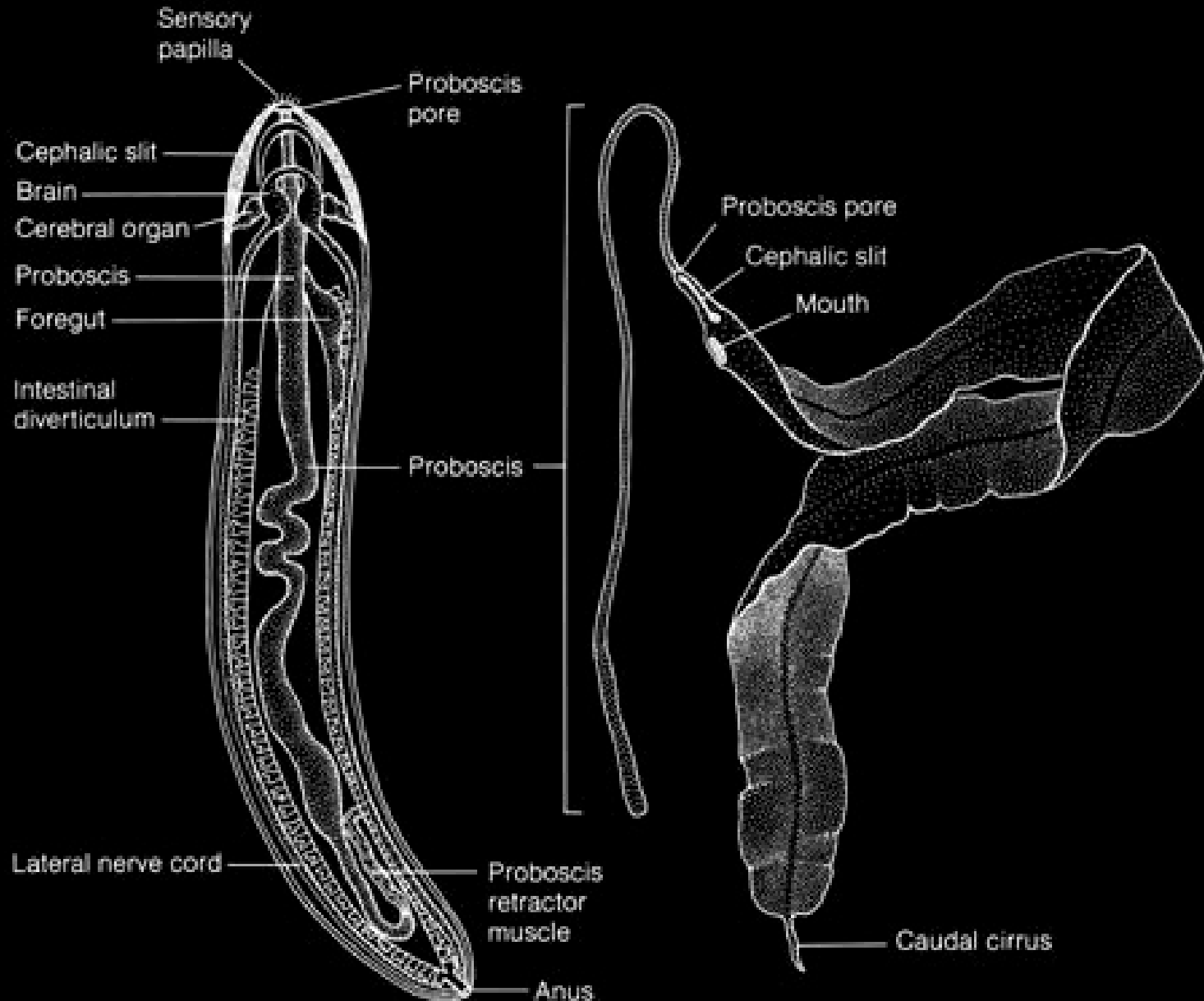


classis: Cestoda

*Echinococcus granulosus*  
adult



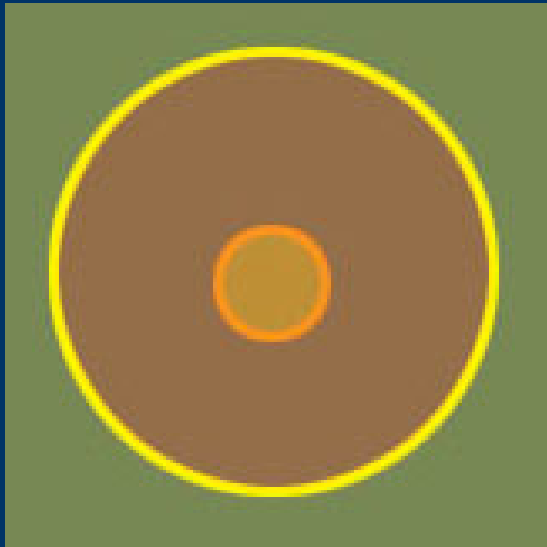
# Phylum: Nemertina



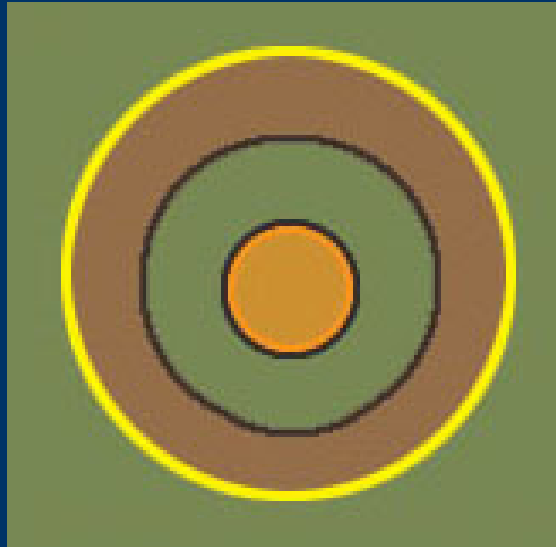
# Phylum: Nemertina



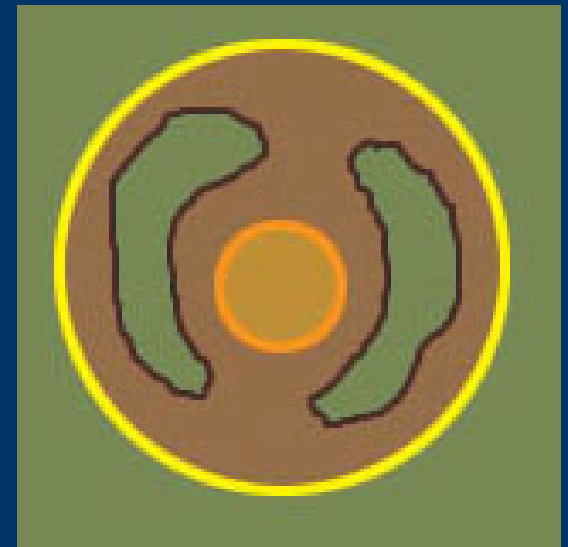
# BIOLOŠKI ZNAČAJ POJAVE TELESNIH DUPLJI – PSEUDOCELOMA I CELOMA



Acelomata  
-nema telesne duplje



Pseudocoelomata  
- prisutna lažna  
(pseudo) telesna duplja  
- *pseudocoelom*



Celomata  
- prisutna prava  
telesna duplja  
- *coelom*

# TELESNE DUPLJE ŽIVOTINJA

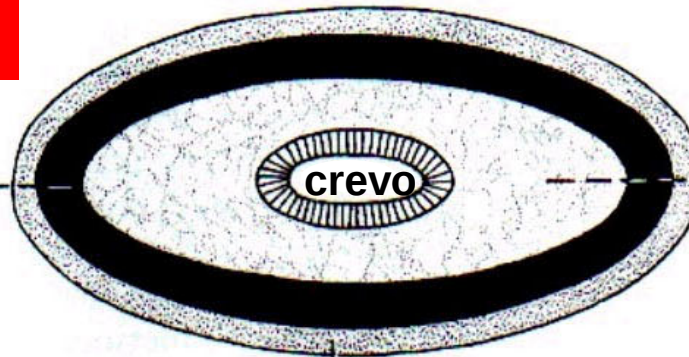
A – Acelomata

B – Pseudocelomata

C – Celomata

A

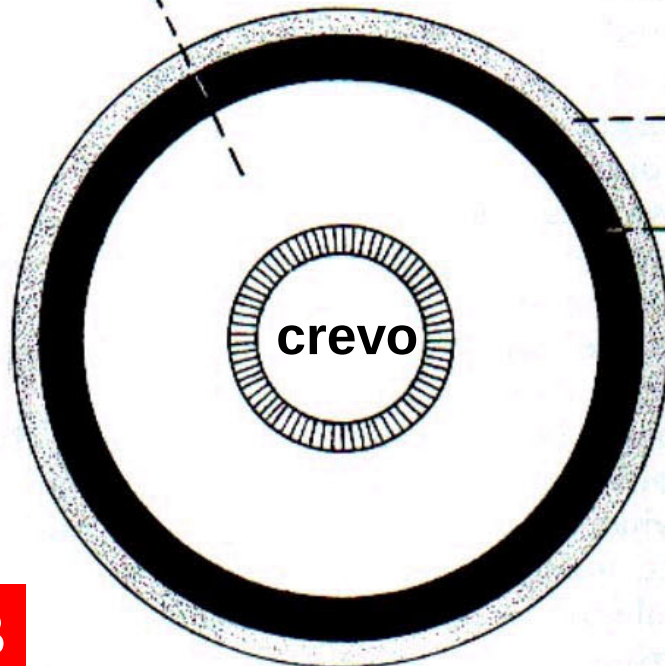
mišićni sloj



parenhim

mezodermalni organ

pseudocoelom



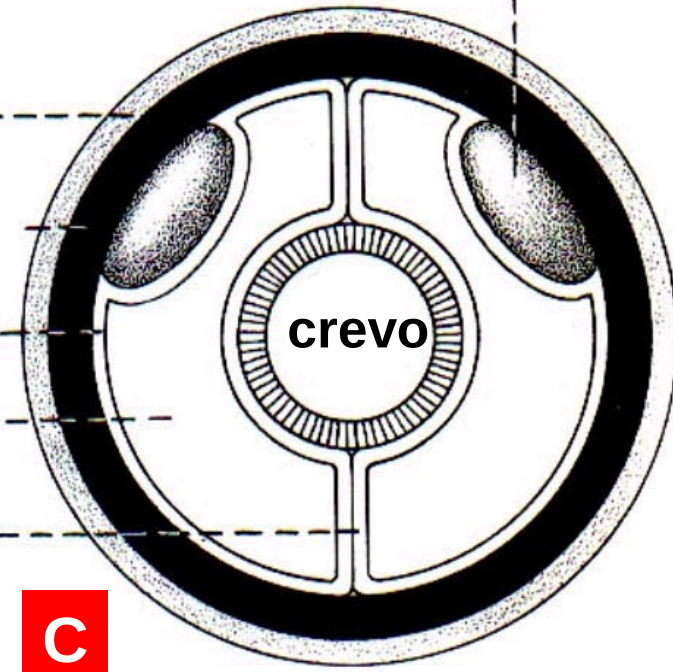
epidermis

mišićni sloj

peritoneum

coelom

mezentera



B

C

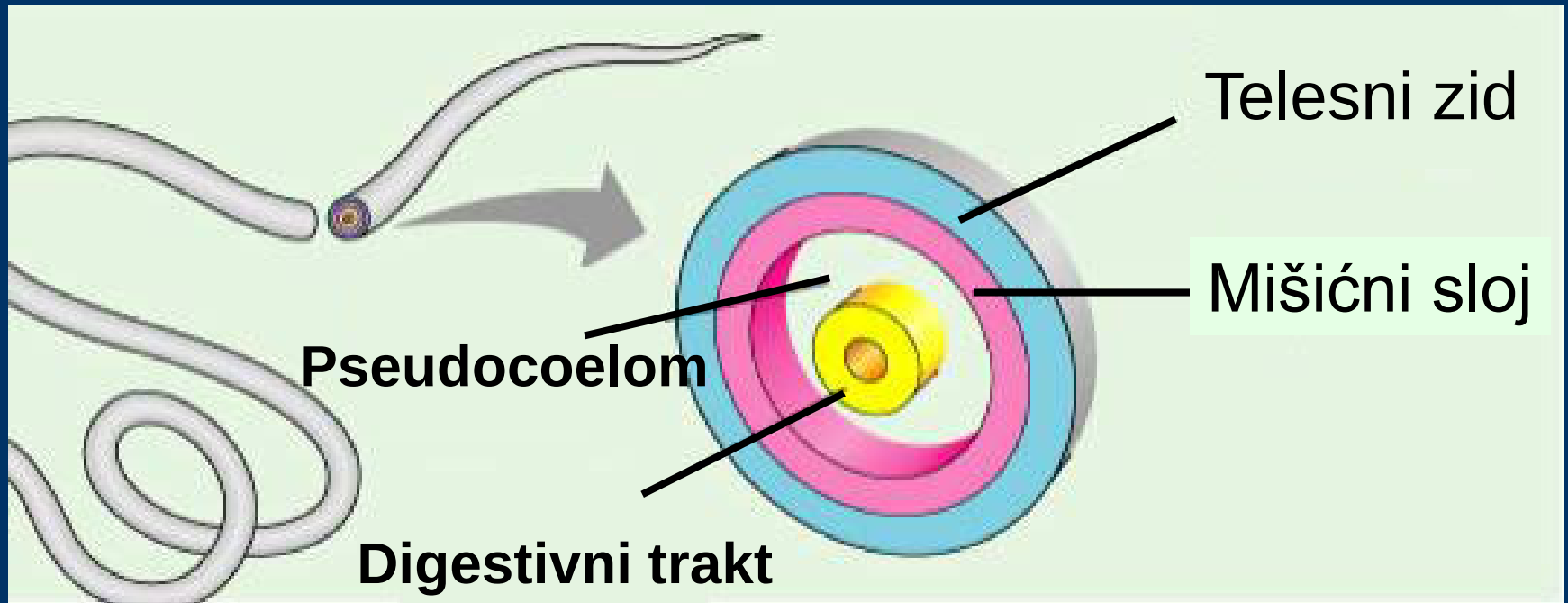
# PSEUDOCOELOMATA

- pseudocoelom
- pseudosegmentacija
- odsustvo krvnog sistema

Filumi:

- Nematoda
- Rotatoria
- Acanthocephala
- Gastrotricha
- Kinorhyncha
- Nematomorpha
- Entoprocta

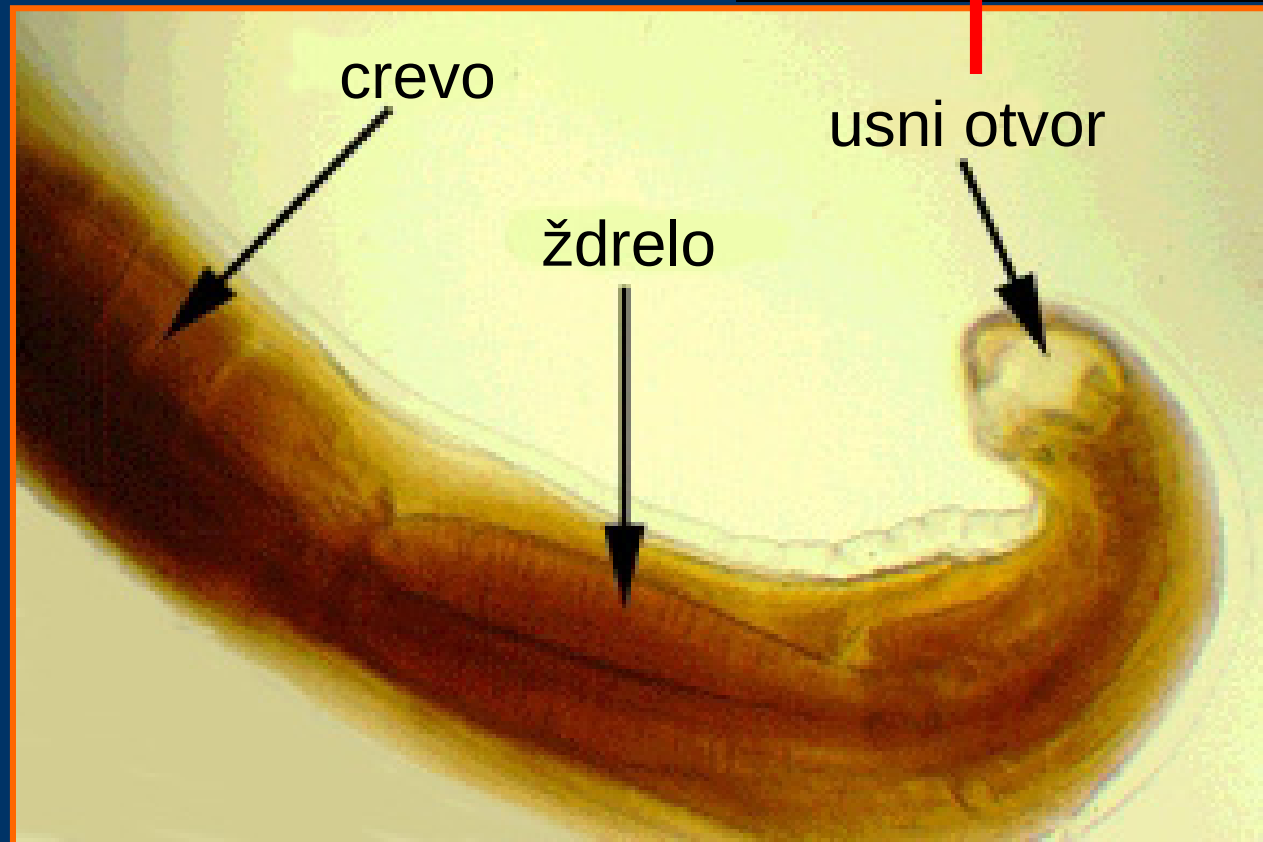
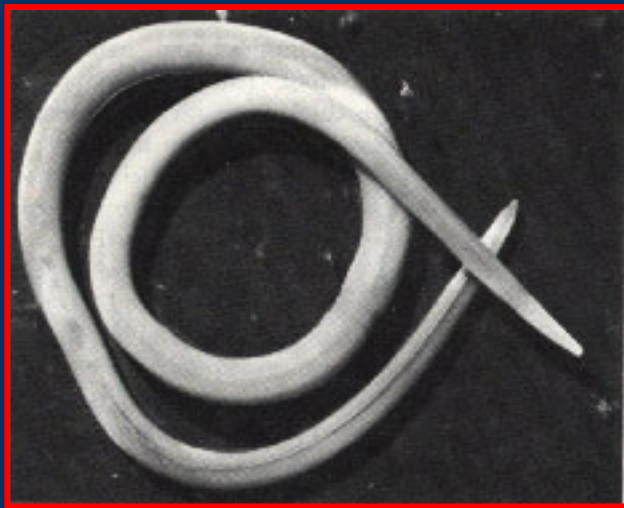
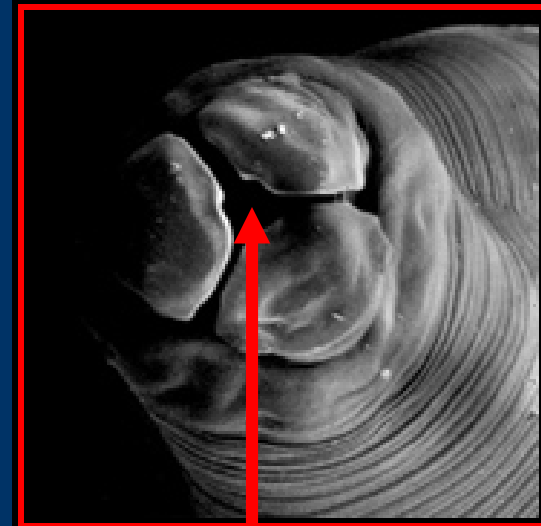
# PSEUDOCOLOM



# Phylum: Nematoda

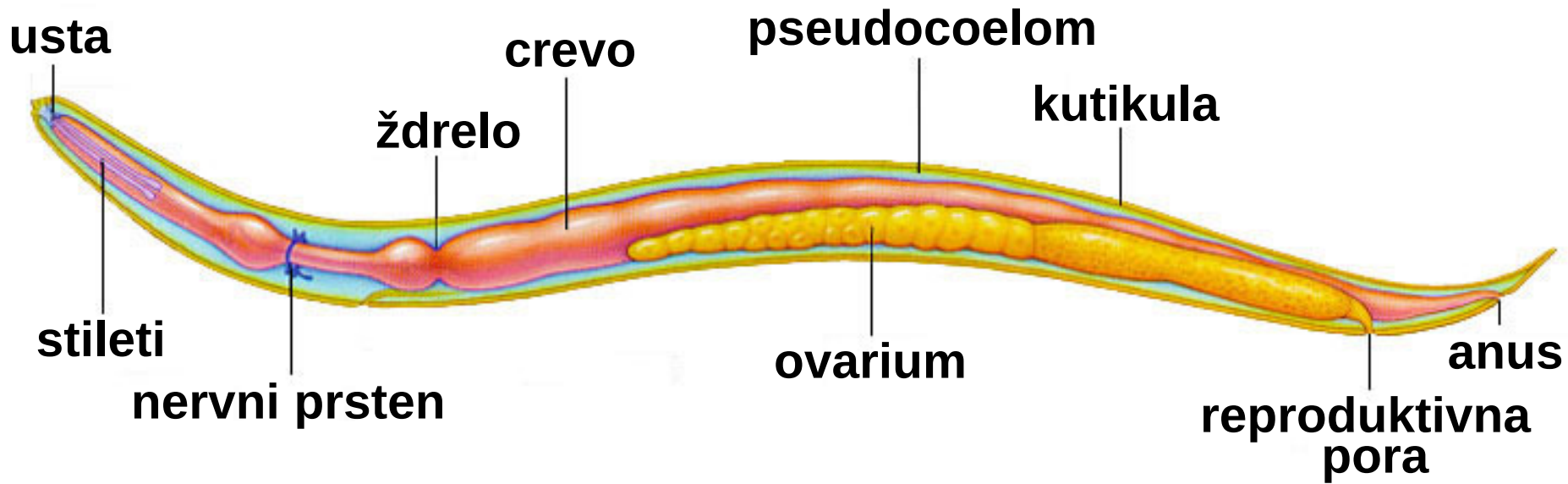
## Ordo: Ascaridida

### *Ascaris suum*



# Phylum: Nematoda

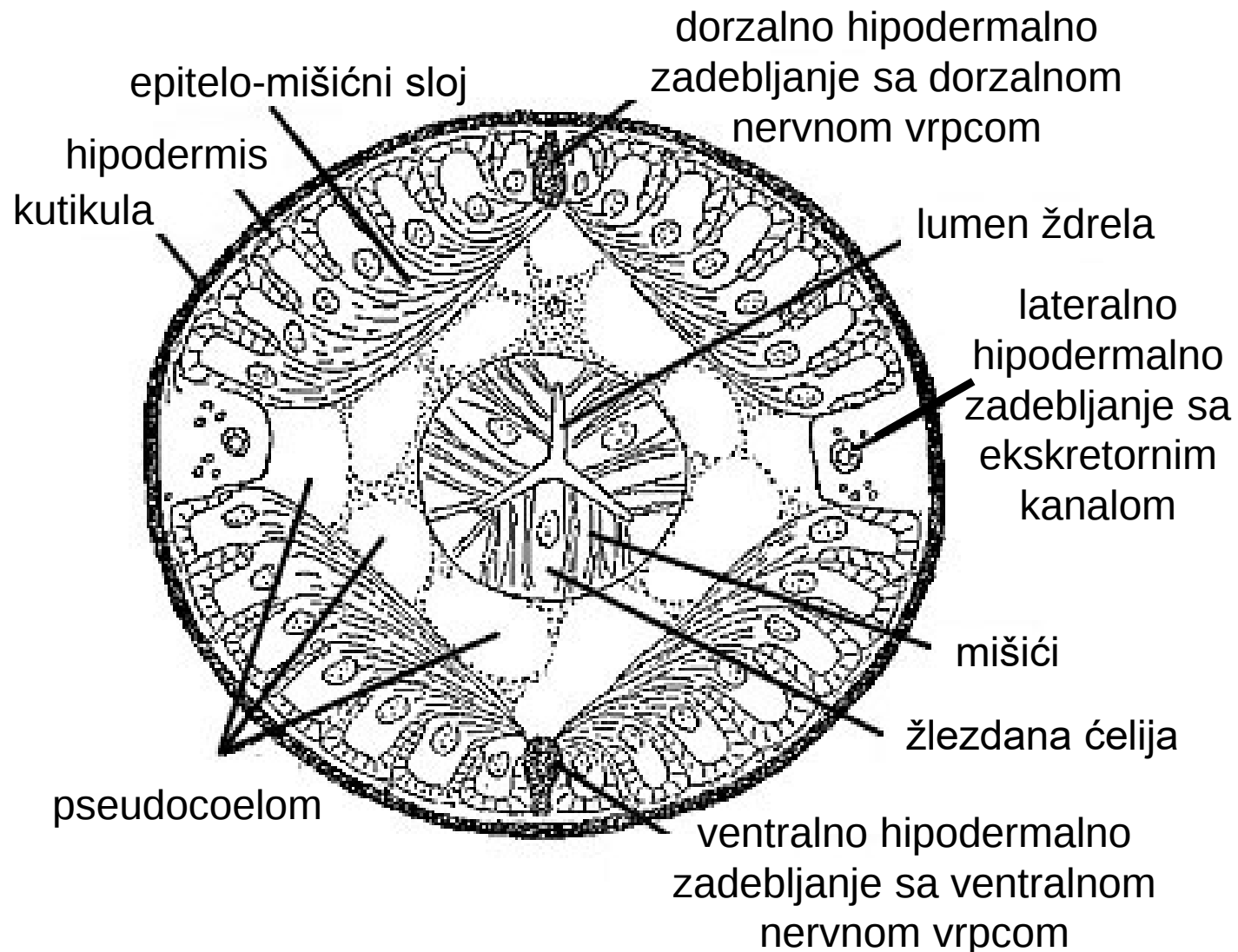
## Opšta šema građe tela



# Phylum: Nematoda

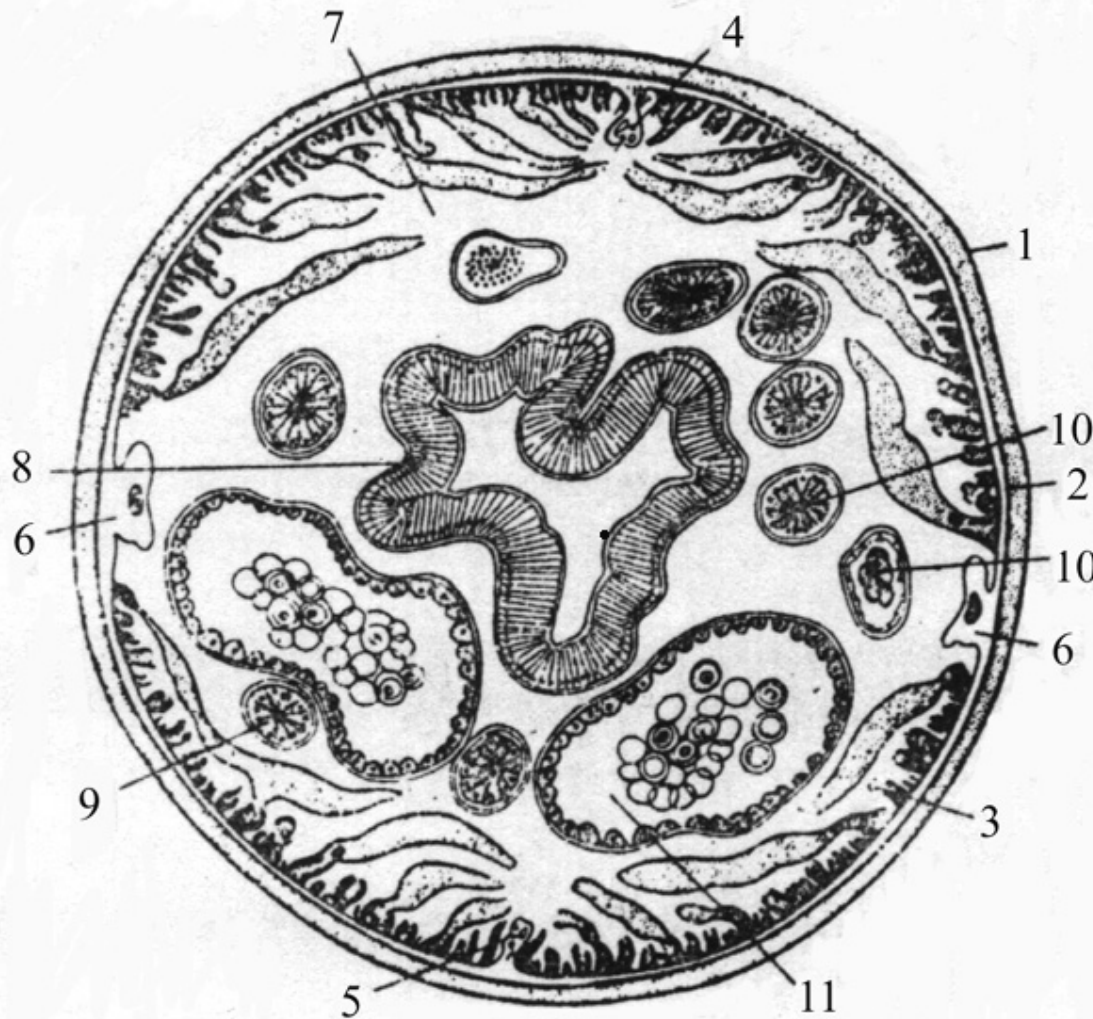
## Ordo: Ascaridida

*Ascaris sp.*  
poprečni  
presek u  
nivou ždrela



# Phylum: Nematoda

## *Ascaris sp.* poprečni presek kroz srednji deo tela ženke



1. Kutikula; 2. Hipodermis;
3. Epitelo-mišićna ćelija;
4. Dorzalno hipodermalno zadebljanje sa dorzalnom nervnom vrpcom;
5. Ventralno hipodermalno zadebljanje sa ventralnom nervnom vrpcom;
6. Lateralno hipodermalno zadebljanje sa ekskretornim kanalom;
7. Pseudocelom;
8. Crevo;
- 9 i 10. Ovarijum;
11. Uterus

# Phylum: Nematoda

**Ordo: Ascaridida**

*Parascaris equorum*

*Parascaris equorum*



*Toxocara canis*

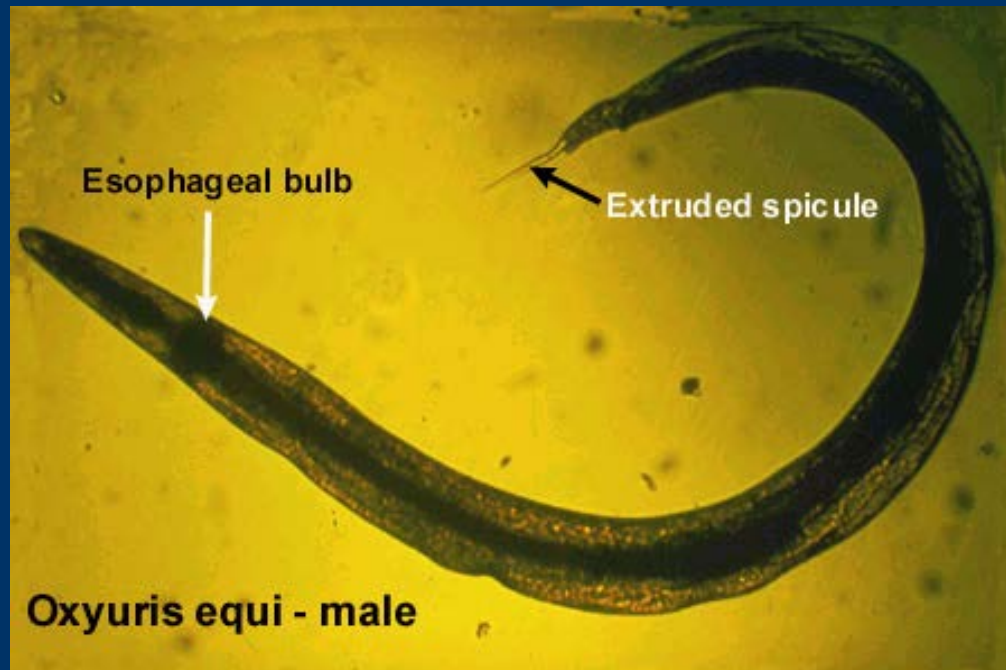
*Toxocara canis*



# Phylum: Nematoda

## Ordo: Oxiuroidea

### *Oxyuris equi*



### *Enterobius vermicularis*





***Strongylus  
equinus***

**Phylum: Nematoda**

**Ordo: Strongylida**

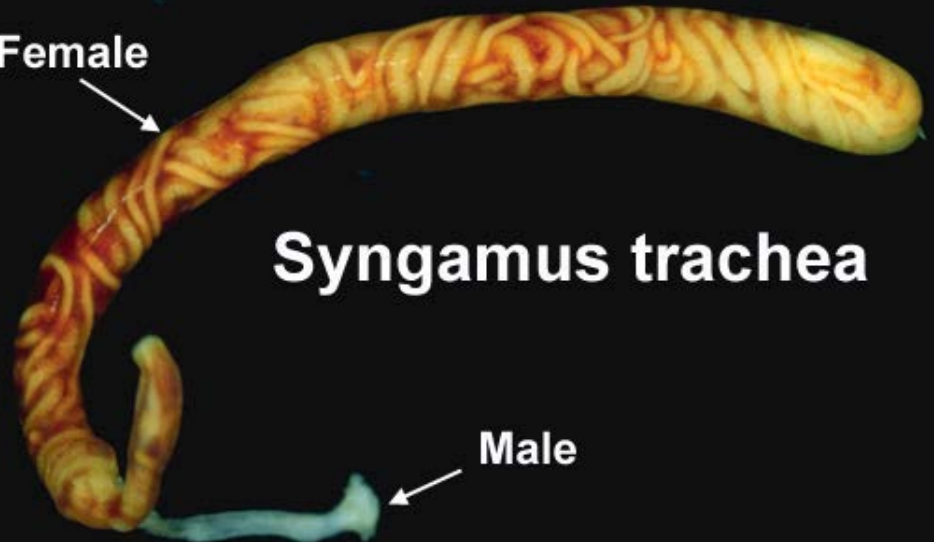


**Abdominal surgery in a horse with chronic colic showing hemorrhagic nodules and swollen blood vessels (arrows) due to migrating larvae of *Strongylus equinus***

**Female**

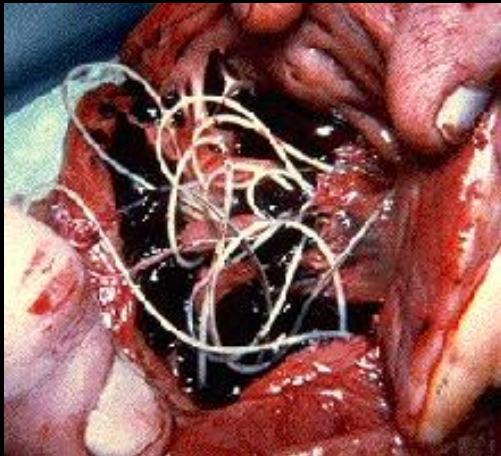
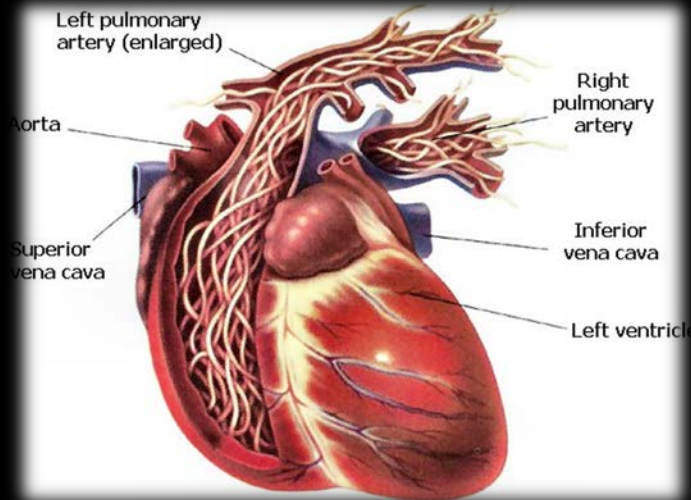
**Syngamus trachea**

**Male**



# Phylum: Nematoda

## *Dirofilaria immitis* srčani crv



## Ordo: Spirurida

## *Dirofilaria repens* subkutana infekcija



**Dirofilarioza**  
**pasa** predstavlja  
veoma ozbiljno i  
potencijalno  
fatalno oboljenje  
koje izazivaju  
paraziti

*Dirofilaria immitis* i *D. repens*.

Najčešći vektori ovog oboljenja su komarci iz  
rodova *Anopheles*, *Aedes* i *Culex*

# Phylum: Nematoda

## Ordo: Spirurida

### *Wuchereria bancrofti* ( syn. *Filaria bancrofti* )

Izaziva  
“slonovsku bolest”  
(*elephantiasis* )



Prenose je hematofagni insekti, **najčešće**  
**komarci** *Culex* sp. *Aedes* sp. i *Anopheles* sp.

Phylum: **Nematoda**

Ordo: **Trichocephalida**

*Trichinella spiralis*



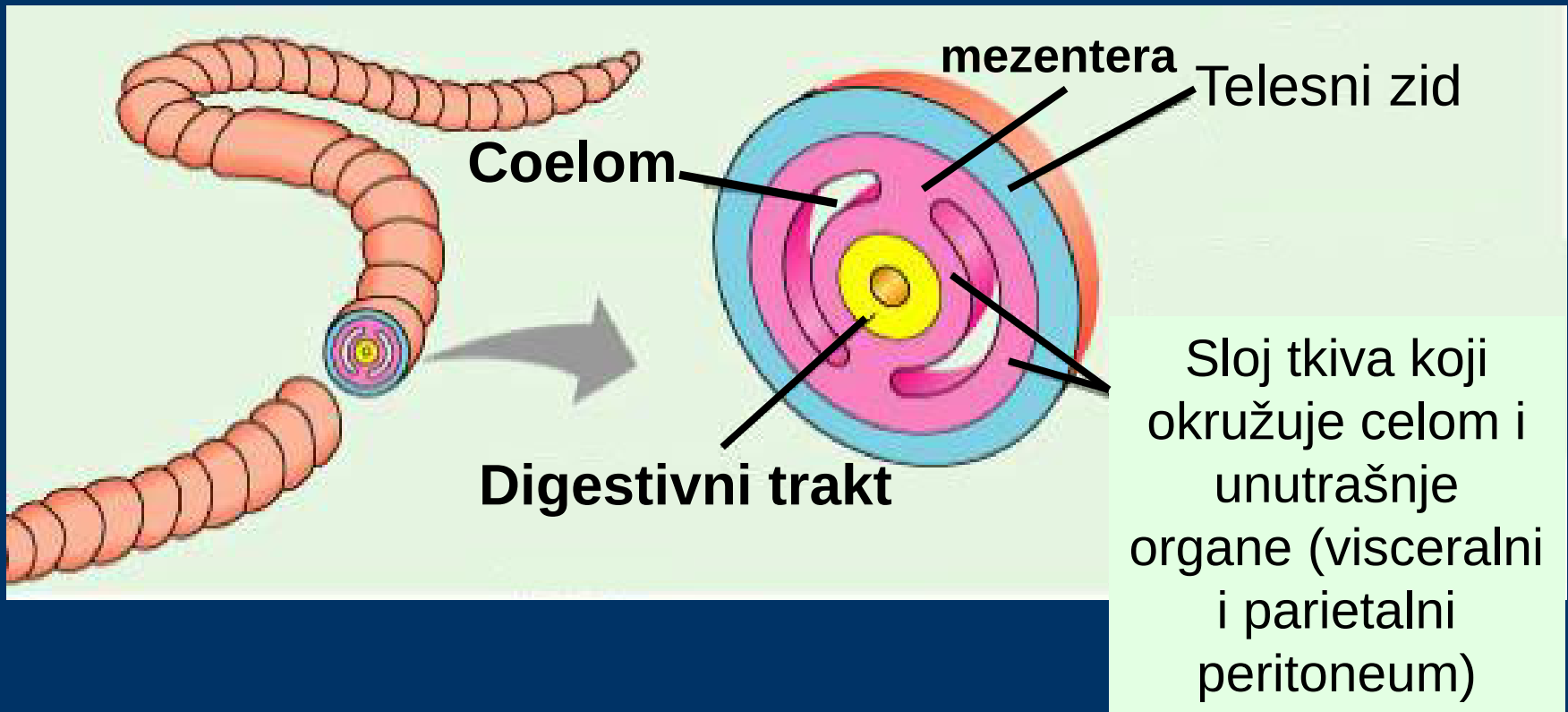
# COELOMATA

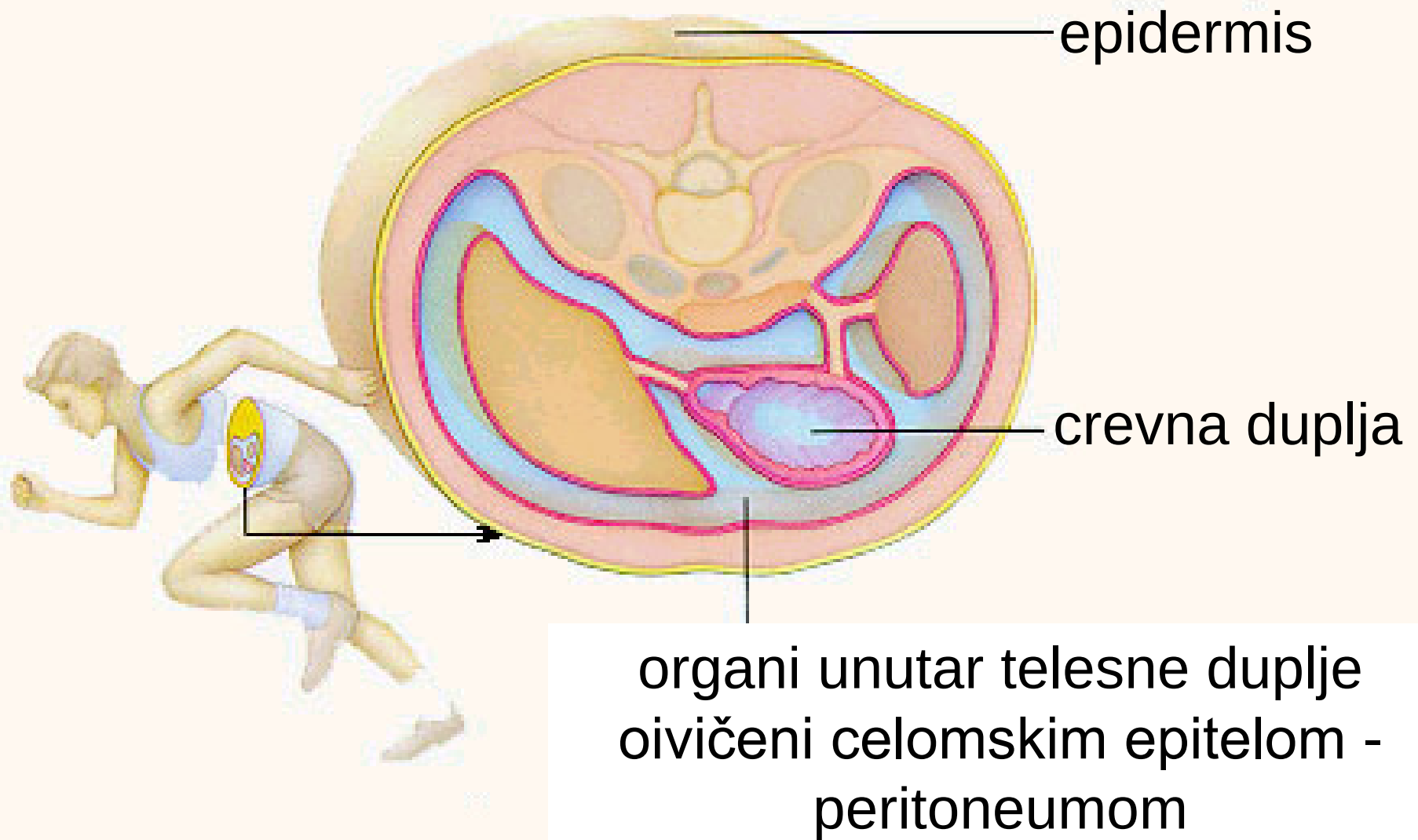
- Grupa organizama koje poseduju pravu telesnu duplju - ***celom***, koja, za razliku od pseudoceloma ima svoj epitel - ***peritoneum***.

Filumi:

- Mollusca
- Annelida
- Arthropoda
- Echinodermata
- Chordata

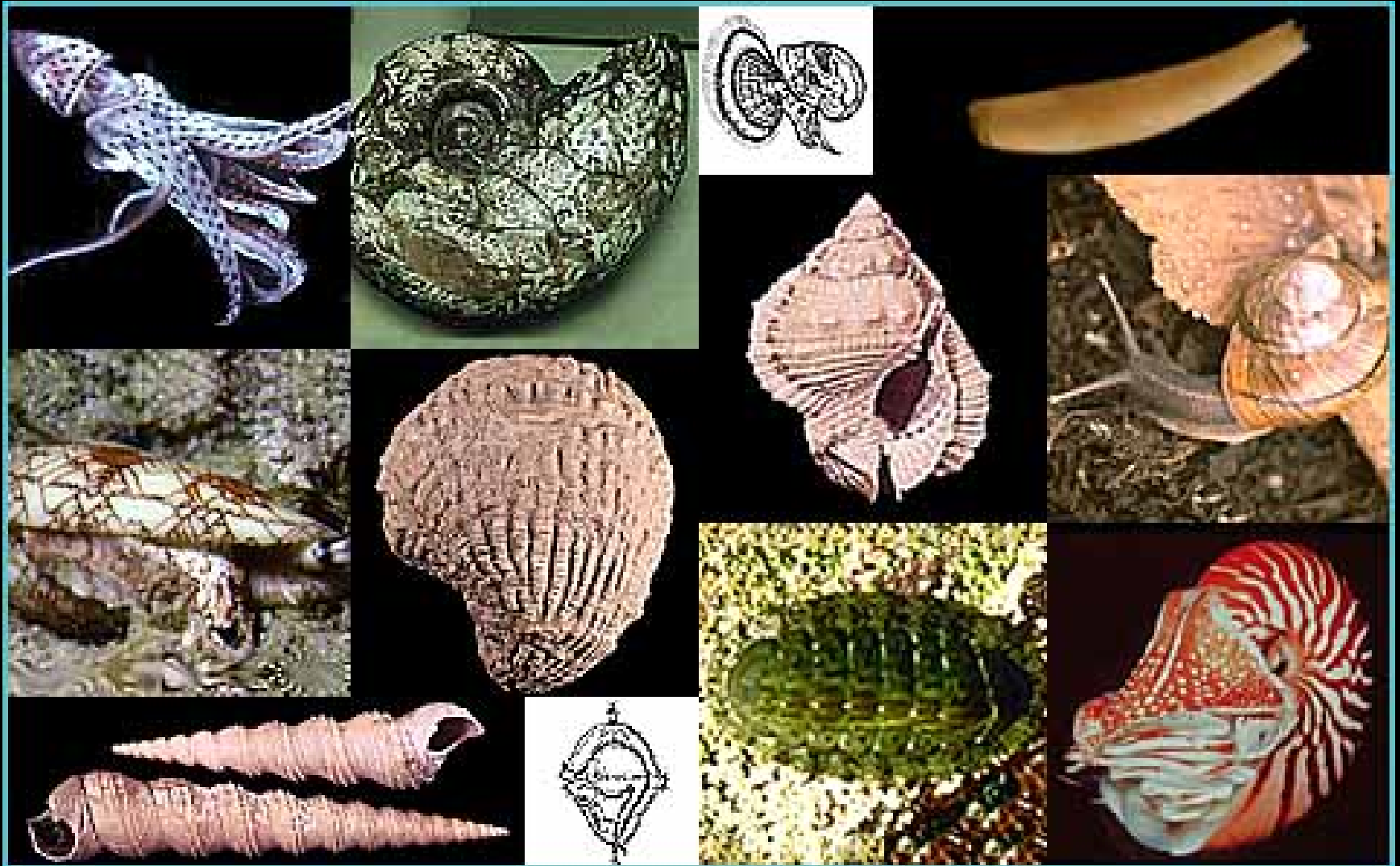
# CELOM





# Phylum: Mollusca

Oko 100 000 vrsta, veoma raznovrsne, kako po veličini i izgledu, tako i po načinu života



# Phylum: **Mollusca**

obuhvata 8 klasa:

## Gastropoda



## Bivalvia



## Polyplacophora



## Scaphopoda



## Amphyneura

## Monoplacophora



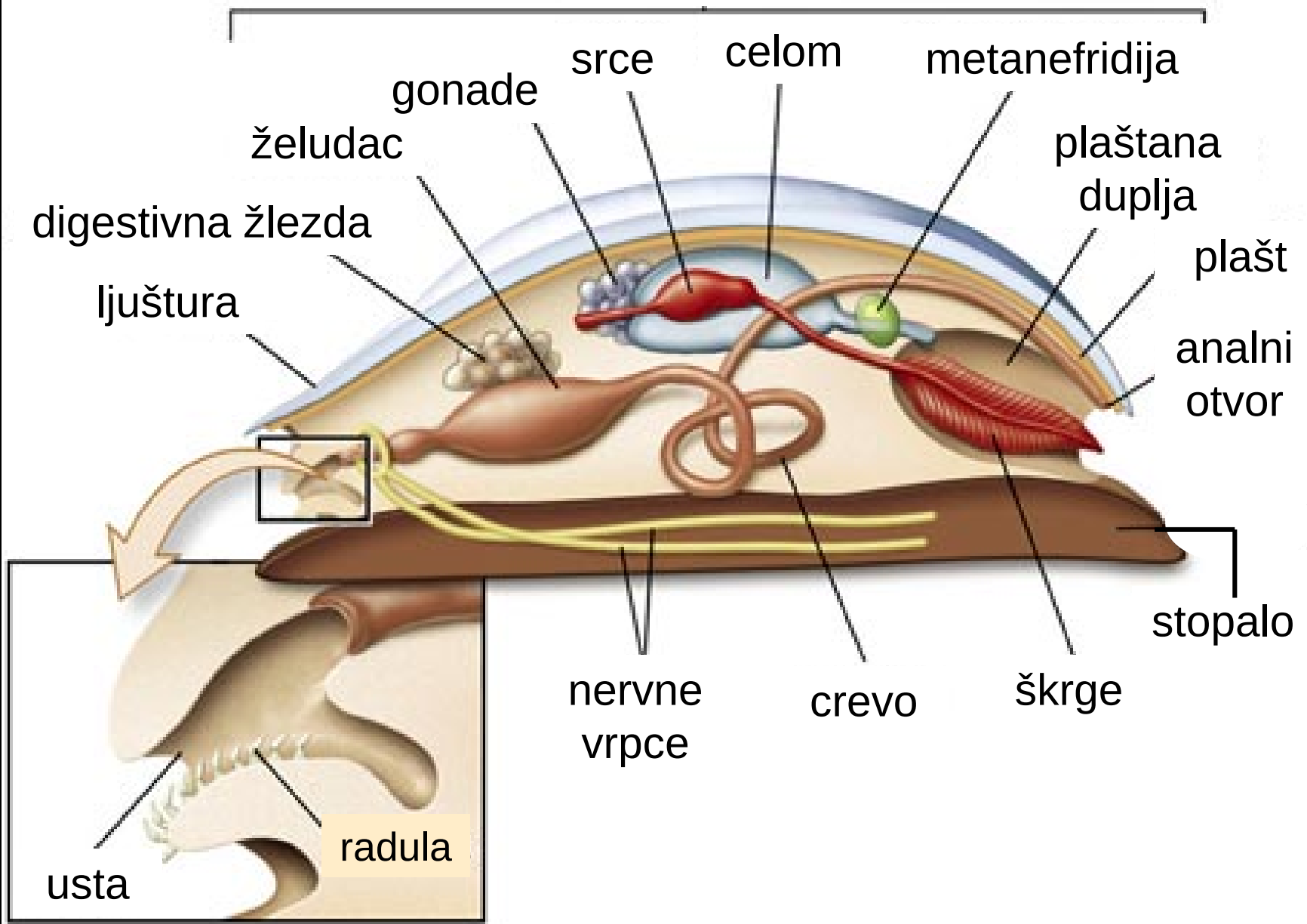
## Cephalopoda

## Aplacophora

# Phylum: Mollusca

## Šema građe hipotetičkog pretka

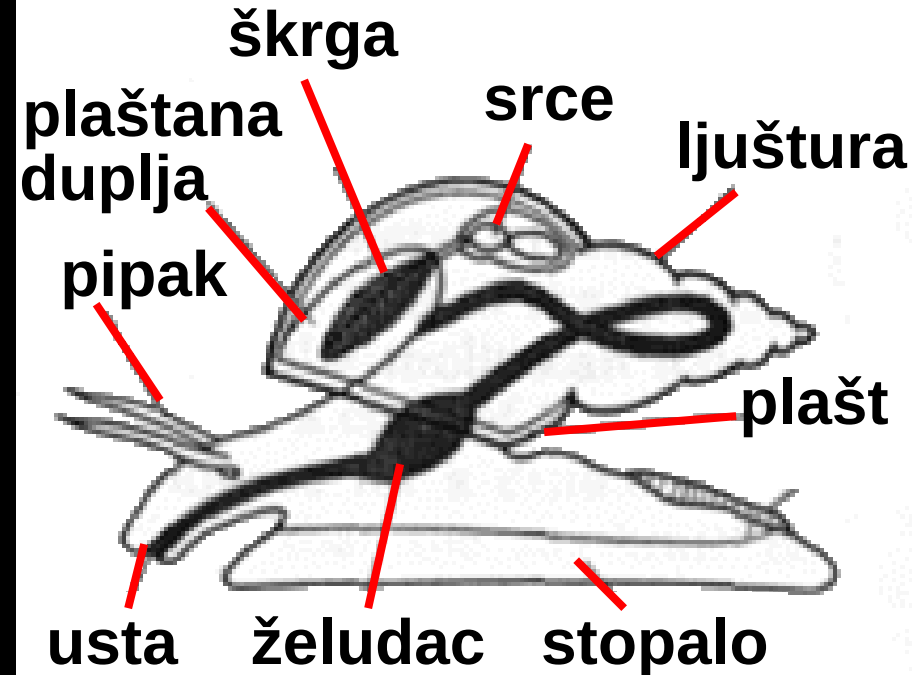
utrobna kesa



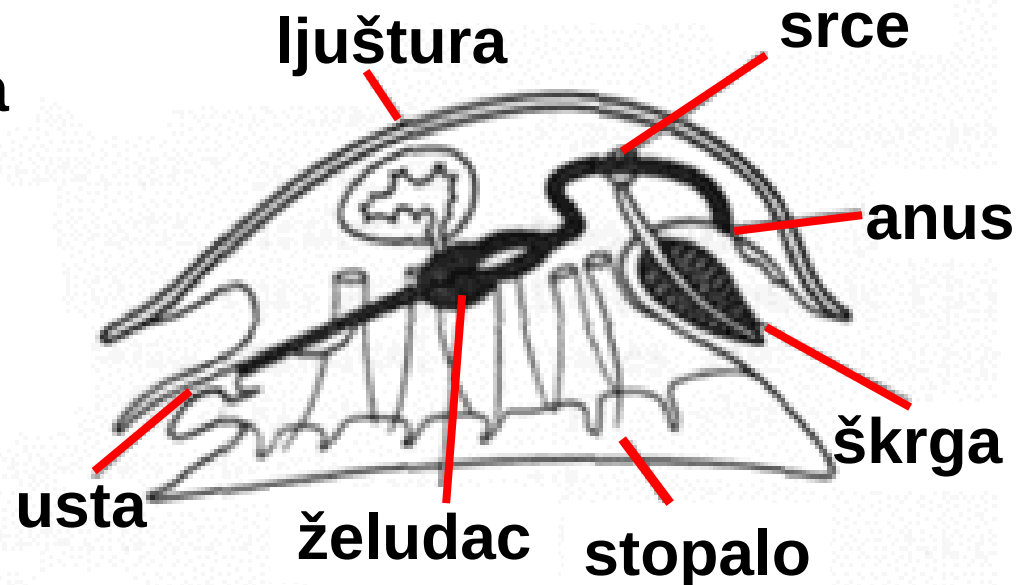
# Phylum: Mollusca

Kod **puževa (Gastropoda)** građa tela je modificirana u odnosu na prethodno opisani hipotetički model. Najvažnija modifikacija je **TORZIJA UTROBNE KESE I PLAŠTANOG KOMPLEKSA**.

## Gastropoda



## Predak



Phylum: Mollusca

Classis: Gastropoda

*Helix  
pomatia*

vinogradski  
puž

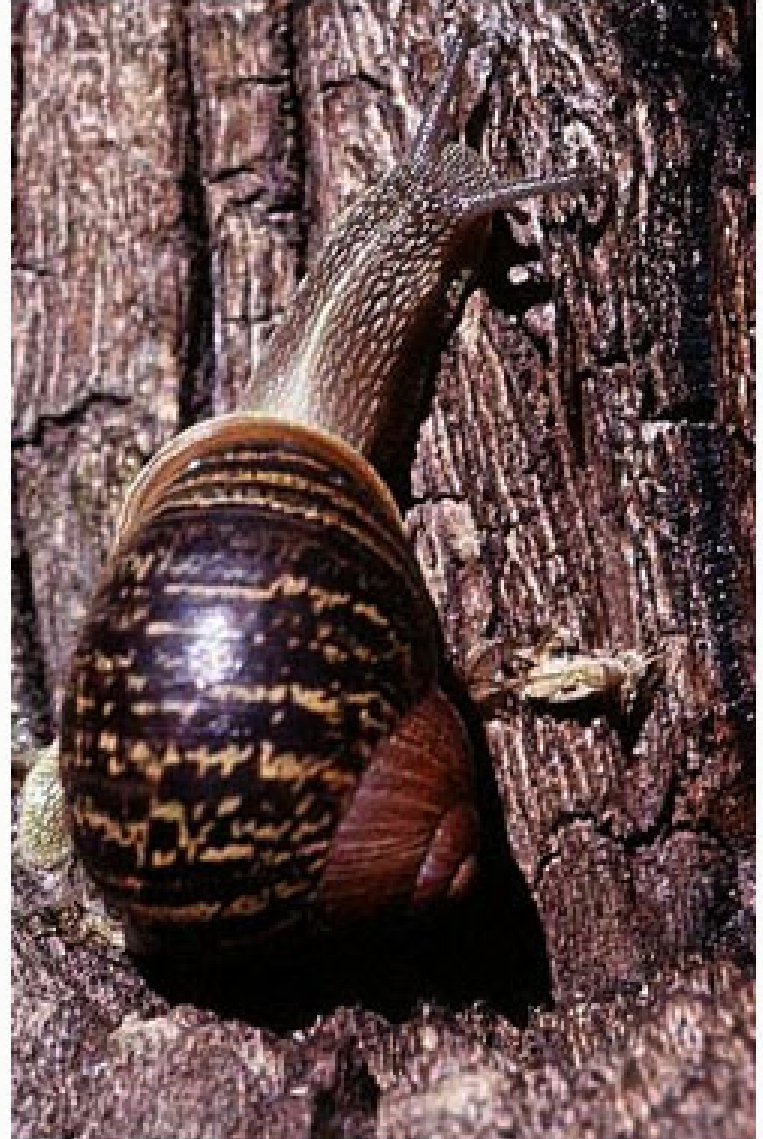


**Phylum: Mollusca**

**Classis: Gastropoda**

***Helix aspersa***

**baštenski (šareni)  
puž**



Phylum: **Mollusca**

Classis: **Gastropoda**

*Limax*  
*maximus*

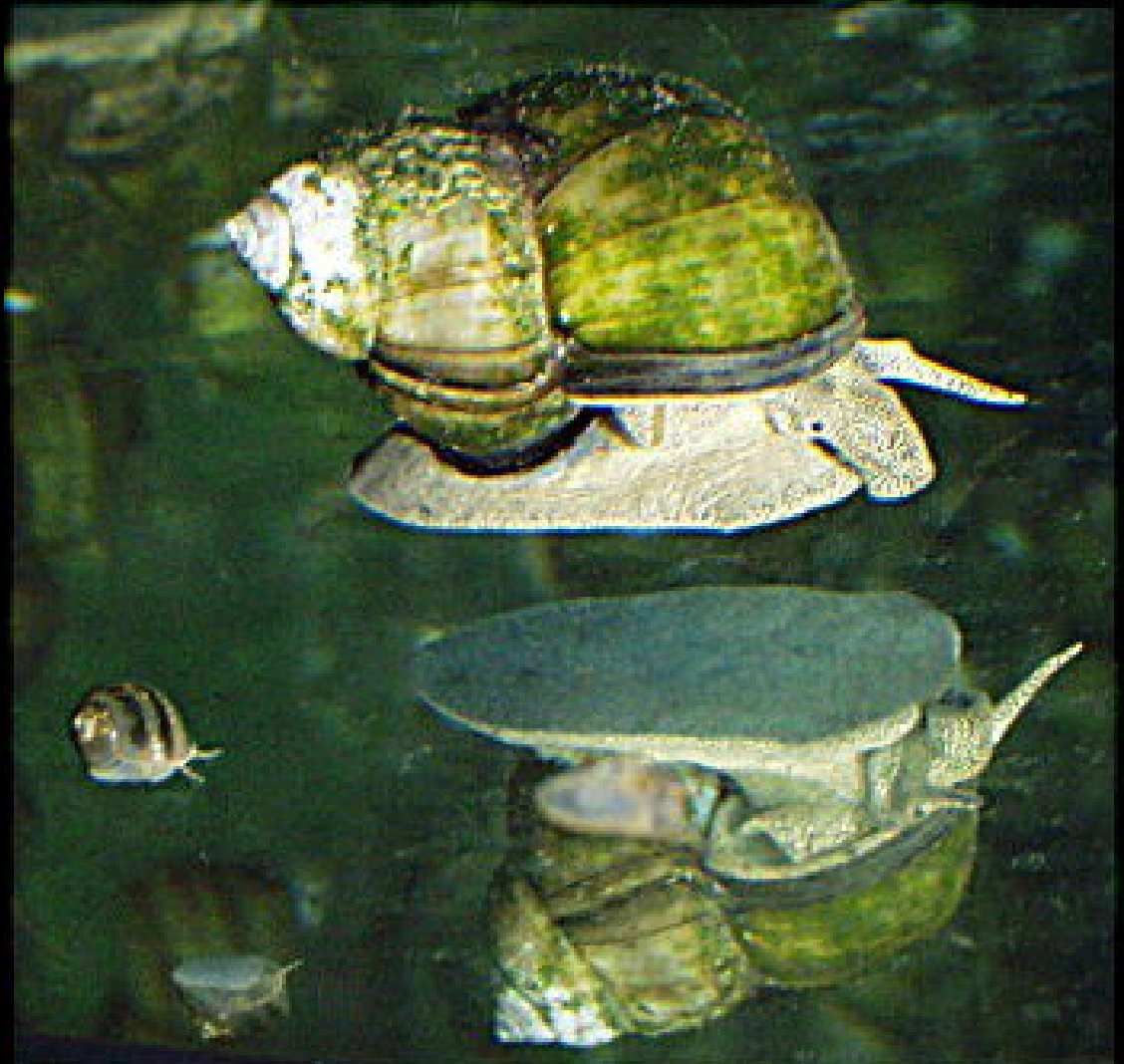
puž golać



Phylum: **Mollusca**

Classis: **Gastropoda**

*Viviparus  
viviparus*



**Phylum: Mollusca**

**Classis: Gastropoda**

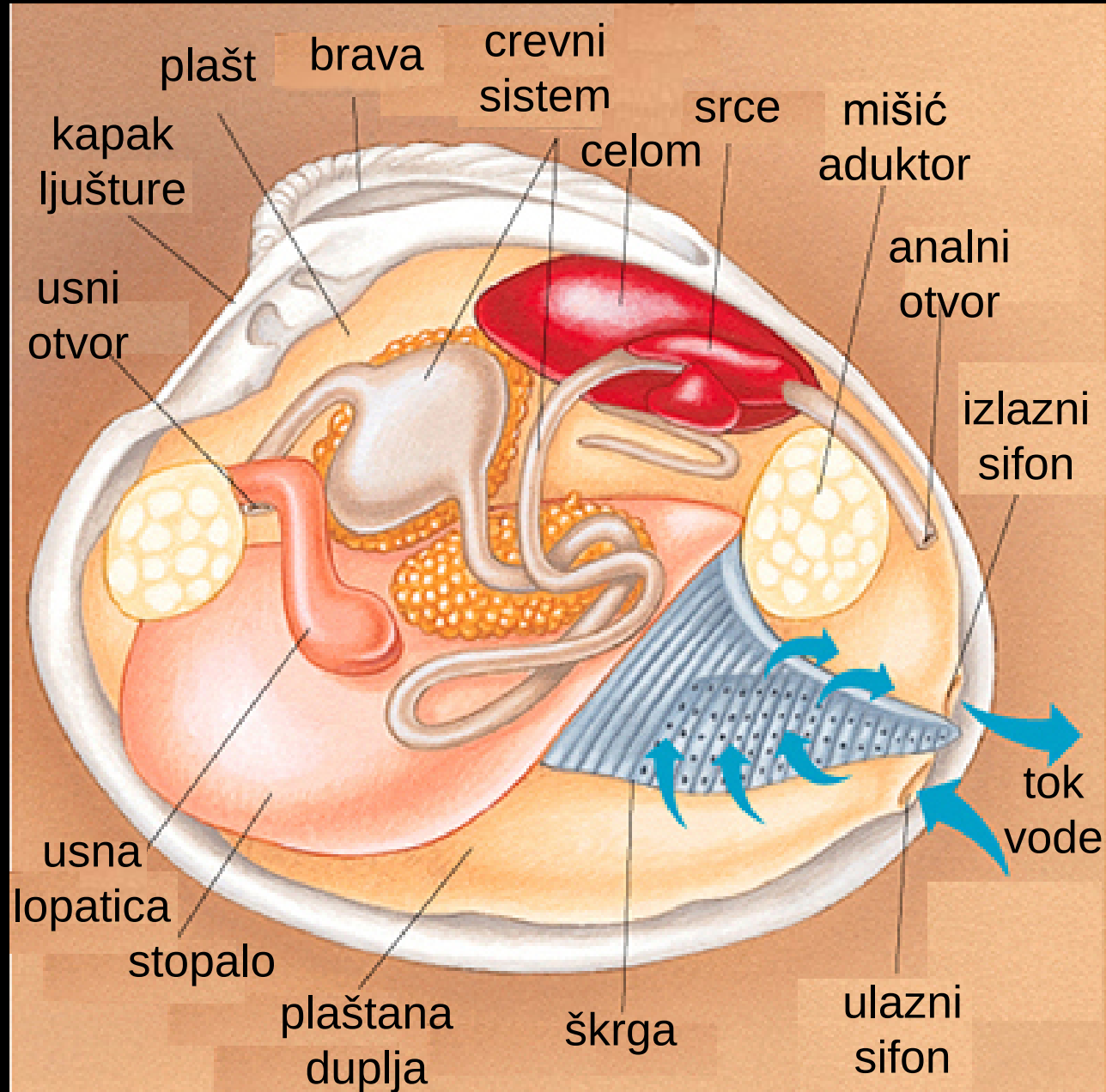


***Murex  
nigrispinosus***

# Phylum: Mollusca

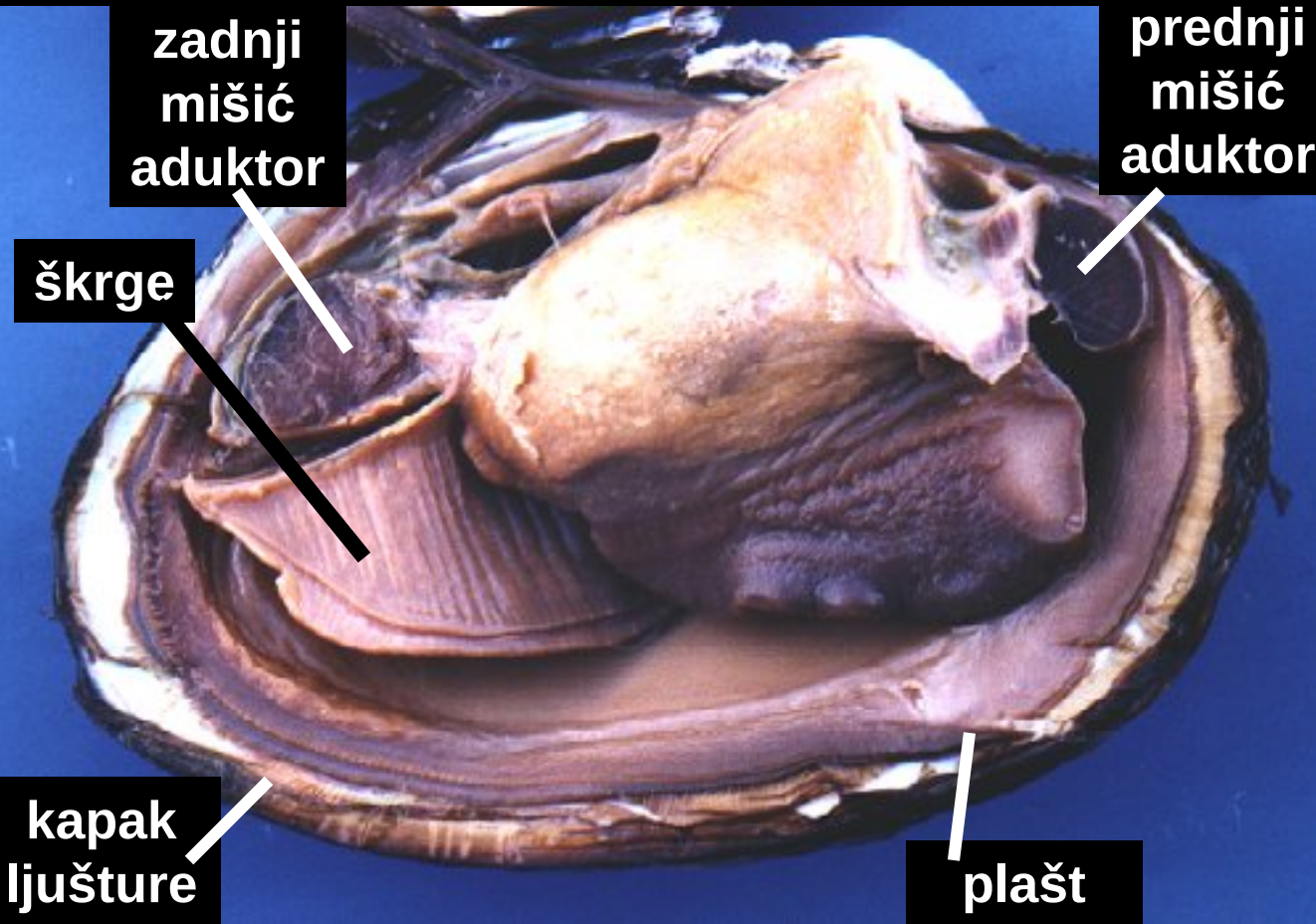
## Classis: Bivalvia

### Šematski prikaz građe



# Phylum: Mollusca

## Classis: Bivalvia



disekovana  
školjka

**Phylum: Mollusca**

**Classis: Bivalvia**

*Ostrea  
edulis*

kamenica



**Phylum: Mollusca**

**Classis: Bivalvia**

***Pina  
nobilis***



# Phylum: Mollusca

## Classis: Bivalvia

*Pinctada  
margaritifera*

Biserna školjka

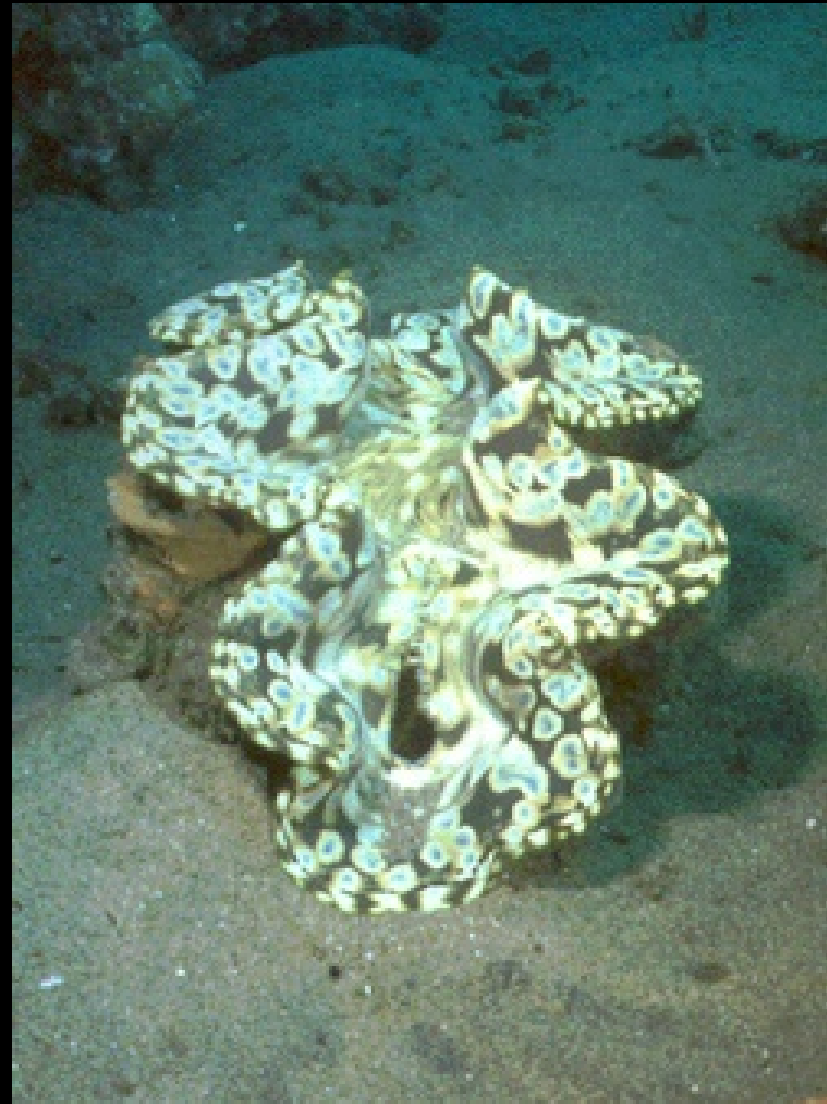


Phylum: **Mollusca**

Classis: **Bivalvia**

*Tridacna gigas*

gigantska školjka



**Phylum: Mollusca**

**Classis: Bivalvia**

***Unio  
pictorum***



**rečna školjka**

# Phylum: Mollusca

## Classis: Bivalvia

*Lithodomus  
lithophagus*

prstac, datulja



Phylum: **Mollusca**

Classis: **Bivalvia**

*Mytilus  
galloprovincialis*

dagnja



# Phylum: Mollusca

## Classis: Bivalvia

*Cardium edule*

srčanka



**Phylum: Mollusca**

**Classis: Bivalvia**

*Meretrix chione*

rumenka

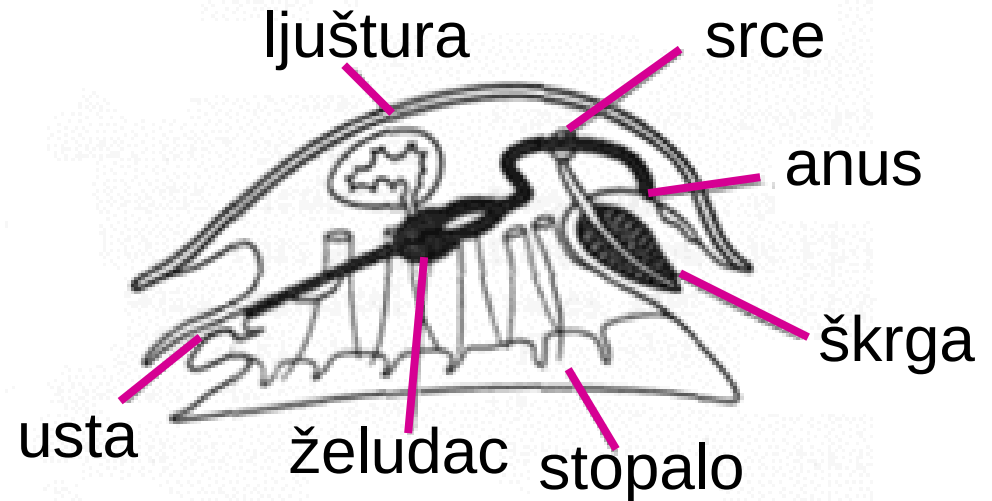


# Phylum: Mollusca

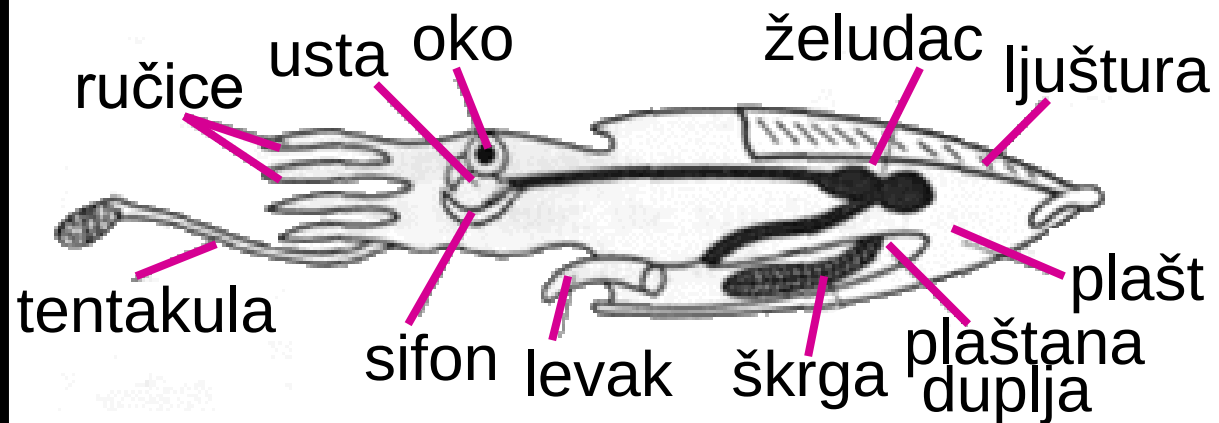
## Classis: Cephalopoda

promene u građi  
**Cephalopoda**  
u odnosu na  
hipotetičkog pretka

### Predak



### Cephalopoda



**Phylum: Mollusca**

**Classis: Cephalopoda**

**Ekonomski značajni predstavnici**



*Loligo sp.*



*Sepia sp.*



*Octopus sp.*

**Phylum: Mollusca**

**Classis: Cephalopoda**



***Nautilus sp.***



***Ozaena moschata* -  
muzzgavac**

# Phylum: Annelida

Homonomna segmentacija



Klase:

- Polychaeta
- ← • Oligochaeta
- Hirudinea →



A



Phylum: Annelida

Classis Polychaeta

Nereis sp.

A – spoljašnja morfologija

B – prednji kraj tela

B

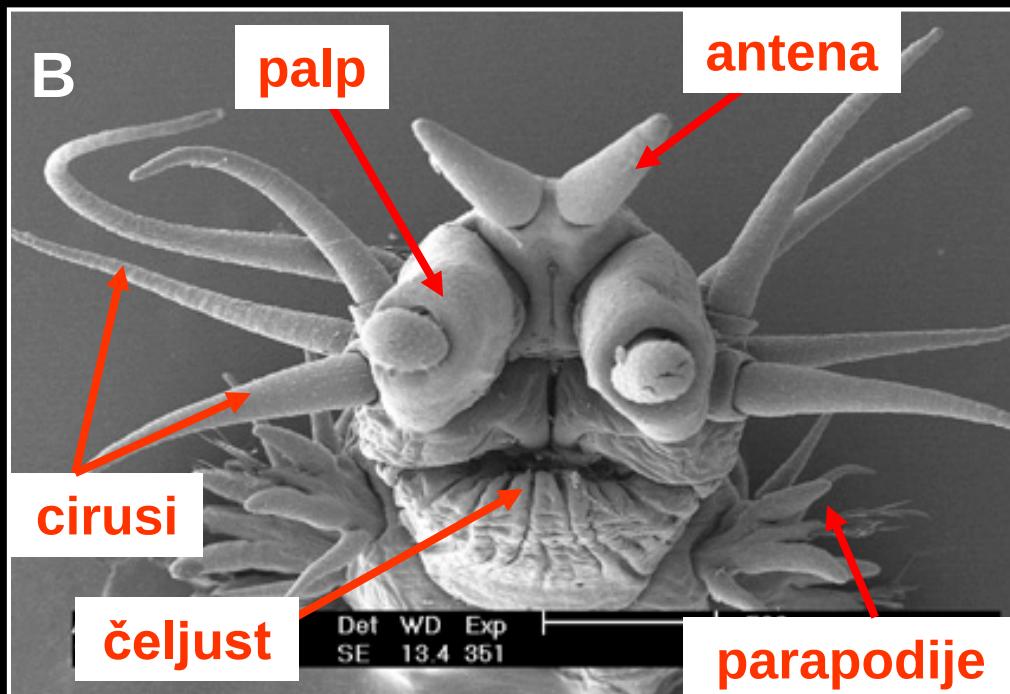
palp

antena

cirusi

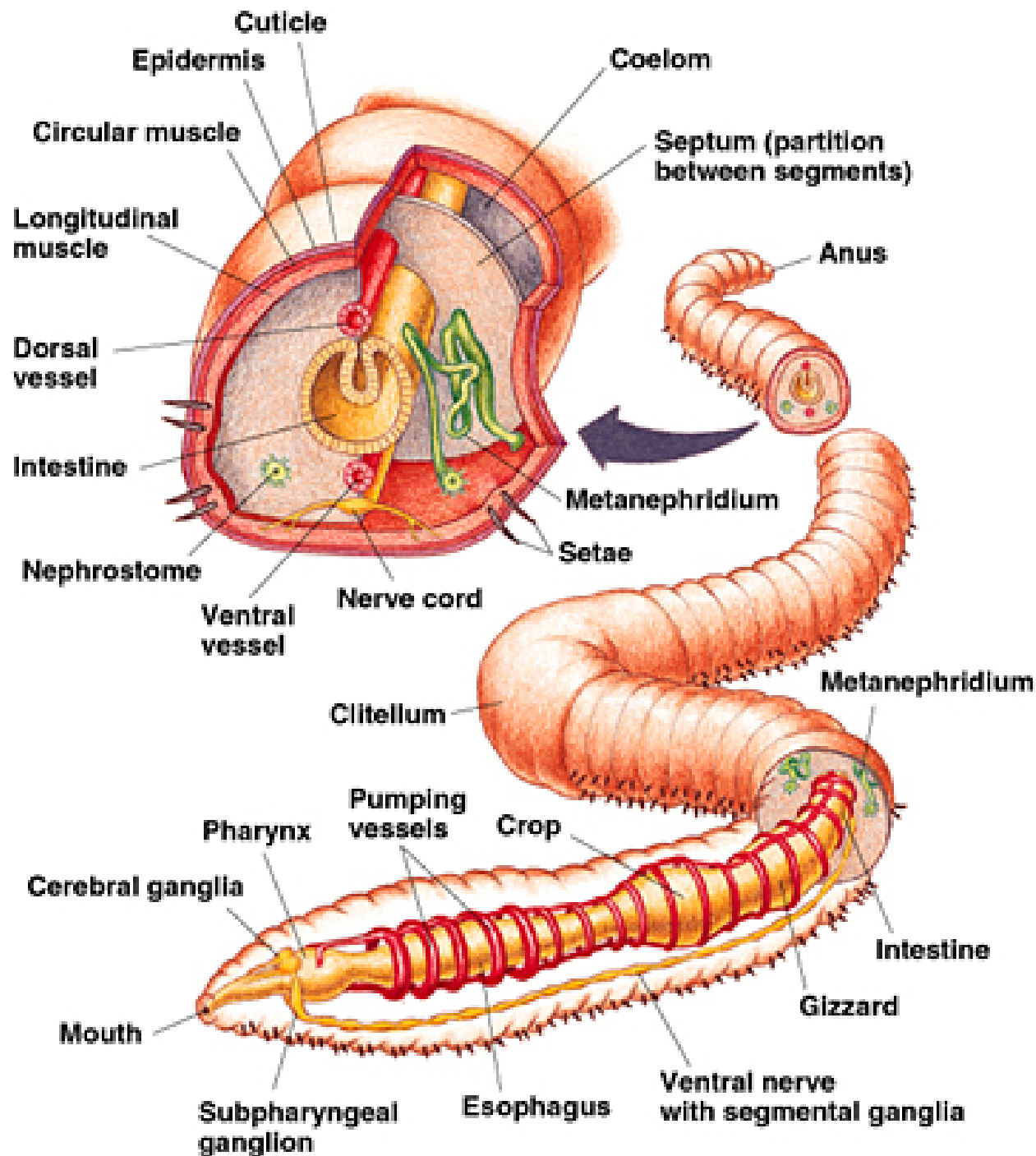
čeljust

parapodije



# Phylum: Annelida

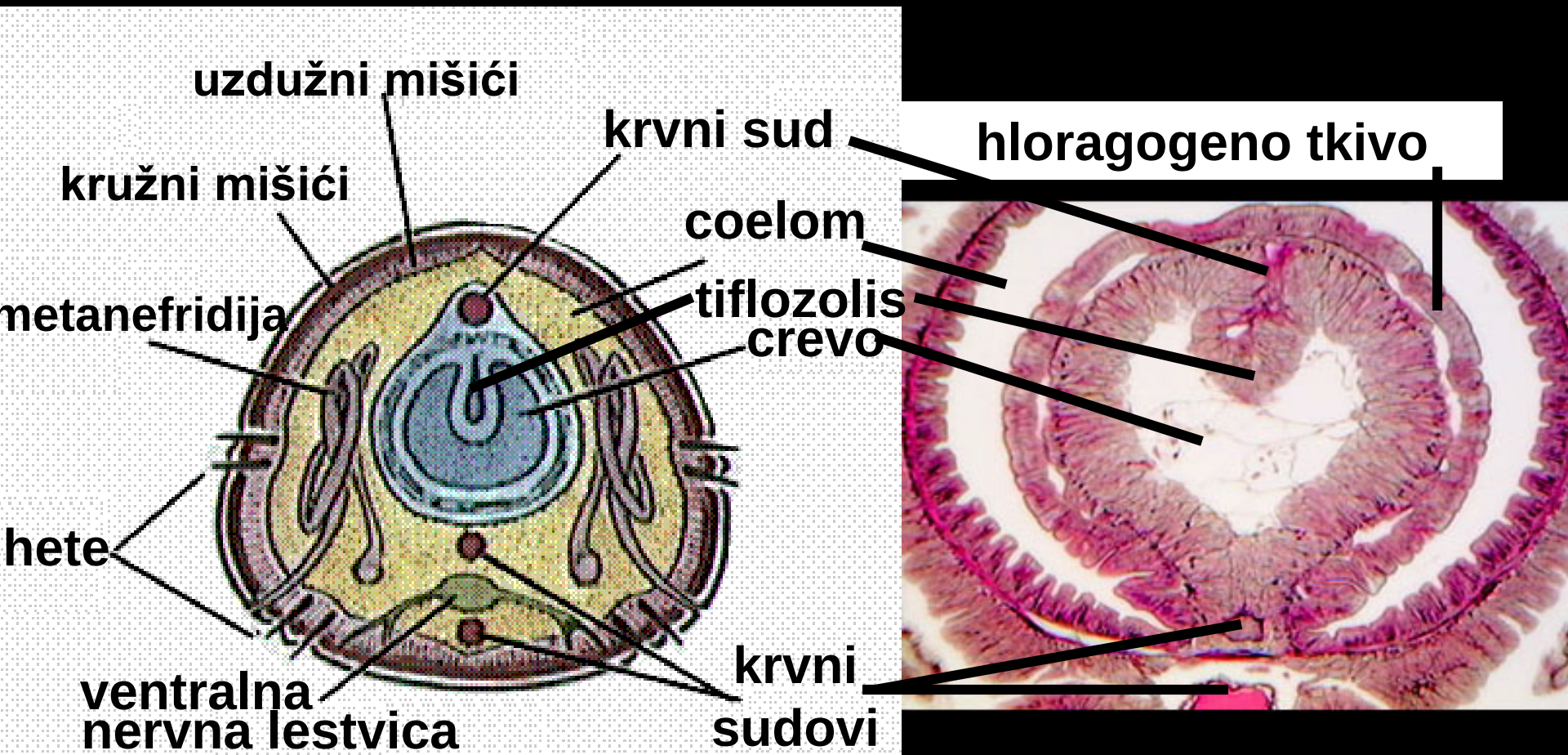
## Classis Oligochaeta



# Phylum: Annelida

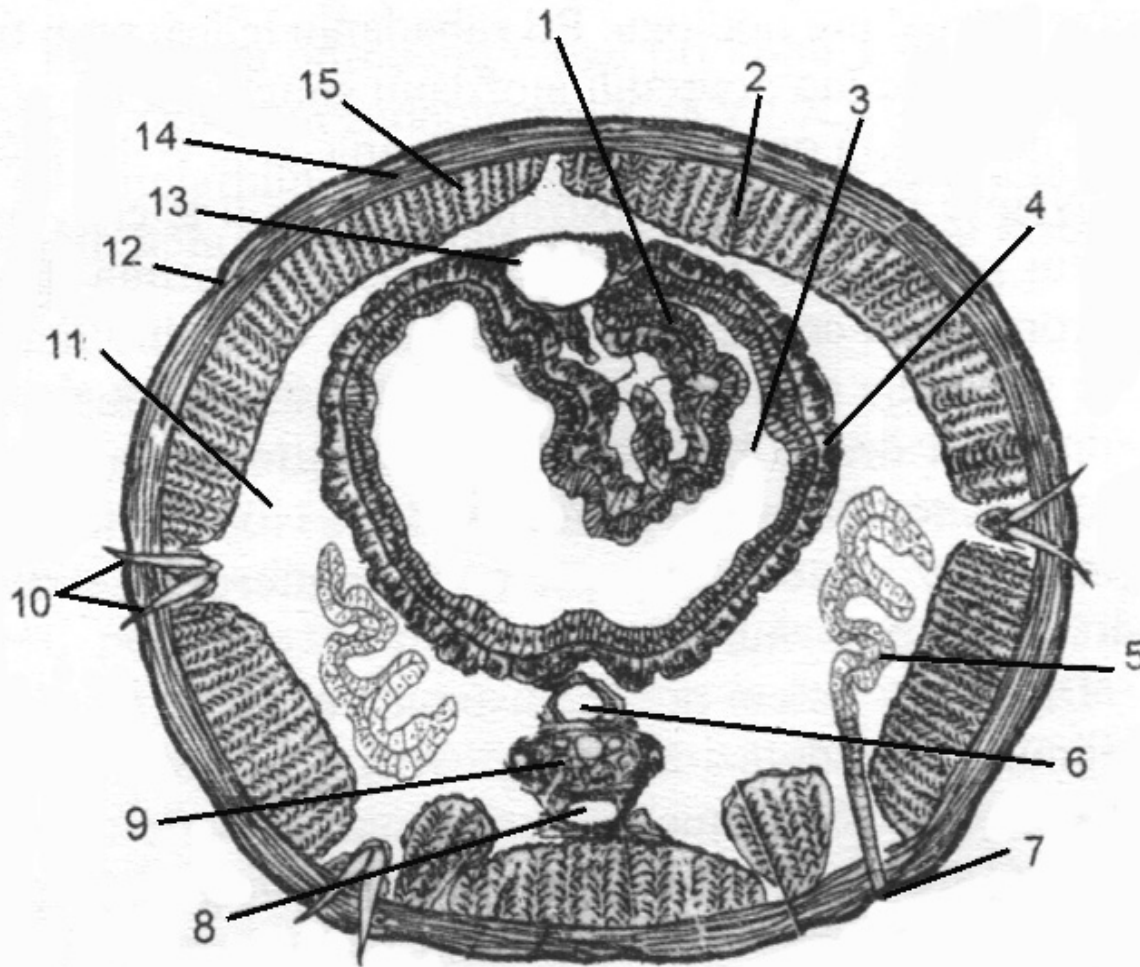
## Classis Oligochaeta

### *Lumbricus terrestris* - poprečni presek

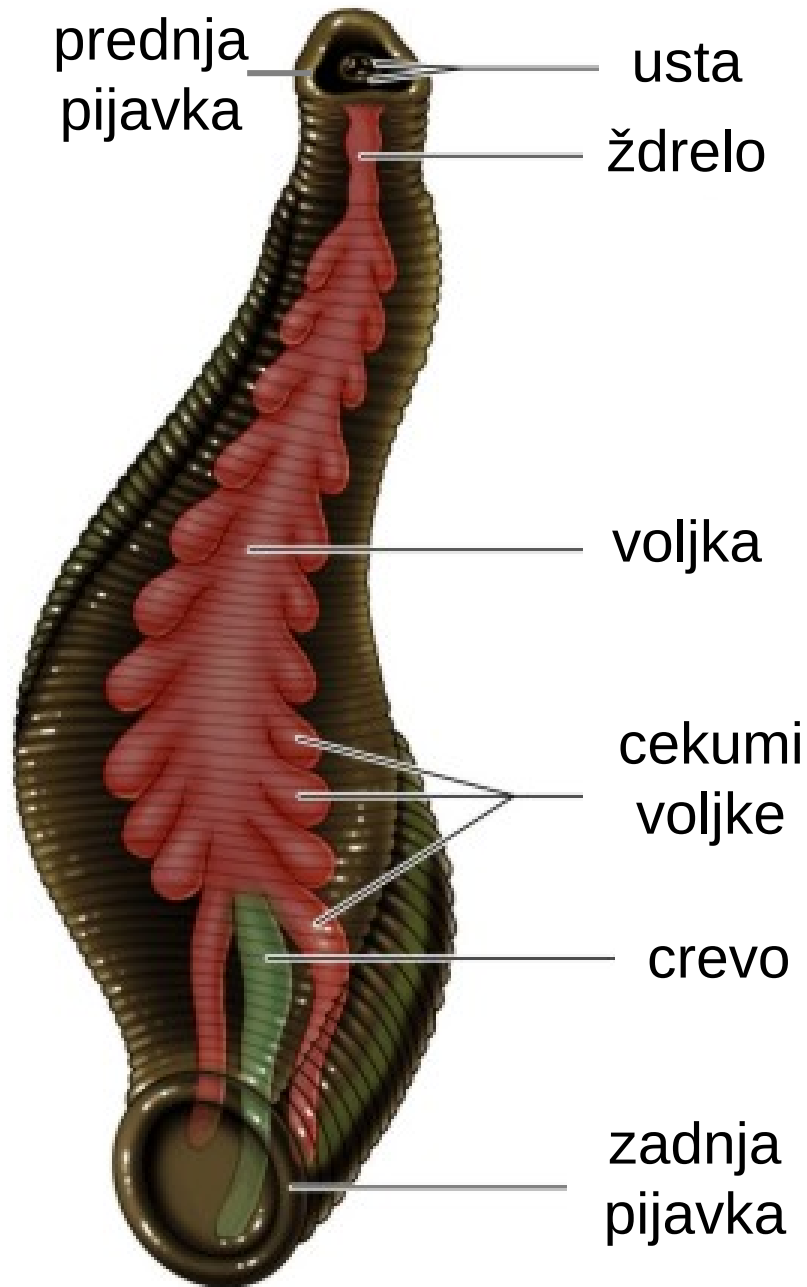


**Phylum:**  
**Annelida**  
**Classis**  
**Oligochaeta**

***Lumbricus  
terrestris***



1. Tiflozolis, 2. Parietalni peritoneum, 3. Crevo, 4. Hloragogeno tkivo,  
5. Metanefridija, 6. Ventralni krvni sud, 7. Nefridiopora, 8. Subneuralni krvni sud,  
9. Ventralna nervna lestvica, 10. Hete, 11. Celom, 12. Epidermis,  
13. Dorzalni krvni sud, 14. Kružni mišići, 15. Uzdužni mišići.



**Phylum: Annelida**

**Classis: Hirudinea**

***Hirudo medicinalis***

**medicinska pijavica**