



Univerzitet u Beogradu
Fakultet veterinarske medicine

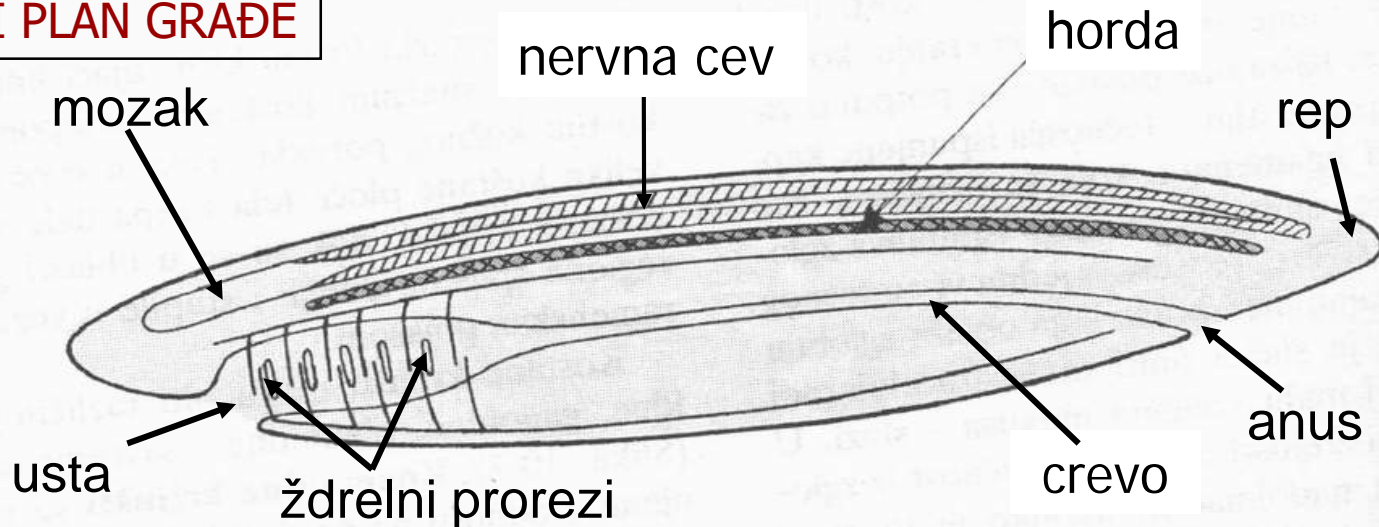
Katedra za biologiju

Predmet:
ZOOLOGIJA
2024/2025

Chordata
Chondrichthyes, Osteichthyes,
Amphibia i Reptilia

Phylum Chordata

OPŠTI PLAN GRAĐE



1. **HORDA**, skeletni organ endodermalnog porekla koji ima potpornu funkciju
2. **CEVAST NERVNI SISTEM** ektodermalnog porekla, u vidu šuplje cevi sa centralnim kanalom, dorzalno od horda
3. **ŠKRGE i PLUĆA ENDODERMALNOG POREKLA** (respiratorni organi su u vezi sa ždrelom jer se razvijaju na račun njegovog zida)
4. Žlezdani organ ždrela od koga je nastala tireoidna žlezda Vertebrata
5. Postanalno postavljen rep.

Phylum: **Chordata**

```
graph TD; A[Phylum: Chordata] --> B[Subphylum: Tunicata =Urochordata]; A --> C[Subphylum: Cephalochordata]; A --> D[Subphylum: Vertebrata];
```

Subphylum:
Tunicata
=Urochordata

Subphylum:
Cephalochordata

Subphylum:
Vertebrata

Phylum **Chordata**

Subphylum: **Tunicata**

Classis: **Asciacea** –
ASCIDIJE

Ascidia virginea

i

Ascidia mentula

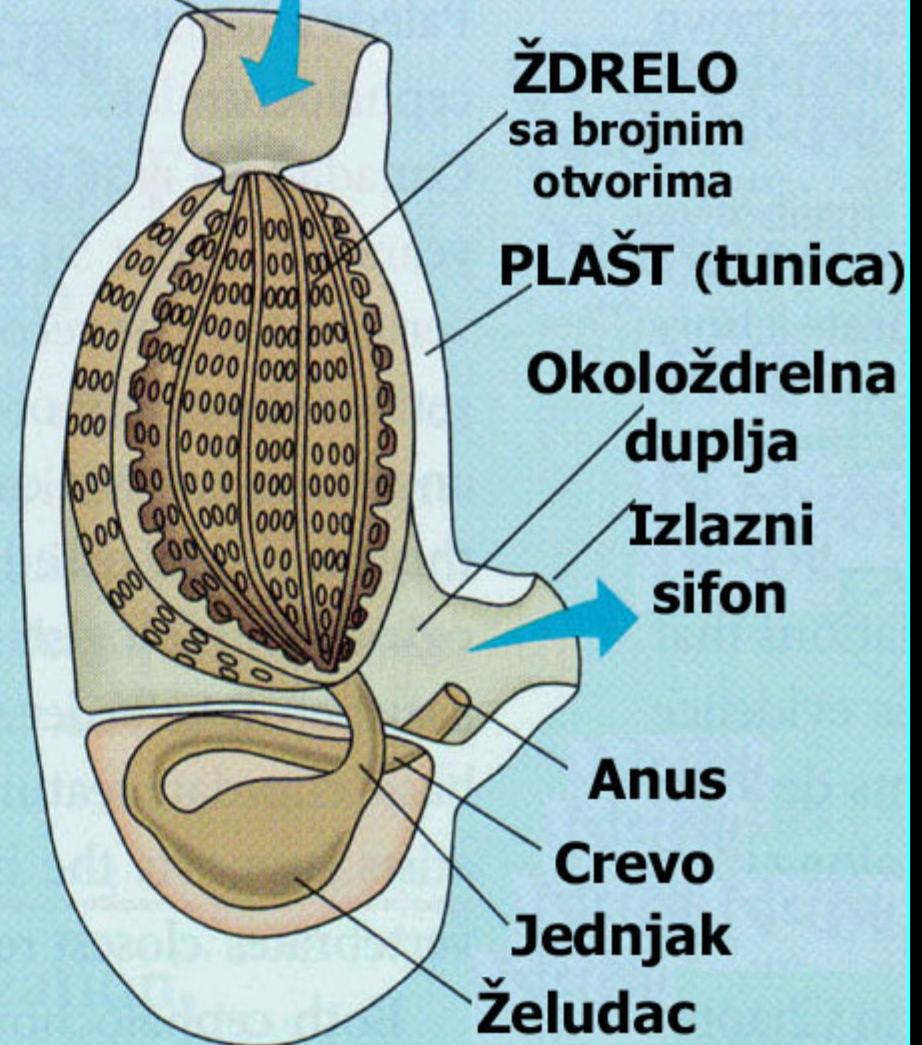


Classis: Ascidiacea

Građa ascidije



Ulazni sifon

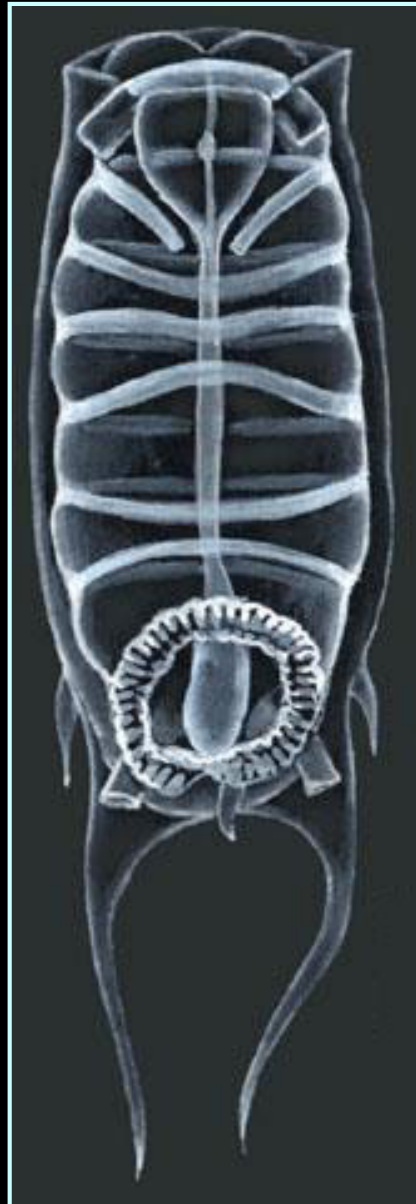
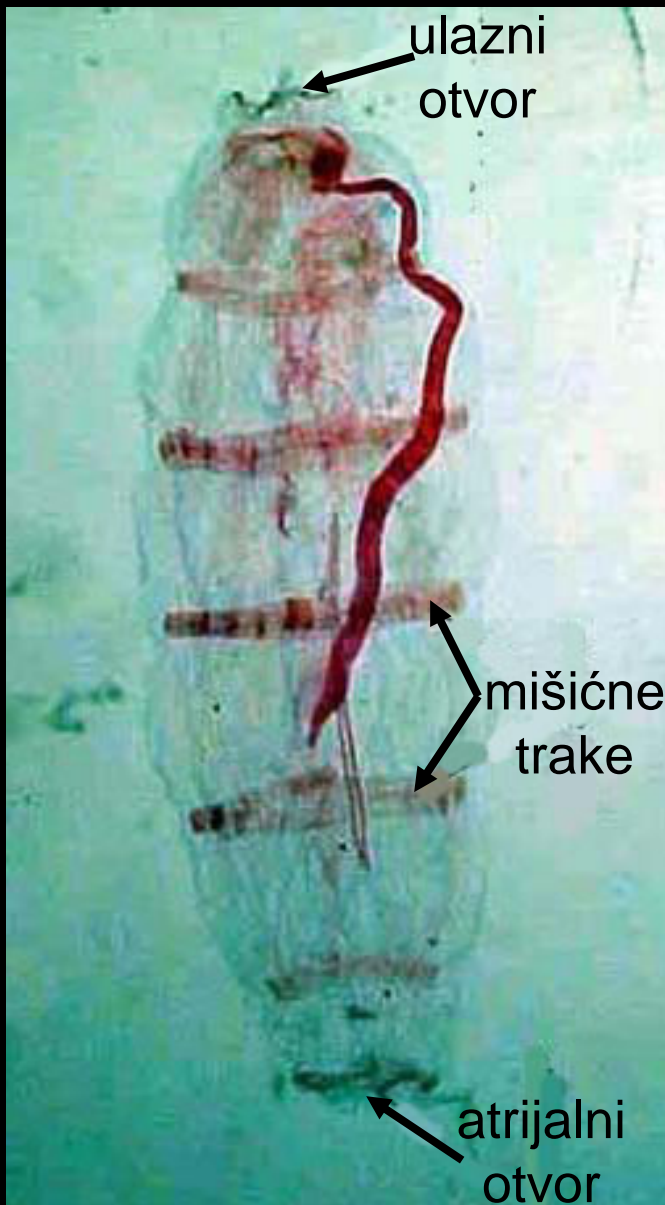


Phylum **Chordata**

Subphylum: **Tunicata**

Classis: **Thaliacea -
SALPE**

*Thalia
democratica*



Phylum **Chordata**

Subphylum: **Cephalochordata**

Branchiostoma lanceolatum - amfioksus



Phylum Chordata

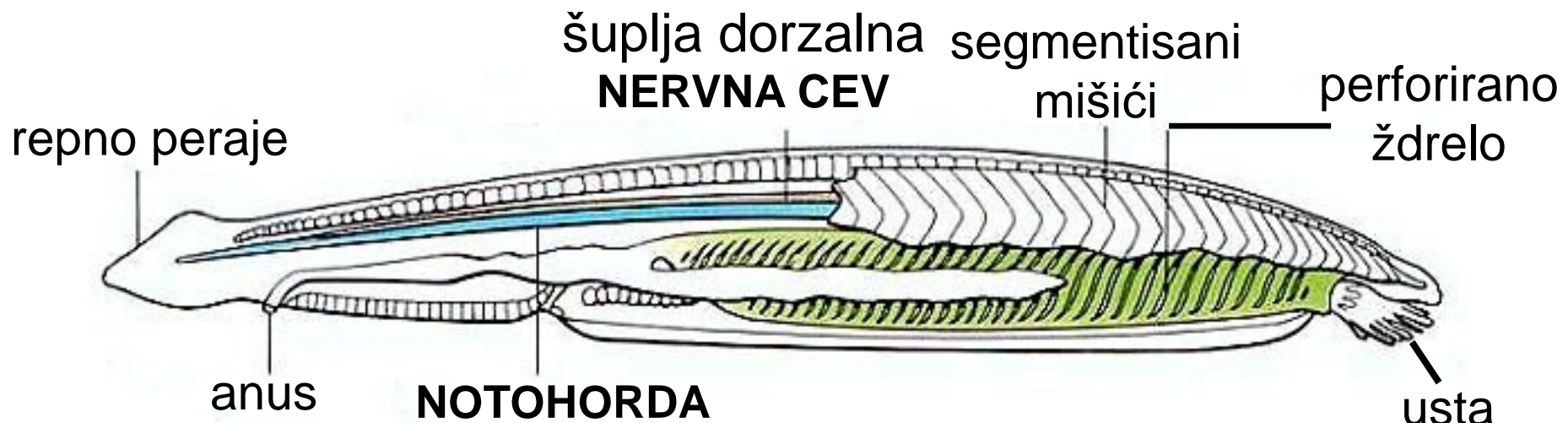
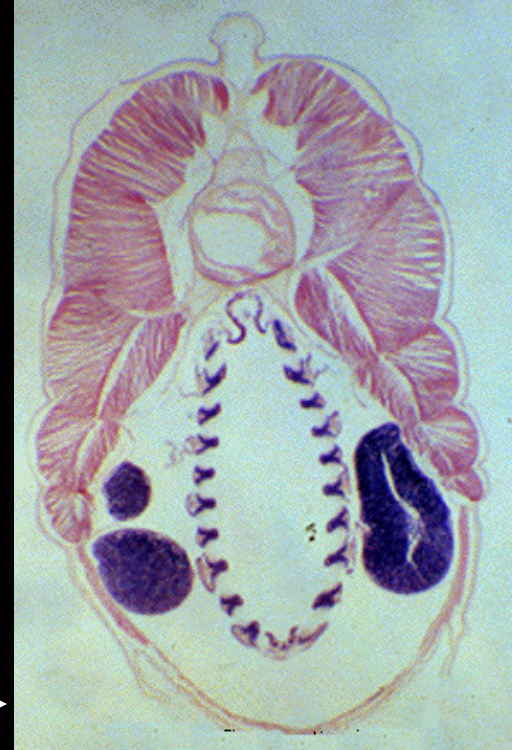
Subphylum: Cephalochordata

Građa tela amfioksusa

uzdužni presek



poprečni presek u nivou ždrela

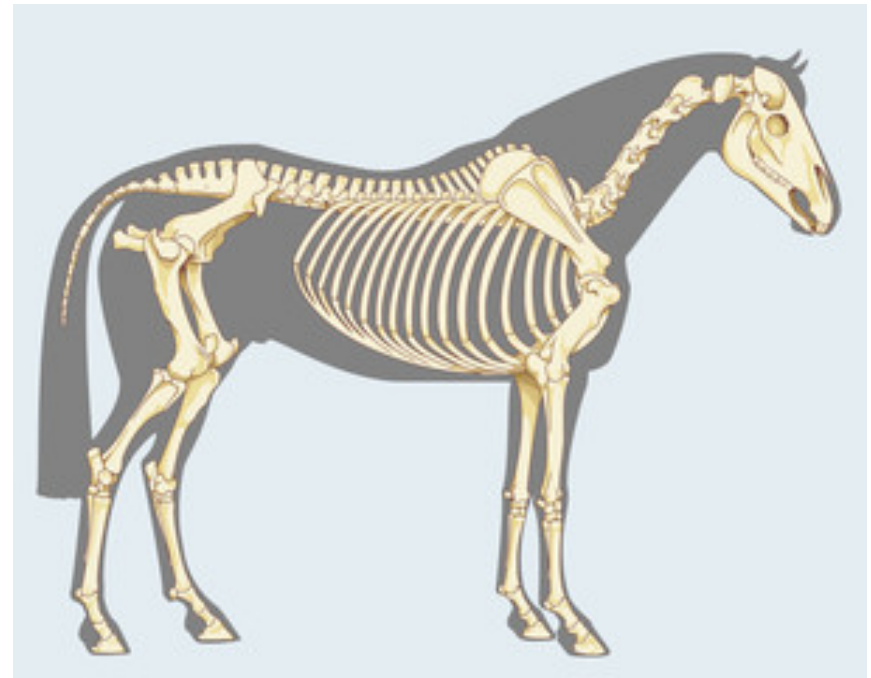


Subphylum:
Vertebrata

Čvrst hrskavičav ili koštan unutrašnji **osovinski skelet** koji je potisnuo hordu.

Osovinski skelet čine

- **kičmenica** (sastavljena od kičmenih pršljenova)
 - **glaveni skelet** (lobanjska čahura),
 - **grudna kost** i
 - **rebra.**
-
- Pored osovinskog skeleta potporu telu daje i **skelet ekstremiteta, skelet škržnog aparata ili visceralni skelet** i **kožni skelet**



Krvni sistem kičmenjaka je složen, **zatvorenog tipa sa srcem na trbušnoj strani i hemoglobinom u eritrocitima.**

Cefalizacija je jako izražena. Prednji deo nervne cevi proširen je u **mozak.**

Kičmenjake karakteriše progresivan razvoj **čulnih organa.**

Poseduju složen **ekskretorni sistem**, pri čemu se javljaju tri tipa bubrega koji se smenjuju u toku embrionalnog života, **pronefros, mezonefros i metanefros.**

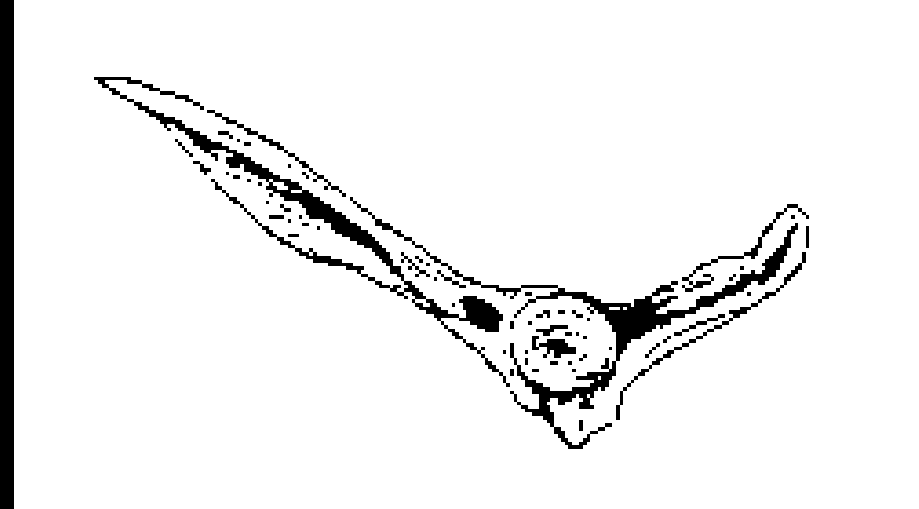
Reproduktivni sistem kičmenjaka sastoji se iz parnih polnih žlezda (gonada), polnih odvoda i kopulatornih organa koji omogućavaju uspešno parenje. Polne žlezde kičmenjaka su semenici (testisi) kod muškog pola i jajnici (ovariumi) kod ženskog pola.

TIPOVI PRŠLJENA VERTEBRATA

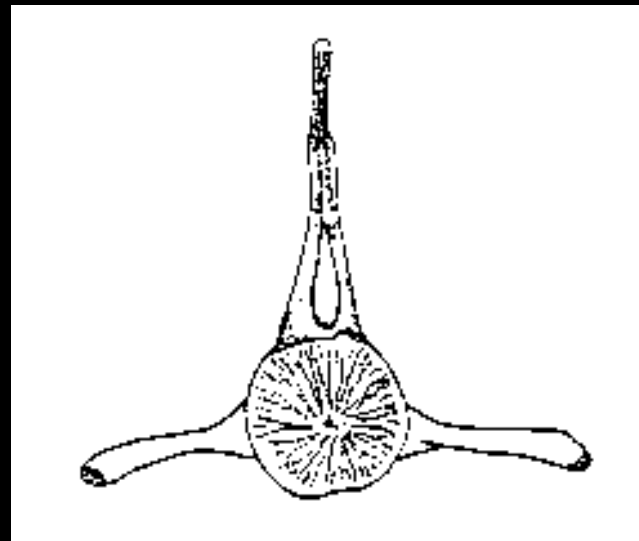
Kičmeni pršljen
košljoriba

**AMFICELNI TIP
PRŠLJENA**

Kičmeni pršljen
hrskavičavih riba

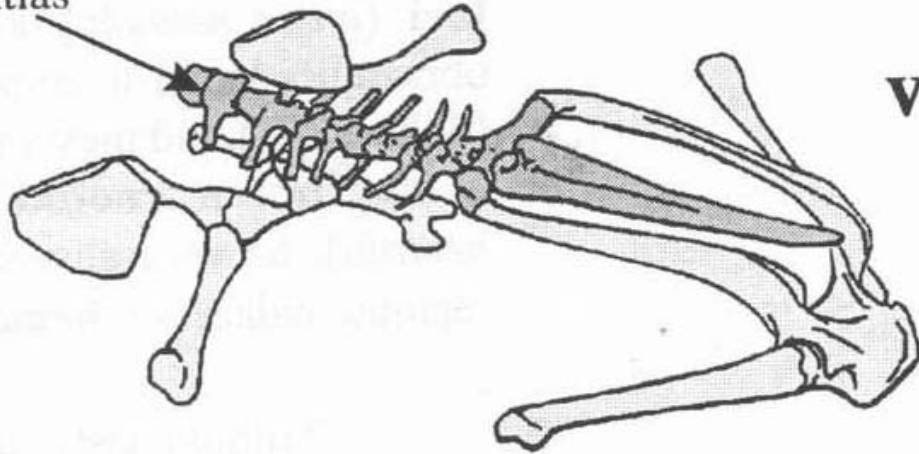


**PLATICELNI TIP
PRŠLJENA**



Kičmeni pršljen
delfina

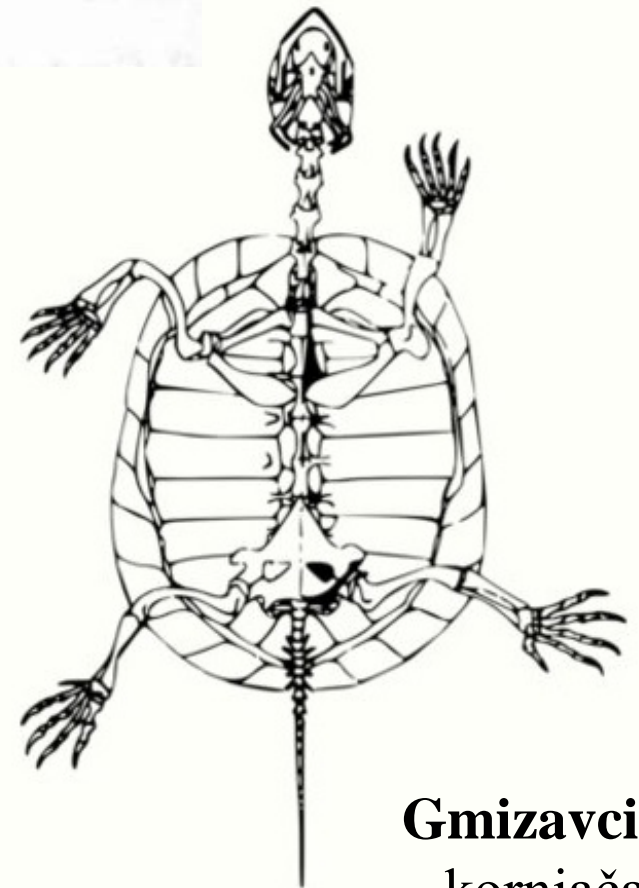
Atlas



Vodozemci - žaba

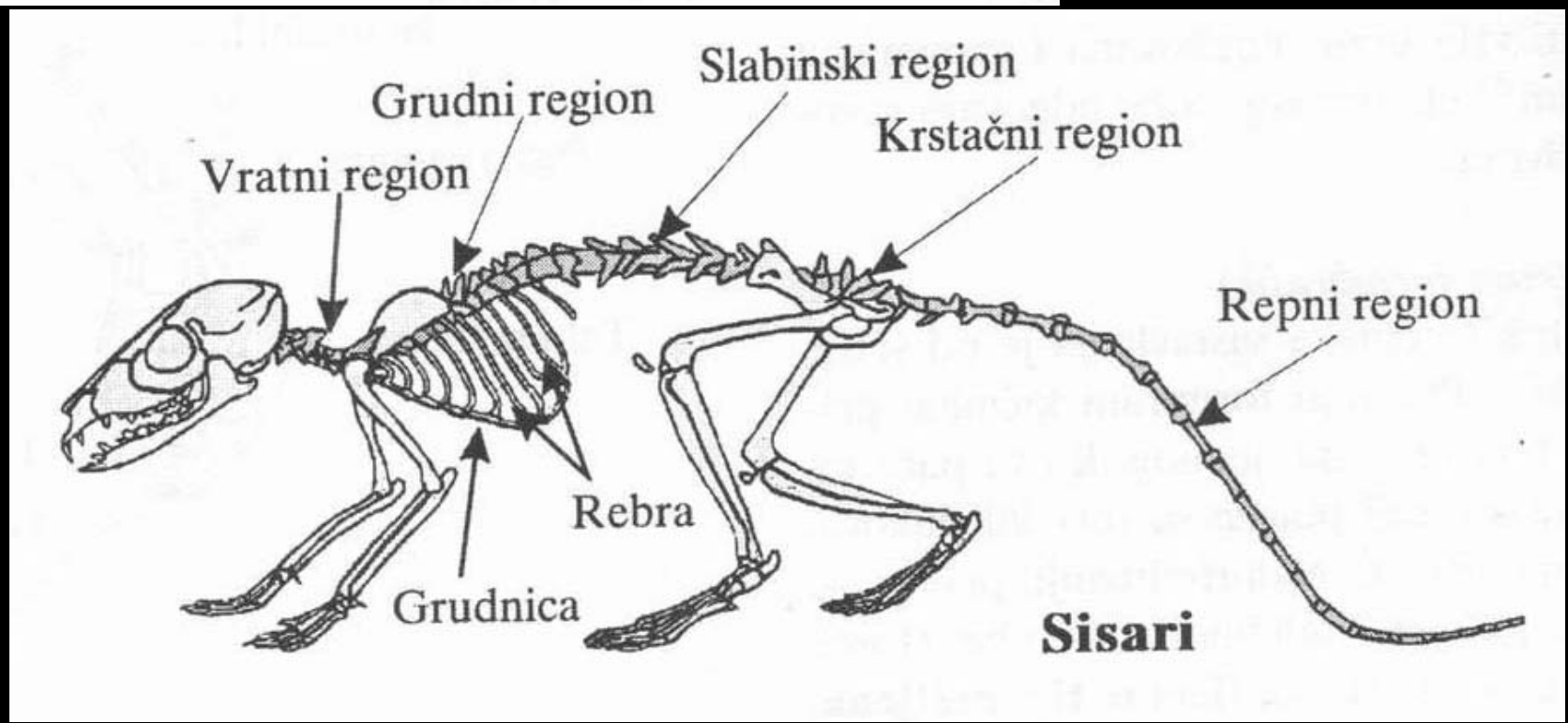
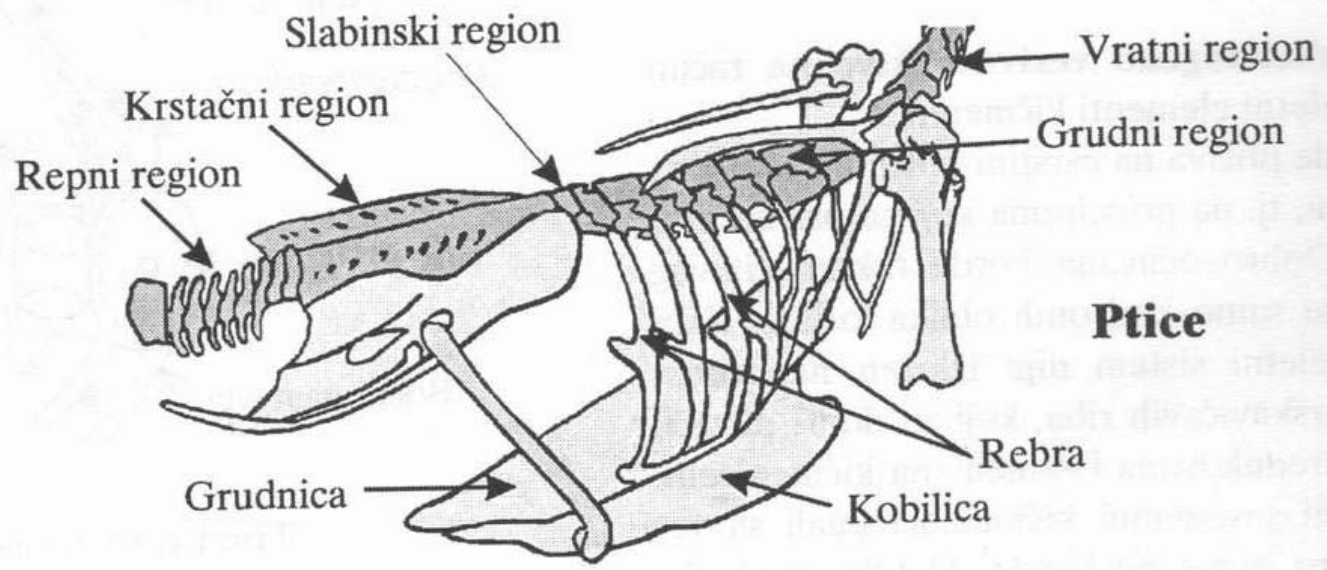
Regionalno
diferenciranje
kičmenice

(kod
**VODOZEMACA
I GMIZAVACA**)



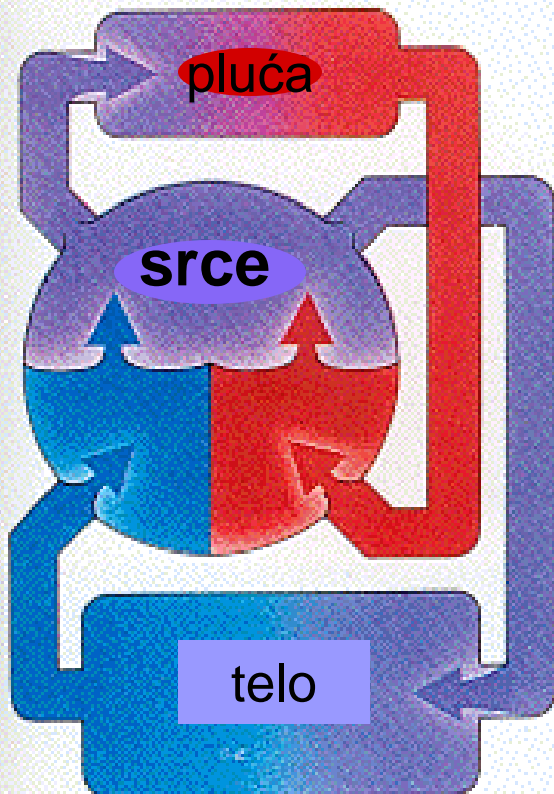
**Gmizavci
- kornjača**

Regionalno
diferenciranje
kičmenice kod
PTICA i SISARA

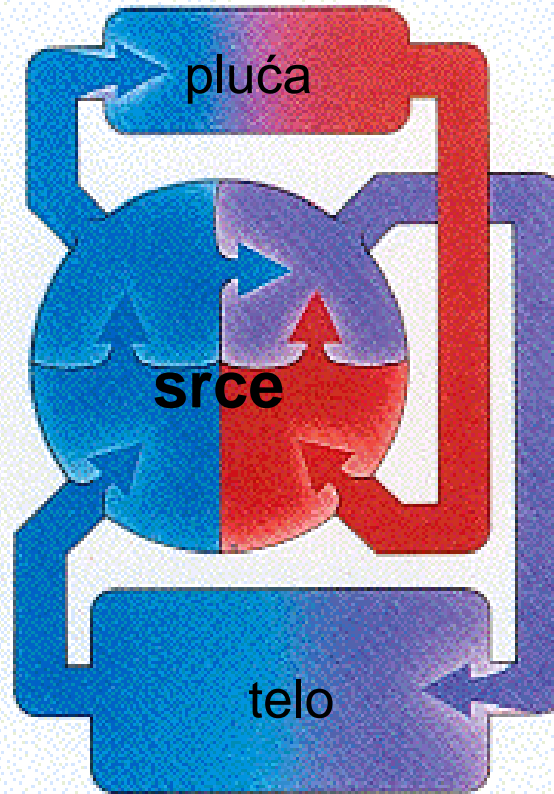


Evolutivne promene KRVNOG SISTEMA kod kičmenjaka

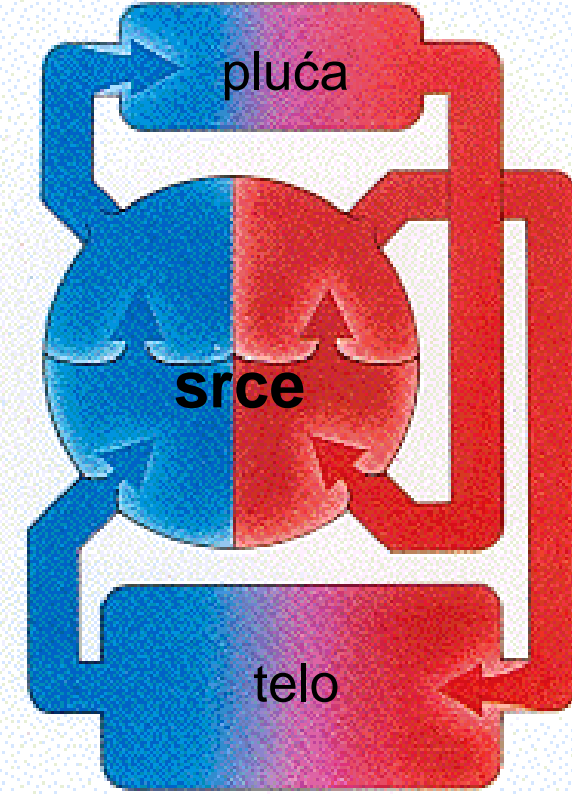
Vodozemci



Gmizavci



Sisari

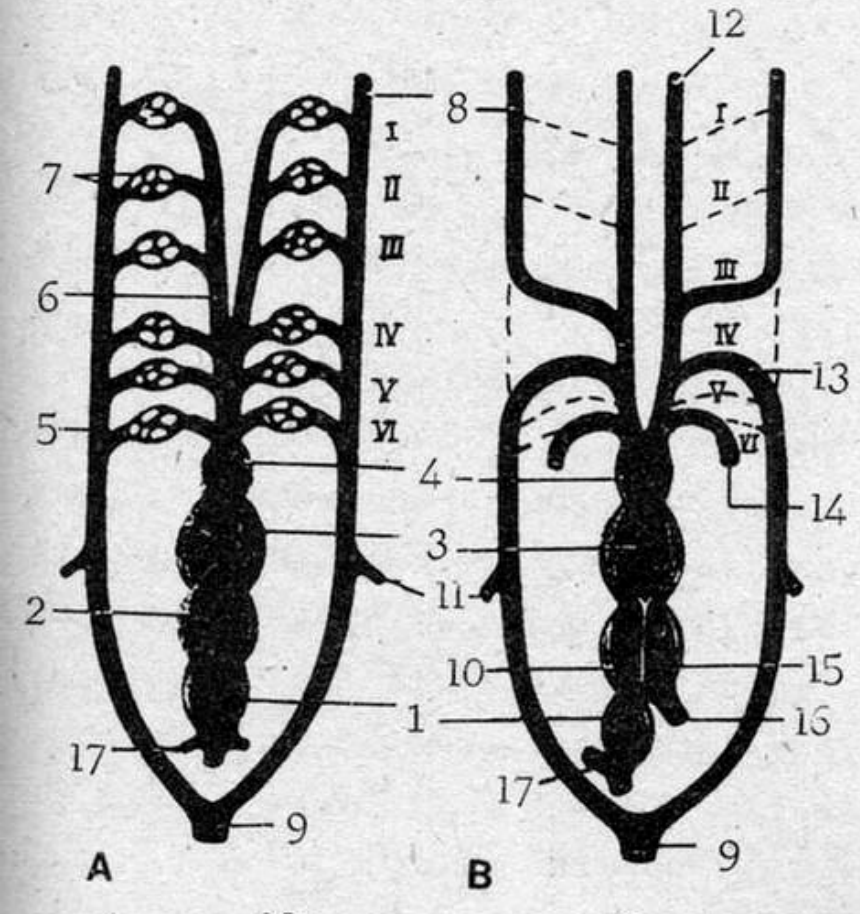


oksisgenisana krv

deoksisgenisana krv

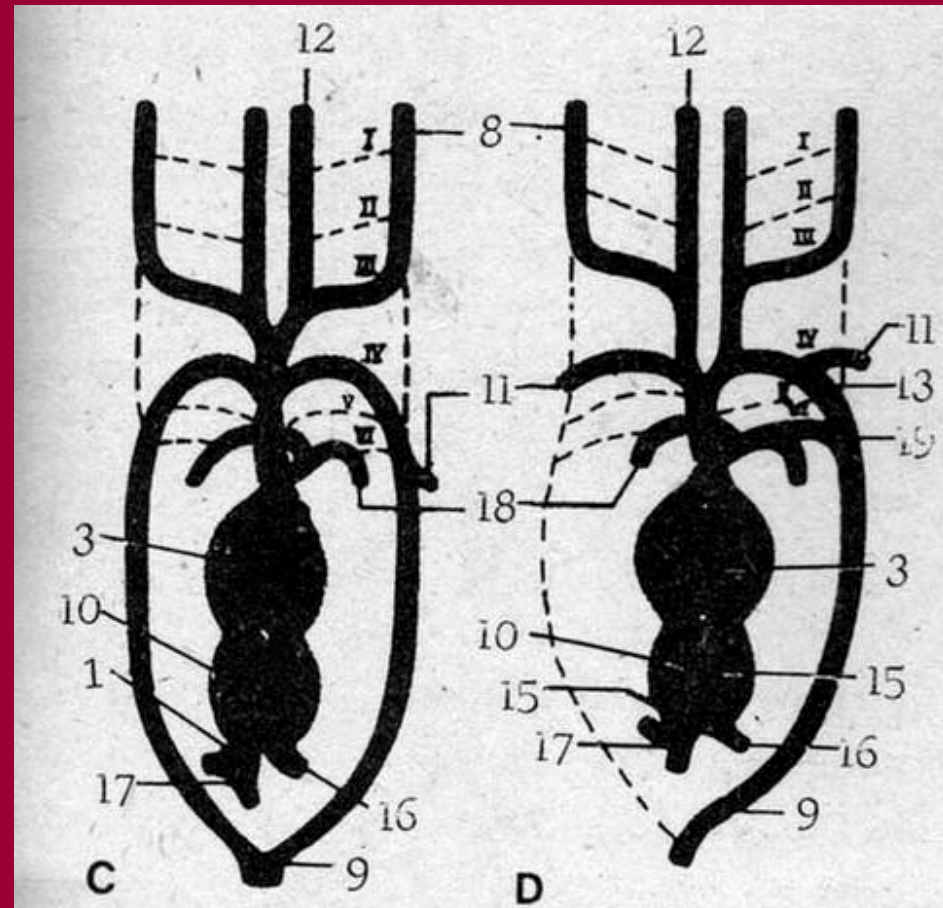
mešana krv

Evolutivne promene KRVNOG SISTEMA kod kičmenjaka



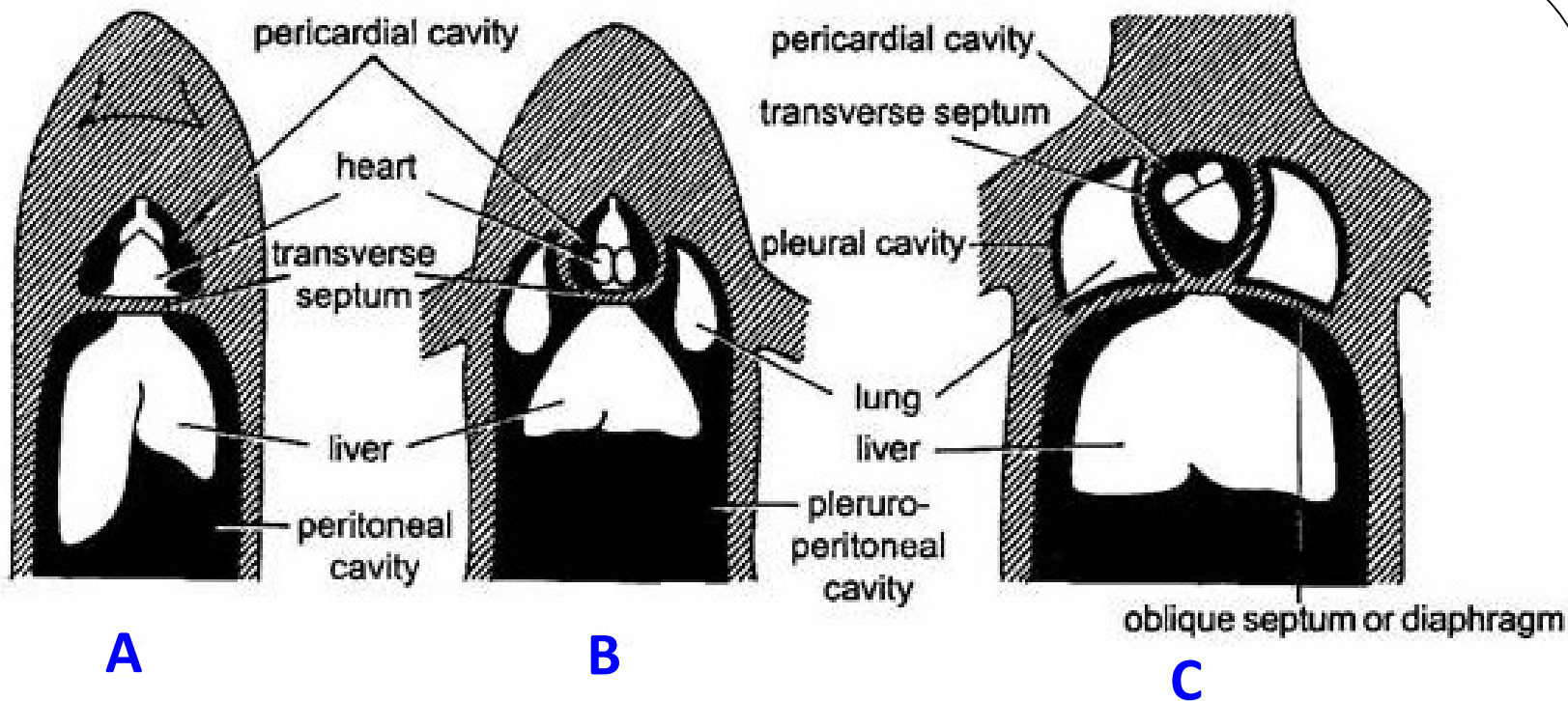
Aortini lukovi

- A) primitivnih riba
- B) vodozemaca
- C) gmizavaca
- D) sisara



Celom se kod kičmenjaka zadržao u trbušnoj duplji kao **prostor obavijen peritoneumom (peritonealna duplja)** i oko srca kao **perikard**.

↓
kod **SISARA** podeljena **dijafragmom**
na **grudnu i trbušnu duplju**



Celomske šupljine (**obojene crno**) kod kičmenjaka:

A) ribe; B) vodozemci i gmizavci; C) sisari

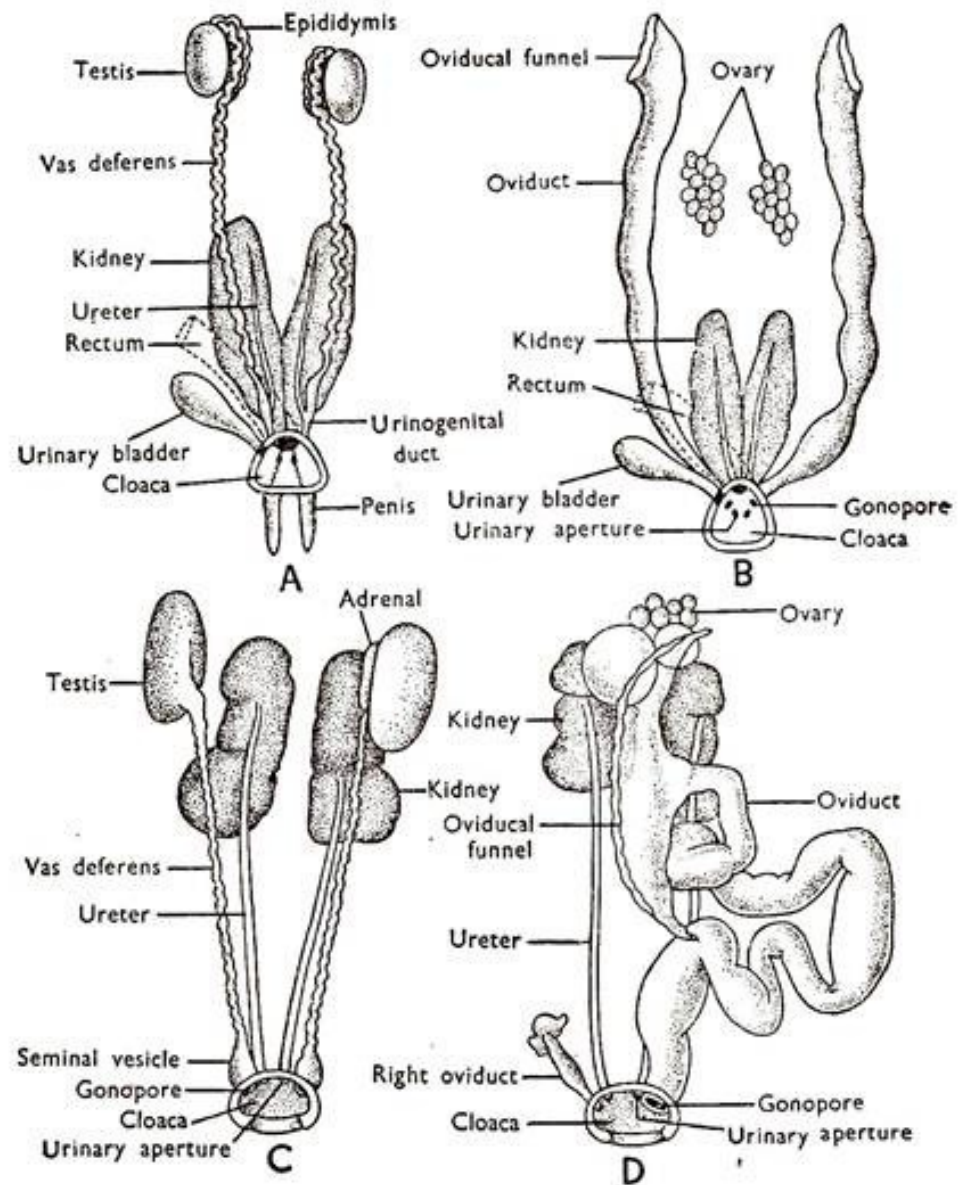
Ekskretorni i reproduktivni sistem

Tri tipa bubrega:

- pronefros
- mezonefros i
- metanefros

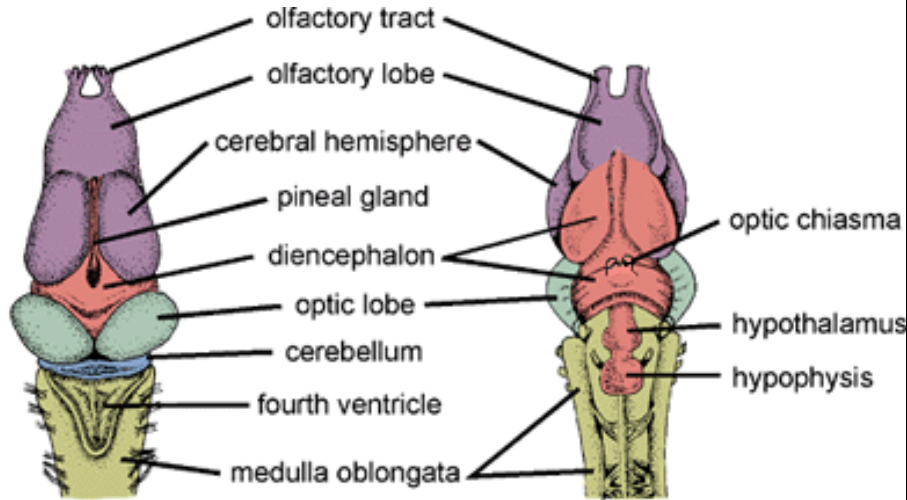
Kod kičmenjaka su **ekskretorni organi** **anatomski i funkcionalno tesno povezani sa polnim organima** pa je ovaj sistem organa označen kao **urogenitalni sistem**.

Veza između ova dva sistema sastoji se u tome što se polni elementi izvode ekskretornim odvodima.



Urogenitalni sistem

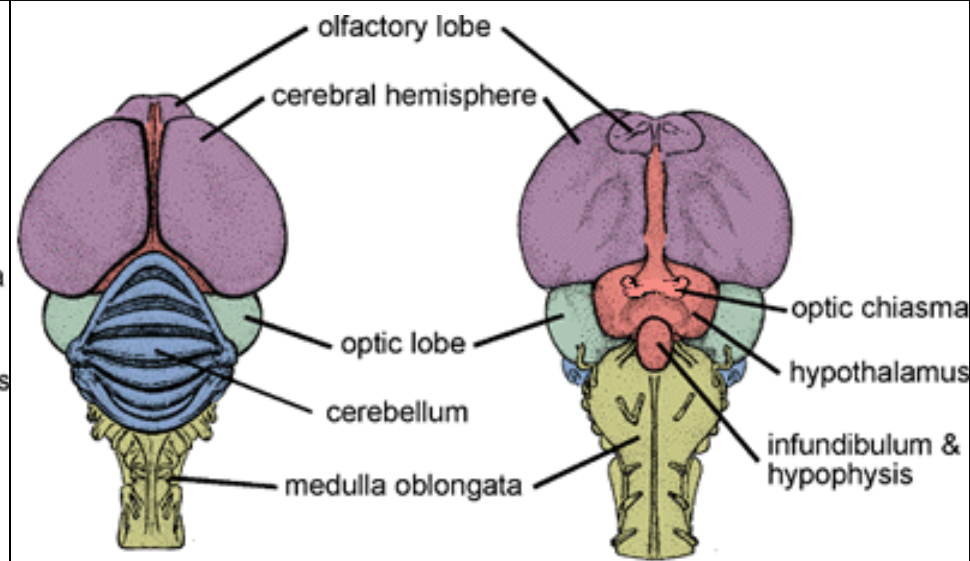
guštera (A – mužjaka, B – ženke)
i goluba (C – mužjaka i D – ženke)



Dorsal View

Ventral View

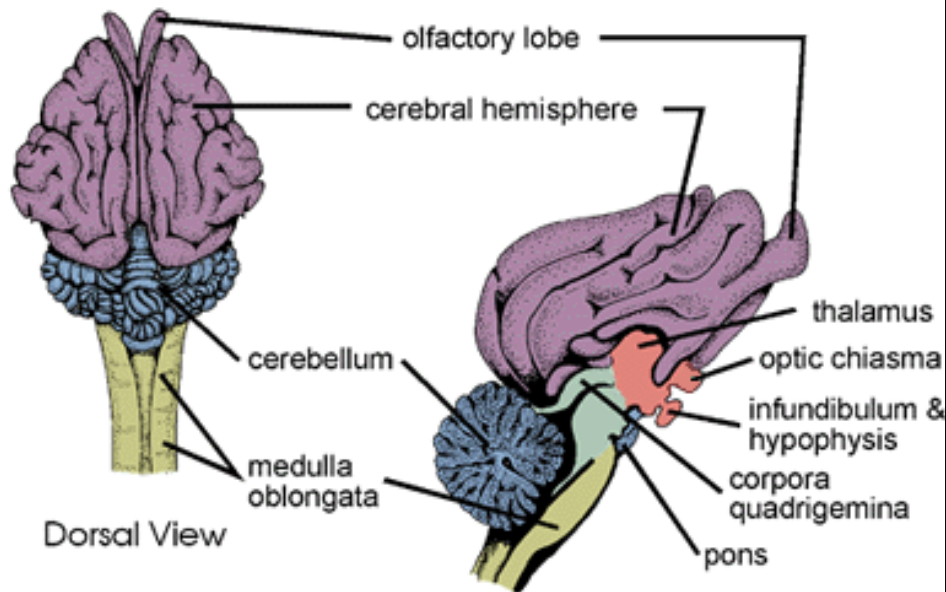
MOZAK VODOZEMCA



Dorsal View

Ventral View

MOZAK PTICE



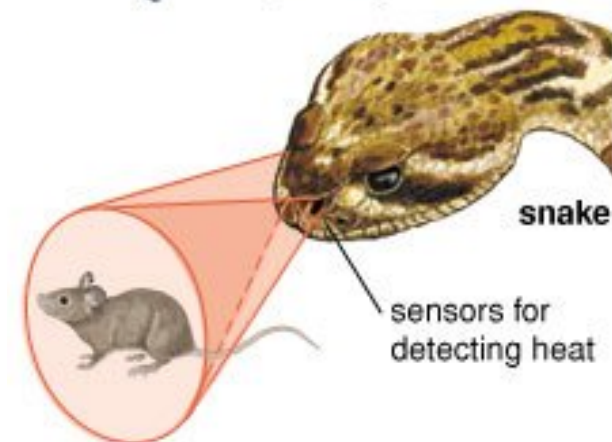
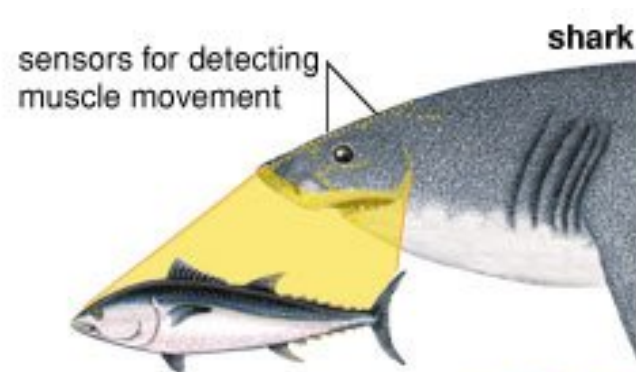
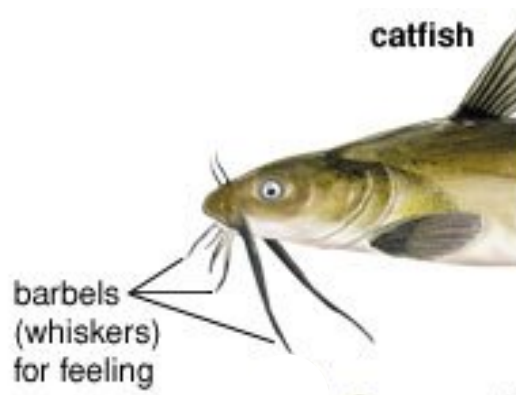
Dorsal View

Sagittal Section

MOZAK SISARA

Evolutivne promene NERVNOG SISTEMA kod kičmenjaka

Kičmenjake karakteriše progresivan razvoj čulnih organa.



Prema **tipu draži** na koje reaguju, razlikuju se četiri osnovne grupe čulnih organa:

(1) Čulni organi koji primaju **mehaničke draži**,
gde spadaju:

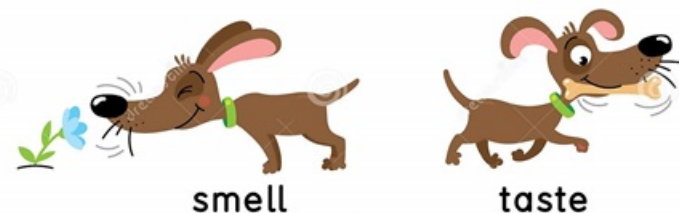
- taktilni organi i
- statoakustički organi;

(2) organi koji primaju **svetlosne draži** (oči);

(3) organi koji primaju **termičke draži** i

(4) organi koji primaju **hemijske draži**:

- olfaktorni (**mirisni**) organi i
- gustativni organi (organi **čula ukusa**)



Phylum Chordata

Subphylum **Vertebrata** (kičmenjaci)

- classis: Monorhina
- classis: Chondrichthyes
- classis: Osteichthyes
- classis Amphibia

ANAMNIA

- classis Reptilia
- classis Aves
- classis Mammalia

AMNIOTA

Phylum: **Chordata**

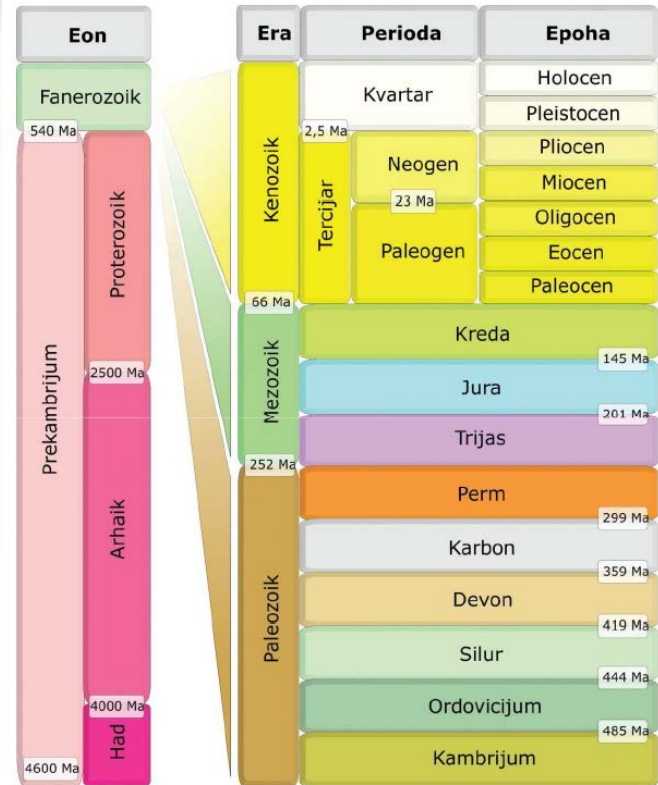
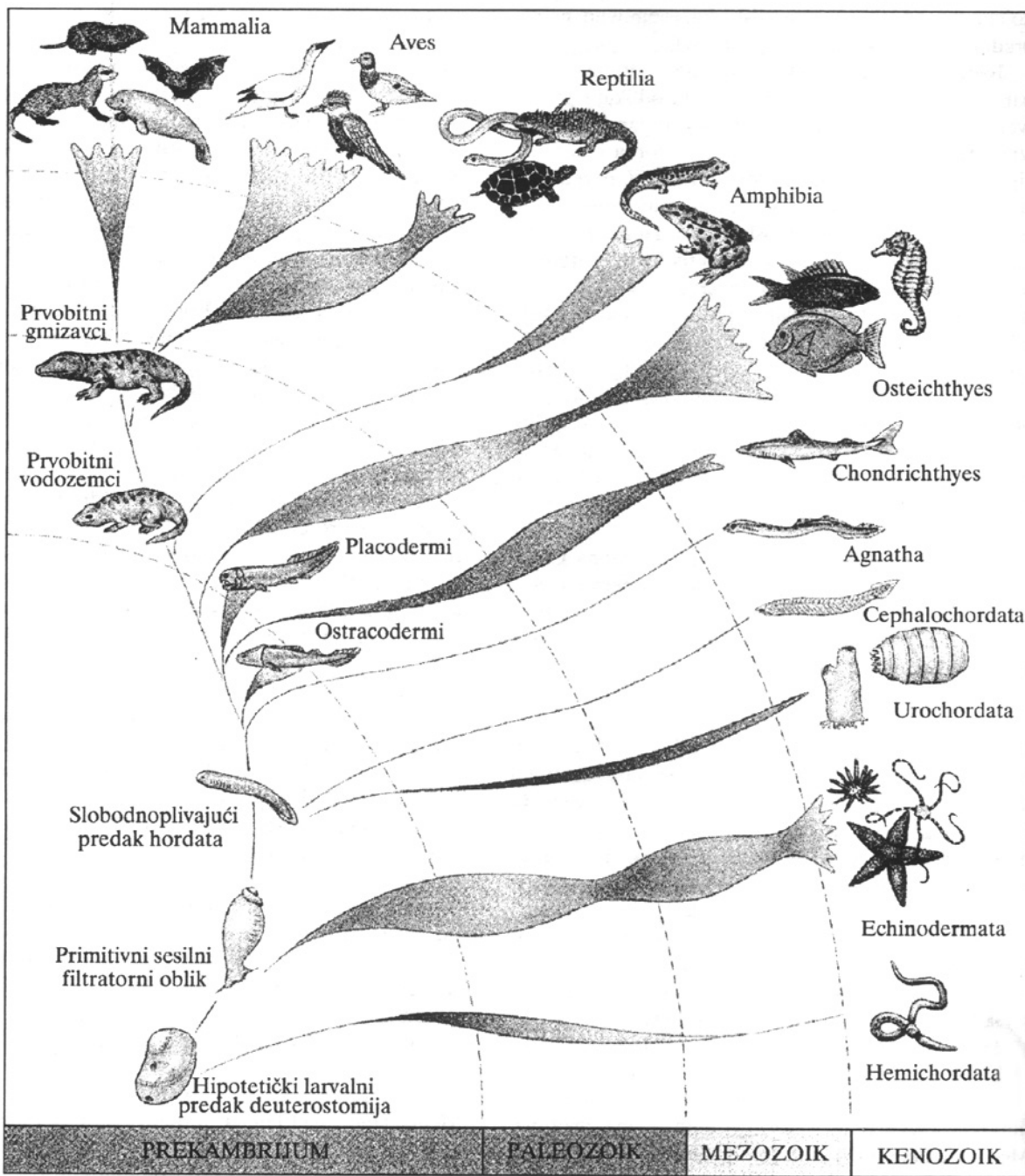
Subphylum: **Vertebrata**

Superclassis:
Agnatha

- Classis: **Monorhina**

Superclassis:
Gnathostomata

- Classis: **Chondrichthyes**
- Classis: **Osteichthyes**
- Classis: **Amphibia**
- Classis: **Reptilia**
- Classis: **Aves**
- Classis: **Mammalia**



SLIKA 3.26 Geohronološka skala

Izvor: Opšta geologija. Gerzina i Carević, 2019

FILOGENIJA CHORDATA

Phylum Chordata

Subphylum: **Vertebrata**

Superclassis: **AGNATHA**

Classis: **Monorhina**

Subclassis: **Cyclostomata**



Usni otvor okruglastog oblika, bez vilica, sadrži mnogobrojne sitne rožne zubiće. Vode poluparazitski način života a njihov usni otvor, kojim se mogu pripijati za domaćina, stalno je otvoren.



Phylum Chordata

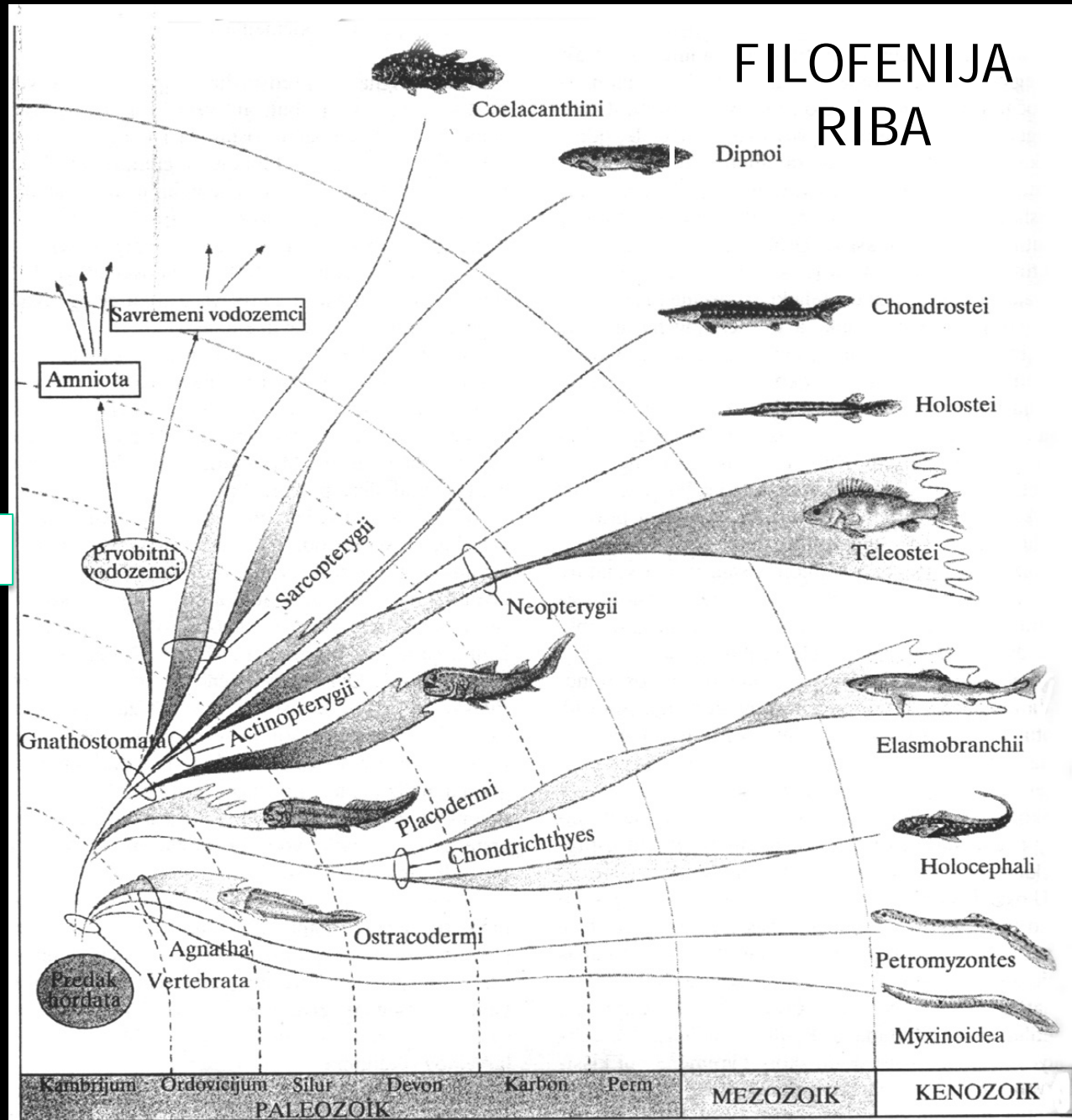
Subphylum:

Vertebrata

Superclassis:
GNATHOSTOMATA

Classis: **Chondrichthyes**

Classis: **Osteichthyes**



Classis: **Chondrichthyes**

Classis: **Osteichthyes**

Karakteristike riba

Ribe su isključivo vodene životinje, te im je telo u potpunosti prilagođeno kretanju kroz vodu:

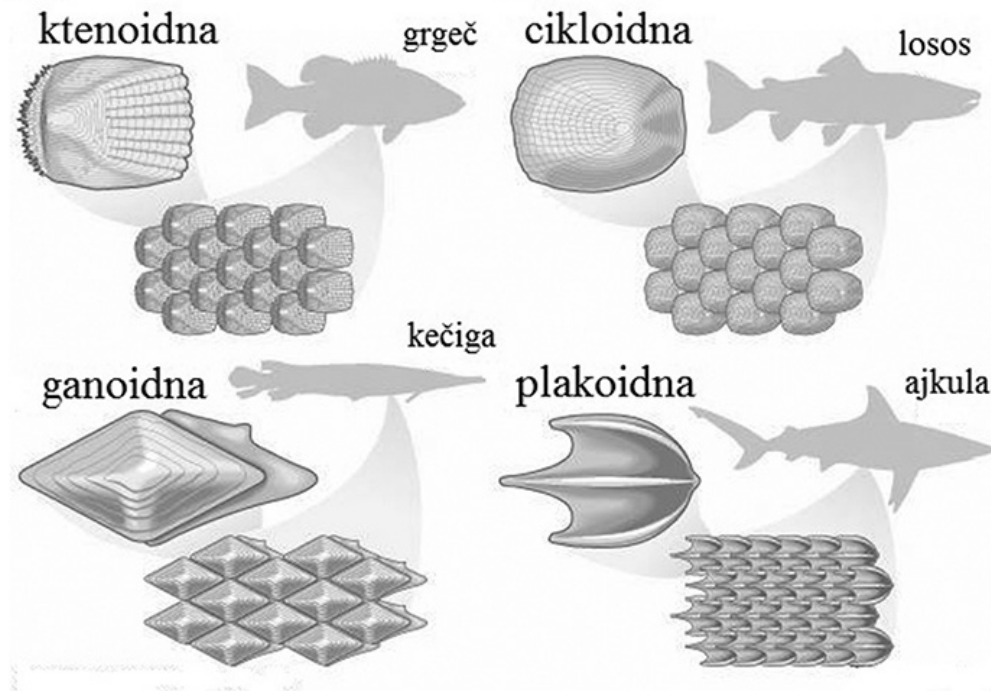
- **vretenastog** oblika (izuzeci - dorzoventralno spljošteni),
- pokriveno **bogatim slojem sluzi** i
- zaštićeno koštanim **krljuštima**.



Classis: **Chondrichthyes**

Classis: **Osteichthyes**

Krljušti riba koje su proizvod krzna su **kožne koštane tvorevine** i mogu biti: **plakoidne, ganoidne, cikloidne i ktenoidne**



Classis: **Chondrichthyes**

Classis: **Osteichthyes**

Građa tela - spoljašnja



Umesto udova, ribe za kretanje imaju

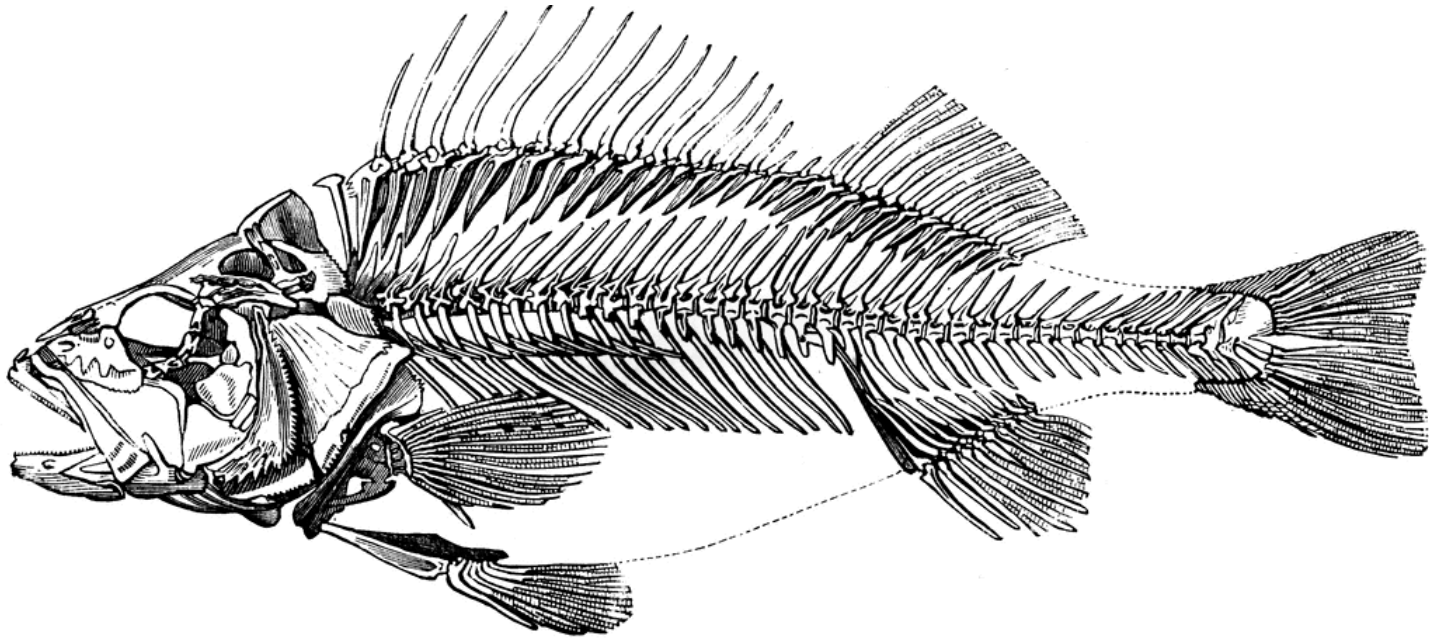
PERAJA:

- parna (grudna i trbušna)

- neparna (leđno, repno i analno)

Classis: **Chondrichthyes**

Classis: **Osteichthyes**



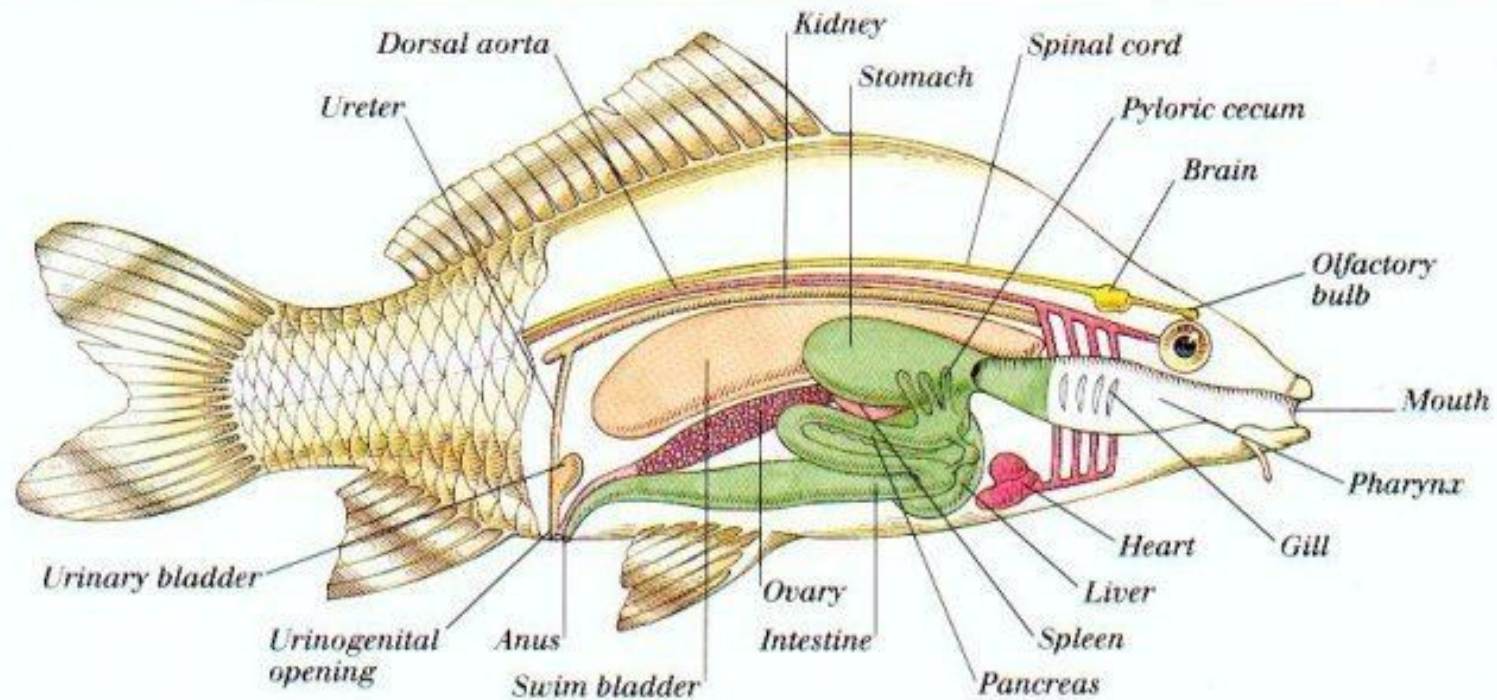
Skelet riba obuhvata:

- skelet glave,
- kičmenicu,
- rebra,
- skelet na koji se oslanjaju peraja i
- međumišićne kosti.

Classis: **Chondrichthyes**

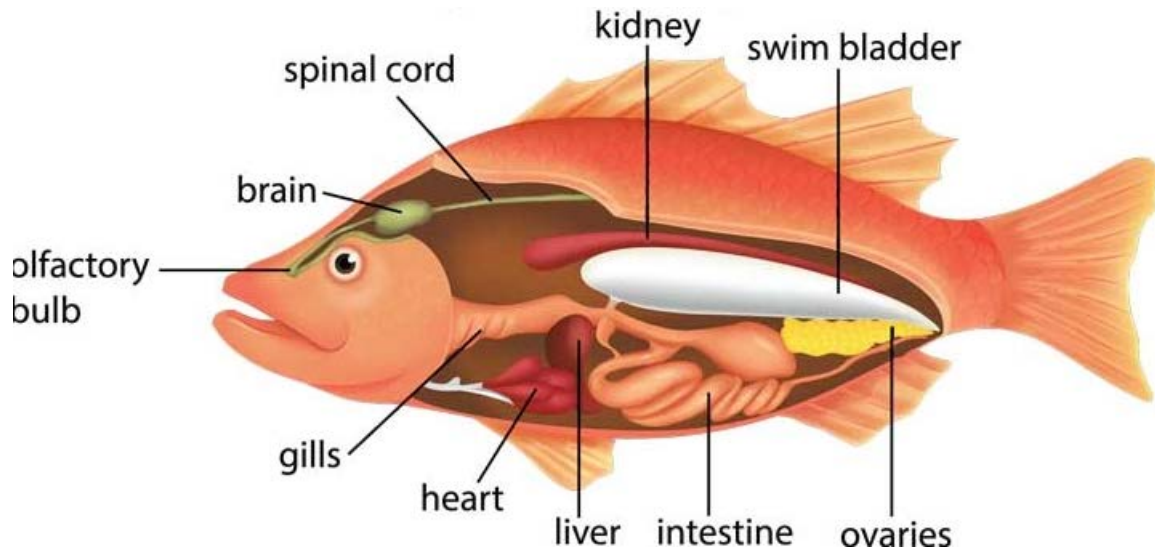
Classis: **Osteichthyes**

Grada tela - unutrašnja



Classis: **Chondrichthyes**

Classis: **Osteichthyes**



Škrge endodermalnog porekla služe za disanje.

Krvni sistem je zatvoren. **Srce ima jednu pretkomoru i jednu komoru**

Crevni kanal je potpun (usna duplja, ždrelo, jednjak, želudac, crevo, analni otvor).

Bubrezi riba su građeni po tipu mezonefrosa.

Classis: **Chondrichthyes** i

Classis: **Osteichthyes**



Centralni nervni sistem odlikuje se snažnim razvojem **srednjeg mozga**.

Od **čula** razvijeno je

- **čulo vida**,
- **čulo sluha i ravnoteže** objedinjeni u **statoakustički aparat**,
- **čulo mirisa**,
- **čulo ukusa** i
- dinamičko čulo – **bočna linija** pomoću koje ribe mogu da odrede pravac i jačinu strujanja vode.
- **Čulo za osećaj pritiska** je **riblji mehur**, ali postoji samo kod riba sa koštanim skeletom (cl: Osteichthyes).

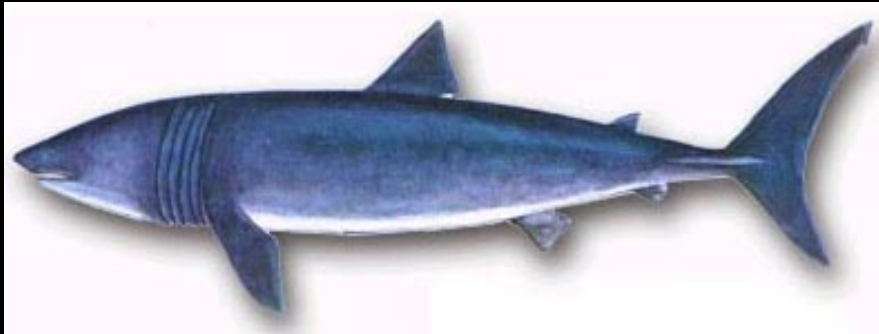
Čulne ćelije bočne linije **registruju odbijanje vode** od drugih živih bića i predmeta u okruženju.

Phylum **Chordata**

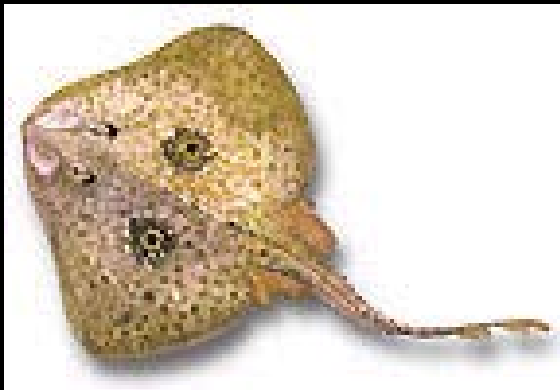
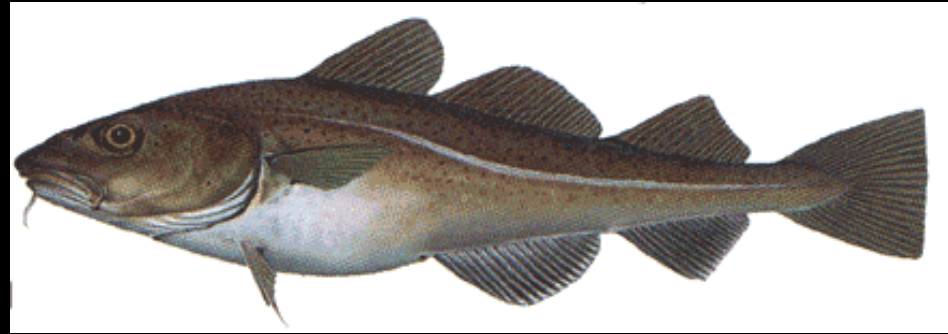
Subphylum **Vertebrata**

Superclassis: **GNATHOSTOMATA**

Classis: **Chondrichthyes**



Classis: **Osteichthyes**



Phylum **Chordata**

Subphylum **Vertebrata**

Superclassis: **GNATHOSTOMATA**

Classis: **Chondrichthyes**

1. hrskavičav skelet,
2. nemaju riblji mehur, hidrostatičku ulogu ima JETRA BOGATA ULJIMA

★ Najveći broj hrskavičavih riba pripada potklasi **Elasmobranchii** (**ajkule i raže**) kod kojih postoje:

1. heterocerkno (asimetrično) repno peraje,
2. plakoidne krljušti,
3. Imaju samo ŠKRŽNE PROREZE (najčešće 5 pari), bez škržnih poklopaca

Classis: **Osteichthyes**

1. koštani skelet,
2. imaju RIBLJI MEHUR
3. simetrično (homocerkno ili dificerkno) repno peraje, **osim kod Chondrostei**
4. nemaju plakoidne, nego ganoidne, cikloidne ili ktenoidne krljušti,
5. usta su apikalno postavljena (na prednjem vrhu glave), **osim kod Chondrostei**
6. IMAJU ŠKRŽNI POKLOPAC (*operculum*) koji štiti škrge smeštene u škržnoj komori ispod operkuluma

Phylum **Chordata**

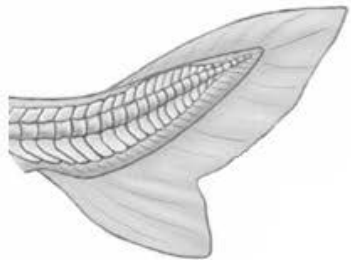
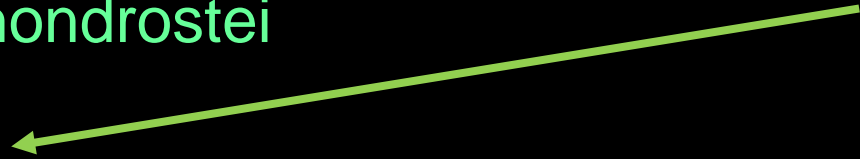
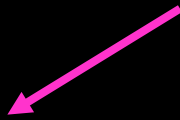
Subphylum **Vertebrata**

Superclassis: **GNATHOSTOMATA**

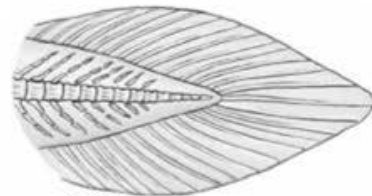
Classis: **Chondrichthyes**

Classis: **Osteichthyes**

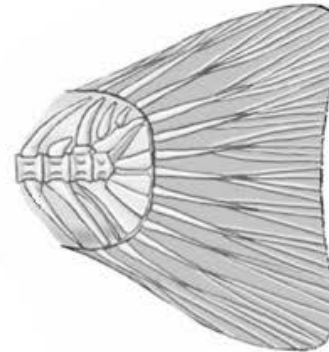
+Chondrostei



heterocerkno



dificerkno



homocerkna

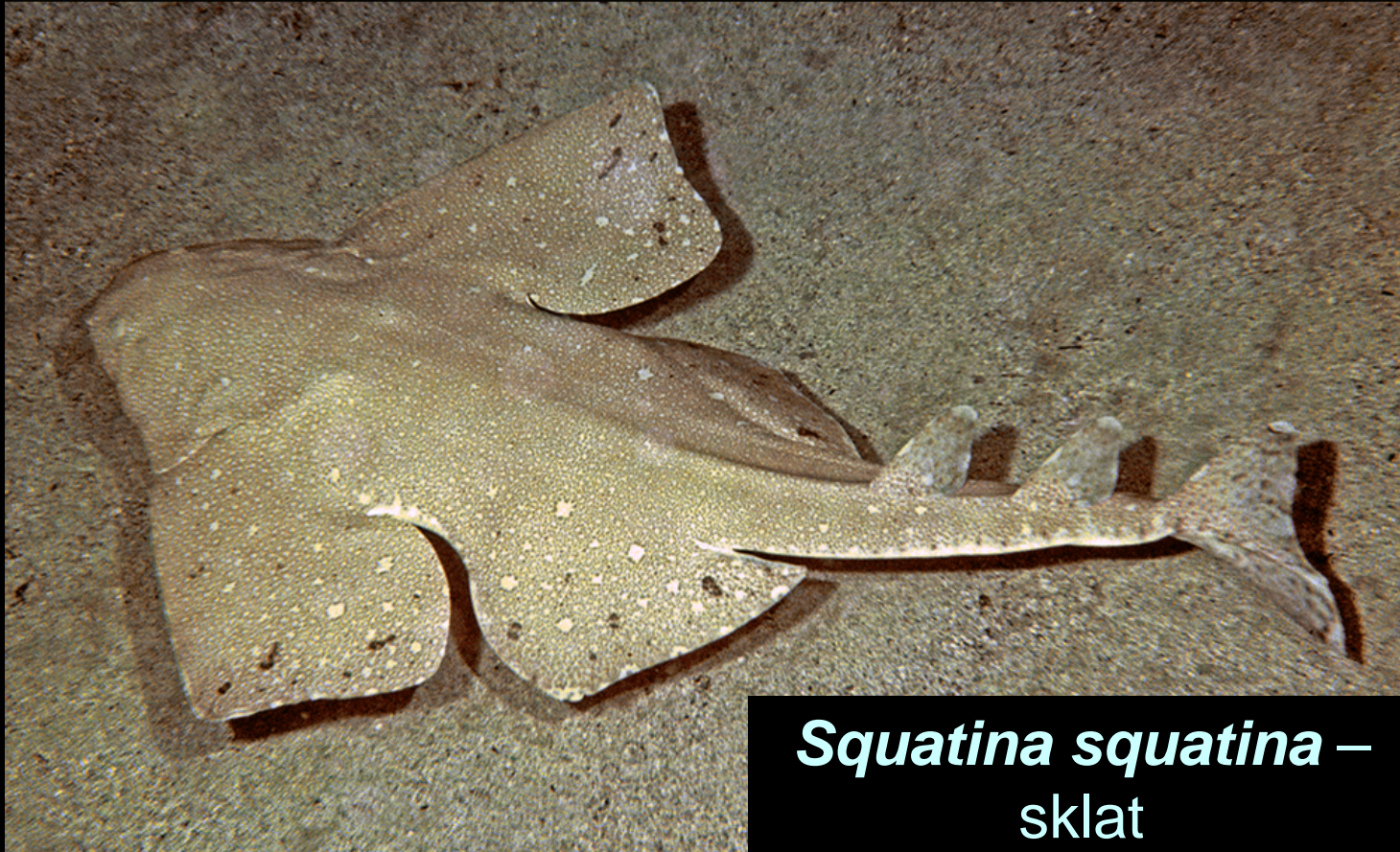


Classis: **Chondrichthyes**

Subclassis: **Elasmobranchii**

Ordo: Selachii! **Lamniformes**

Subordo: **Squaloidei**



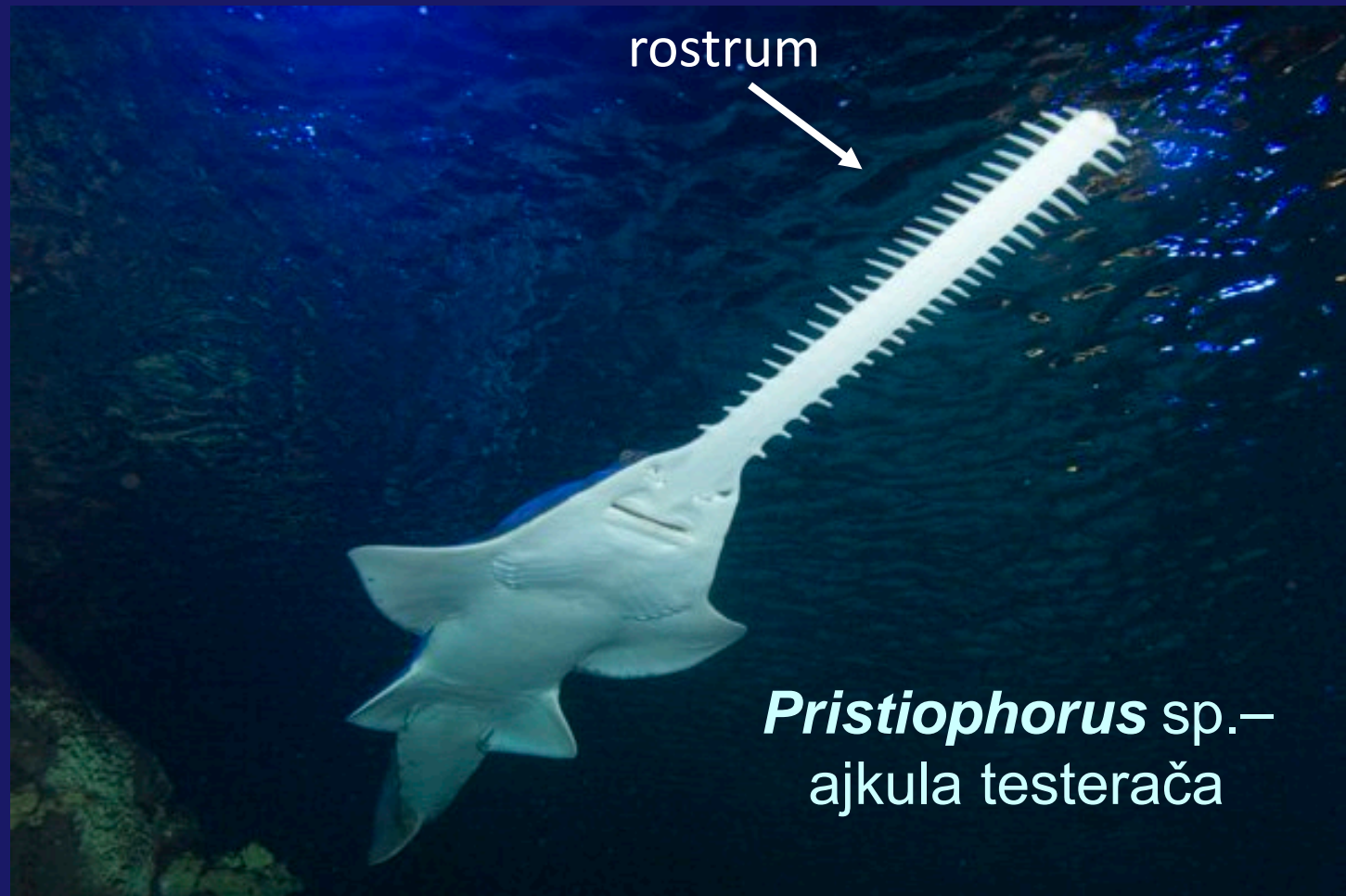
Squatina squatina –
sklat

Classis: **Chondrichthyes**

Subclassis: **Elasmobranchii**

Ordo: Selachii **!** Lamniformes

Subordo: **Squaloidei**



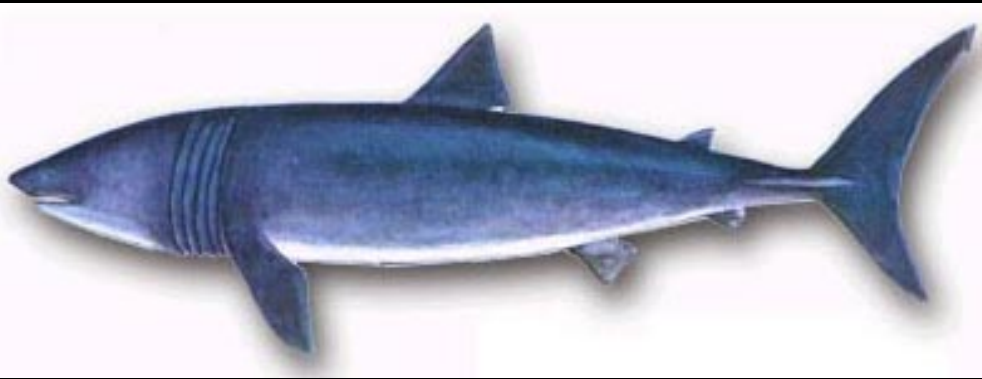
Pristiophorus sp. –
ajkula testerača

Classis: **Chondrichthyes**

Subclassis: **Elasmobranchii**

Ordo: Selachii **!** Lamniformes

Subordo: **Galeoidei**



Cetorhinus maximus –
džinovska ajkula

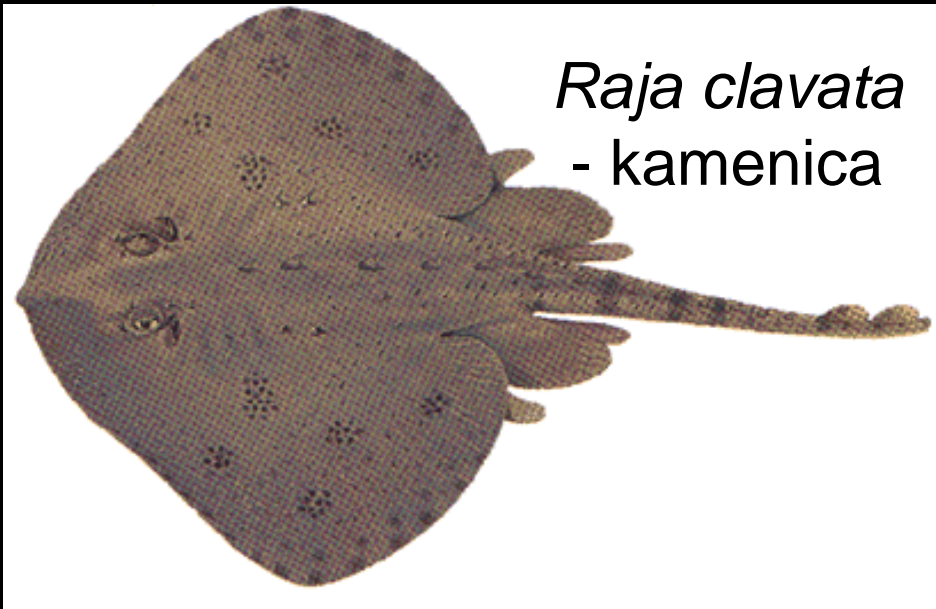


Sphyrna zygaena
– čekić riba

Classis: **Chondrichthyes**

Subclassis: **Elasmobranchii**

! Ordo: **Lamniformes**
! Subordo: **Batoidei**



Raja clavata
- kamenica



Torpedo
marmorata

Torpedo marmorata
- drhtulja

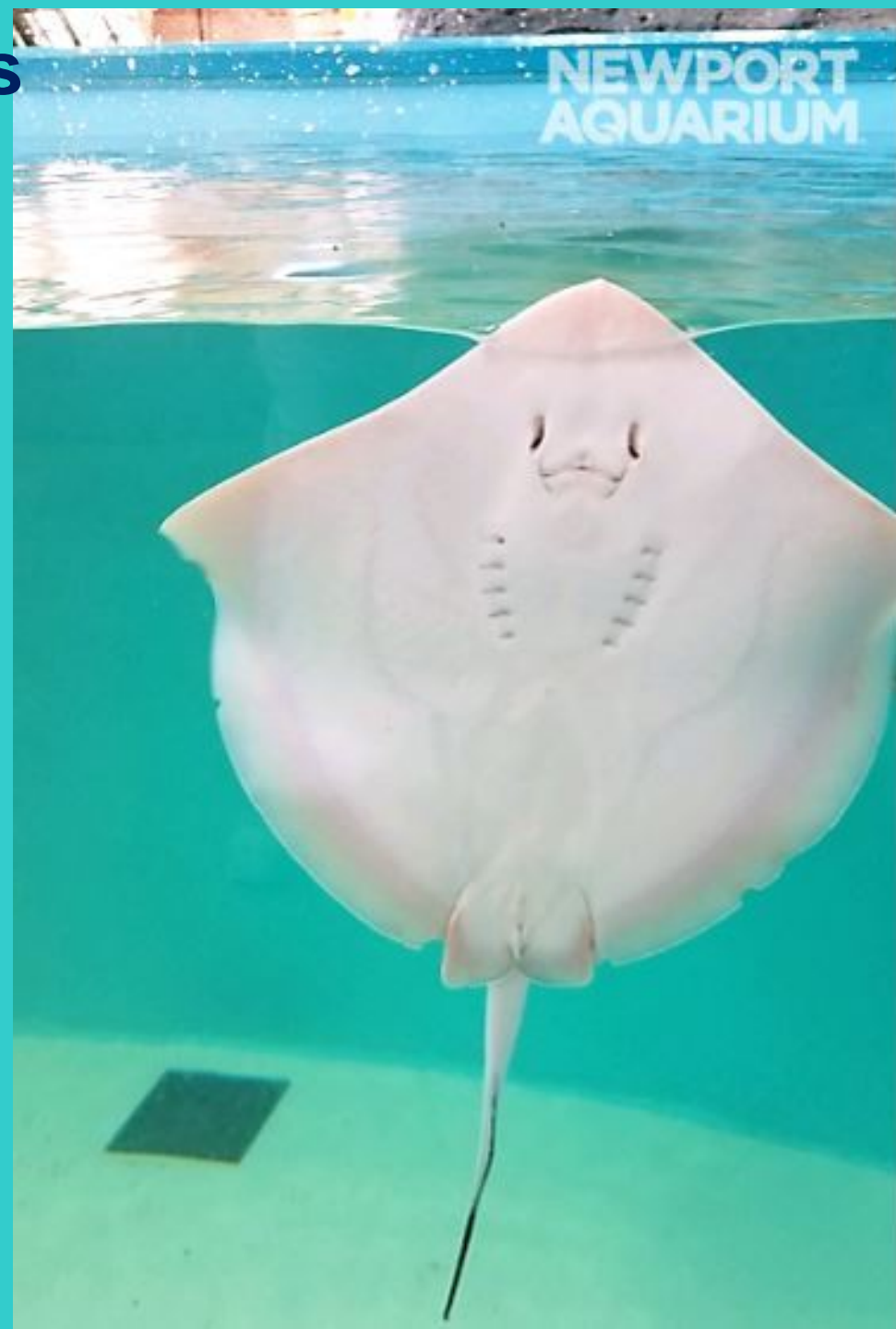
Classis: **Chondrichthyes**

Subclassis: **Elasmobranchii**

! Ordo: **Lamniformes**

! Subordo: **Batoidei**

Myliobatis aquila
– morski orao



Classis: **Chondrichthyes**

Subclassis: **Ellasmobranchii**

Ordo: **Lamniformes**

Subordo: **Batoidei**



*Manta (=Mobula)
birostris*

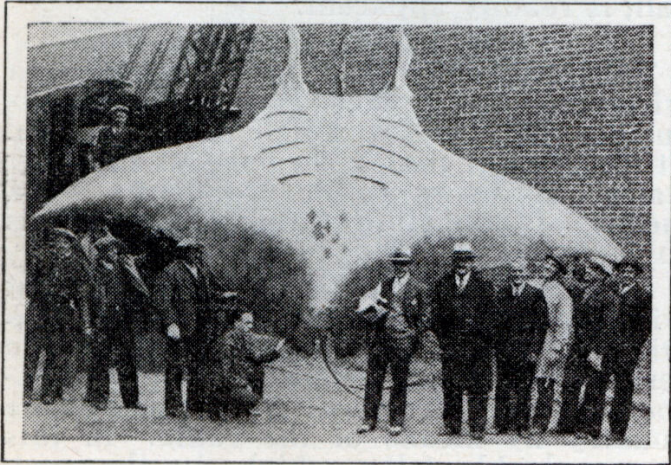
5,000-pound Devil Fish Is Caught

A GIANT Manta Devil Fish became entangled in the anchor and anchor rope of Captain A. L. Kahn's fishing boat while he was angling just off the shore of New Jersey, almost capsizing the heavy boat.

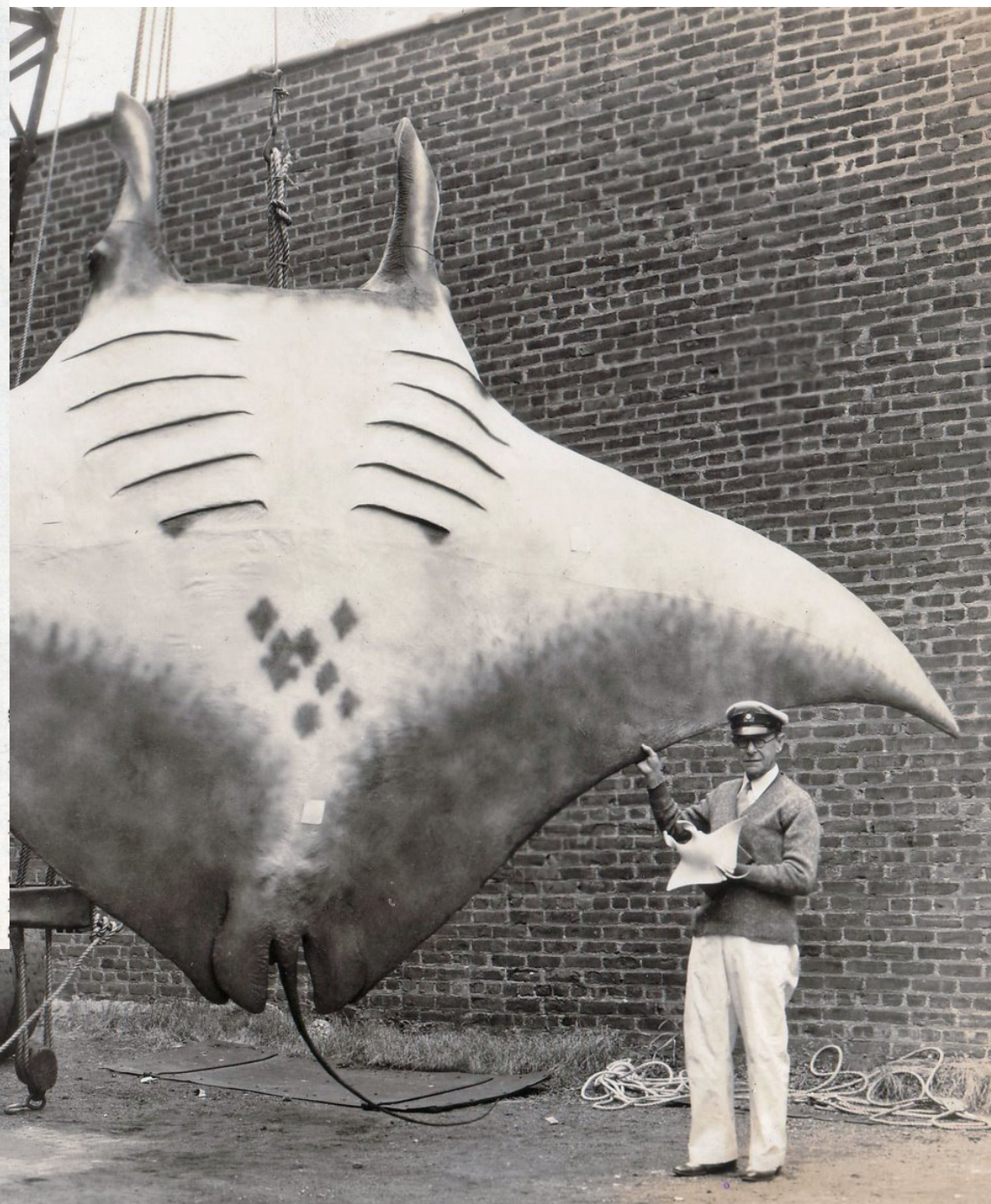
A Coast Guard vessel came to the rescue, and killed the 5,000-pound monster *Manta birostris* with 22 shots from a high-powered rifle. The sail-like fish has been mounted and placed on exhibition by Captain Kahn.

An 18-inch baby Manta was born shortly after the mother fish was dragged ashore.

These huge ray fish are seldom seen, since they live in the deepest parts of the sea.



5,000 pound Manta devil fish killed with high-powered rifle by Coast Guard after fish became entangled in anchor of fishing boat. Man in foreground holds 18-inch baby Manta which was born after mother was dragged to shore.



*Manta (=Mobula)
birostris*

manta, riba-dayo



Classis: **Chondrichthyes**

Subclassis: **Holocephali**

Ordo: **Chimaeriformes**

Chimaera monstrosa
morski pacov ili
„rabbit fish“



Classis: Osteichthyes

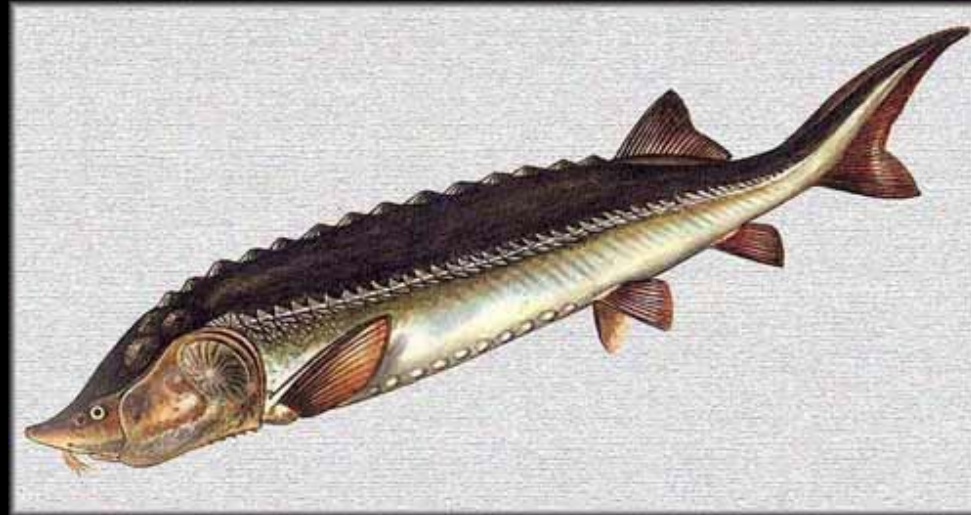
Subclassis: Actinopterygii

Infraclassis: **Chondrostei - štitonoše**

Ordo: Acipenseriformes
fam: Acipenseridae



***Acipenser ruthenus* - kečiga**



***Acipenser huso* - moruna**

Classis: Osteichthyes

Subclassis: Actinopterygii

Ordo: **Polypteriformes - mnogoperke** !

- leđno peraje podeljeno na 10 odeljaka
- romboidne ganoidne krljušti
- dificerkno repno peraje



Polypterus weeksii

Classis: Osteichthyes

Subclassis: Actinopterygii

Infraclassis: **Holostei**

Ordo: **Lepisosteiformes**

- romboidne ganoidne krljušti
- dificerkno repno peraje



Lepisosteus oculatus –
tačkasti gar



Lepisosteus platostomus – veliki gar

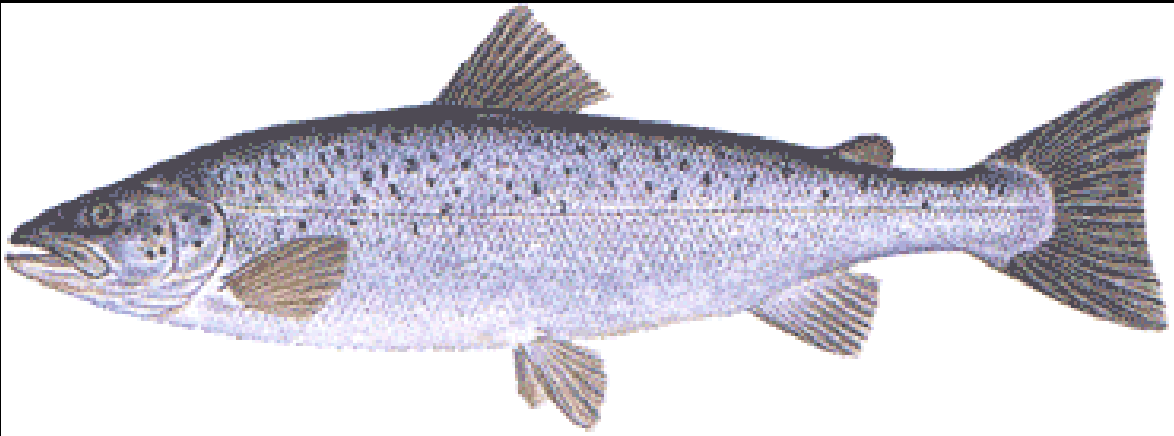
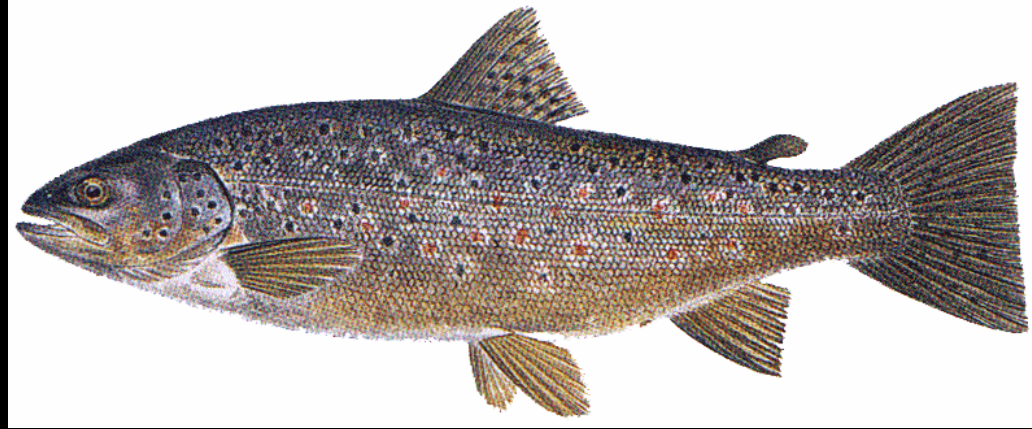
Classis: Osteichthyes

Subclassis: Actinopterygii

Infraclassis: Teleostei

Ordo: Salmoniformes
fam: Salmonidae

***Salmo trutta* - pastrmka**



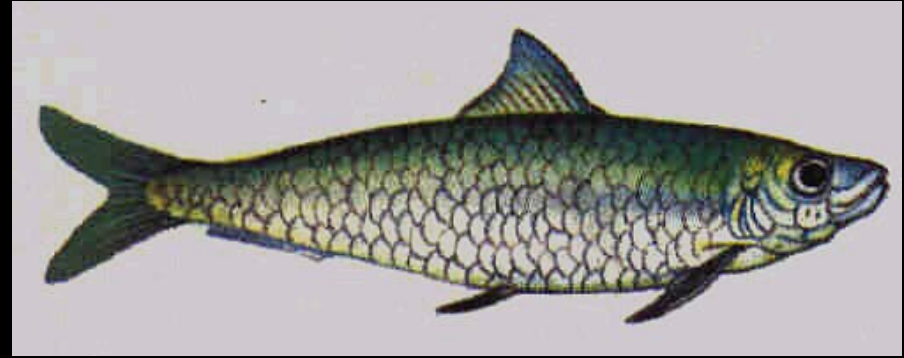
***Salmo salar* - losos**

Classis: Osteichthyes

Subclassis: Actinopterygii

Infraclassis: **Teleostei**

Ordo: **Clupeiformes**
fam: Clupeidae



Clupea pilchardus - sardina



Clupea harengus - haringa



Clupea sprattus - papalina

Classis: Osteichthyes

Subclassis: Actinopterygii

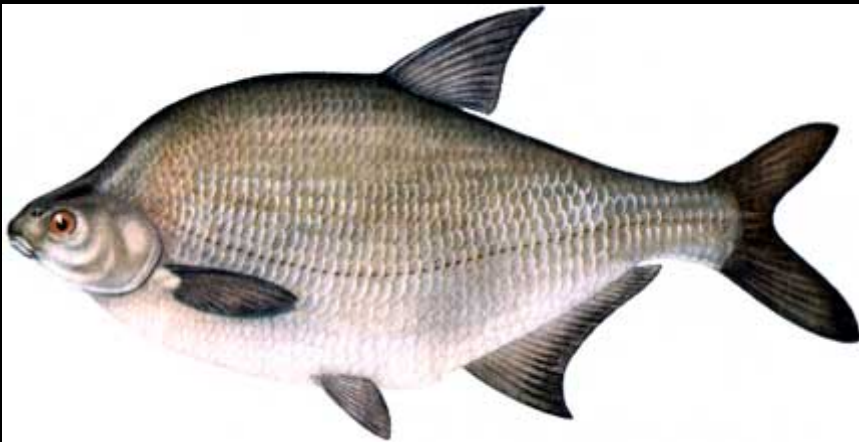
Infraclassis: **Teleostei**

Ordo: **Cypriniformes**

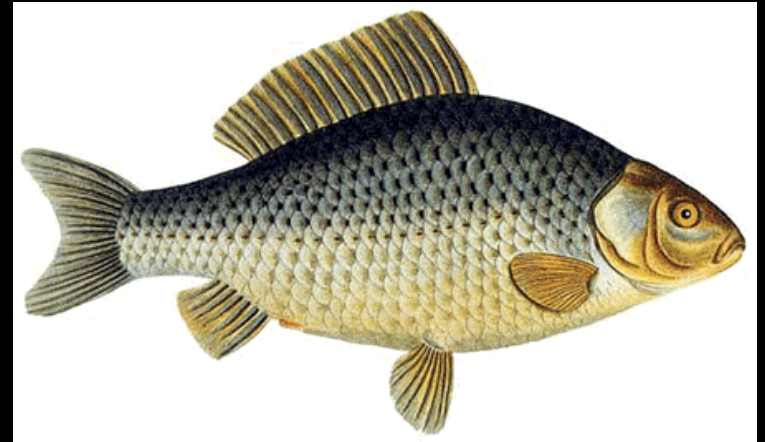
fam: Cyprinidae



Cyprinus carpio - šaran



Abramis brama - deverika



Carassius auratus
zlatna ribica

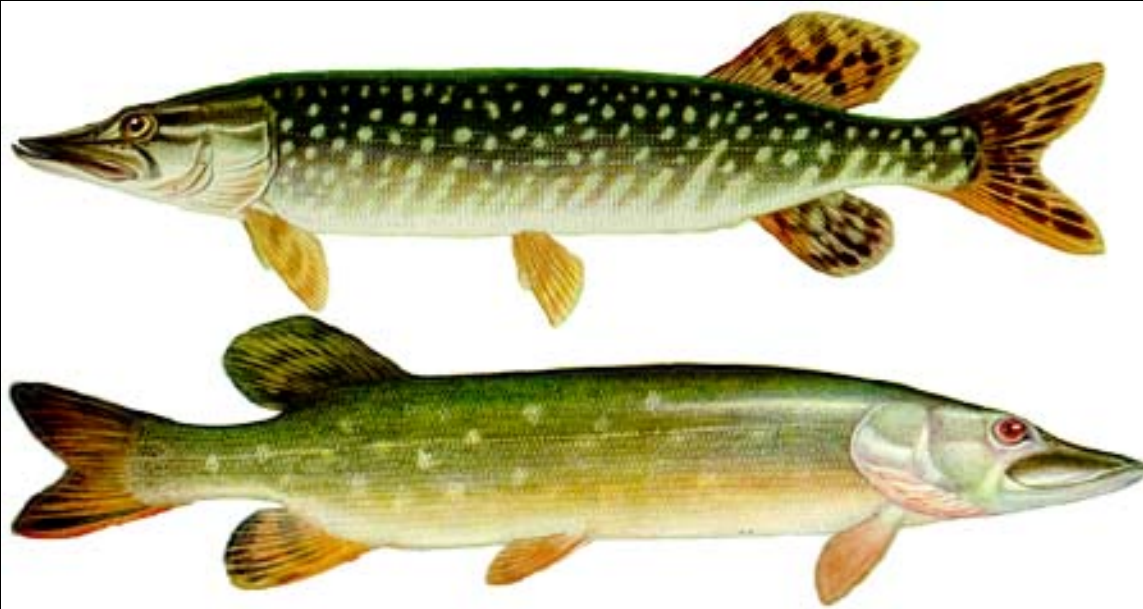
Classis: Osteichthyes

Subclassis: Actinopterygii

Infraclassis: Teleostei

Ordo: Esociformes

fam: Esocidae



***Esox lucius* - štika**

Classis: Osteichthyes

Subclassis: Actinopterygii

Infraclassis: **Teleostei**

Ordo: Anguilliformes

fam: Anguillidae



Anguilla anguilla - jegulja

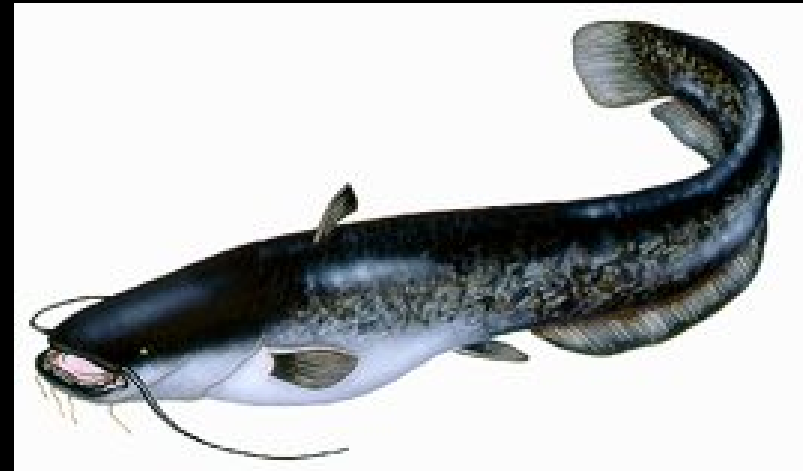
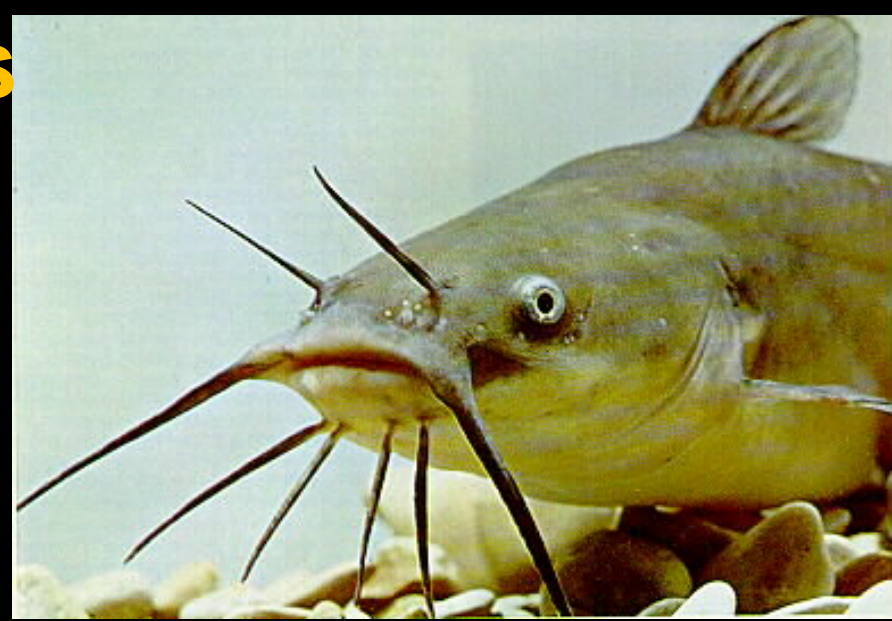
Classis: Osteichthyes

Subclassis: Actinopterygii

Infraclassis: **Teleostei**

Ordo: Siluriformes

fam: Siluridae



***Silurus glanis* - som**

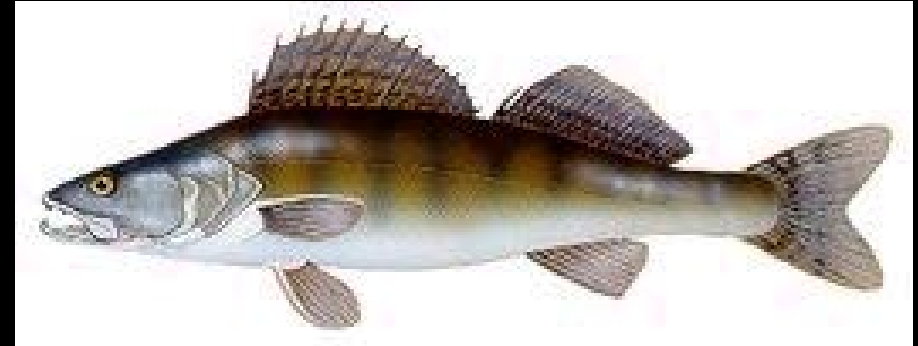
Classis: Osteichthyes

Subclassis: Actinopterygii

Infraclassis: **Teleostei**

Ordo: Perciformes

fam: Percidae



Sander lucioperca - smuđ

Perca fluviatilis
grgeč



Classis: Osteichthyes

Subclassis: Actinopterygii

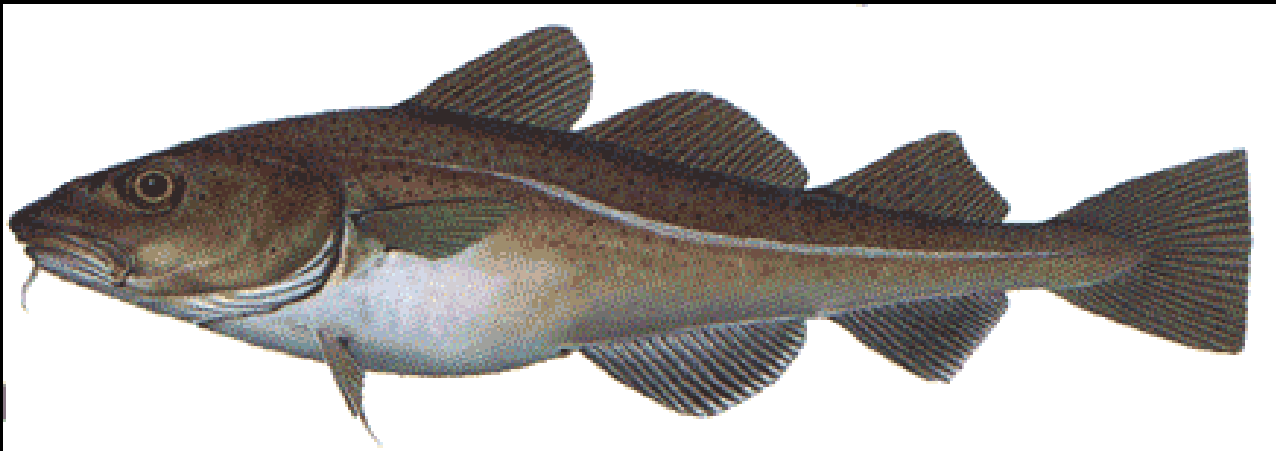
Infraclassis: **Teleostei**

Ordo: Gadiformes

fam: Merlucciidae



Merluccius merluccius - oslič



fam: **Gadidae**

Gadus morhua -
bakalar

Classis: **Osteichthyes**

Subclassis: **Sarcopterygii**

Ordo: **Crossopterygii -**
ŠAKOPERKE



Latimeria chalumnae



Classis: **Osteichthyes**

Subclassis: **Sarcopterygii**

Ordo: **Dipnoi - PLUĆAŠICE**



Lepidosiren paradoxa
(Južna Amerika)



Neoceratodus forsteri (Australija)

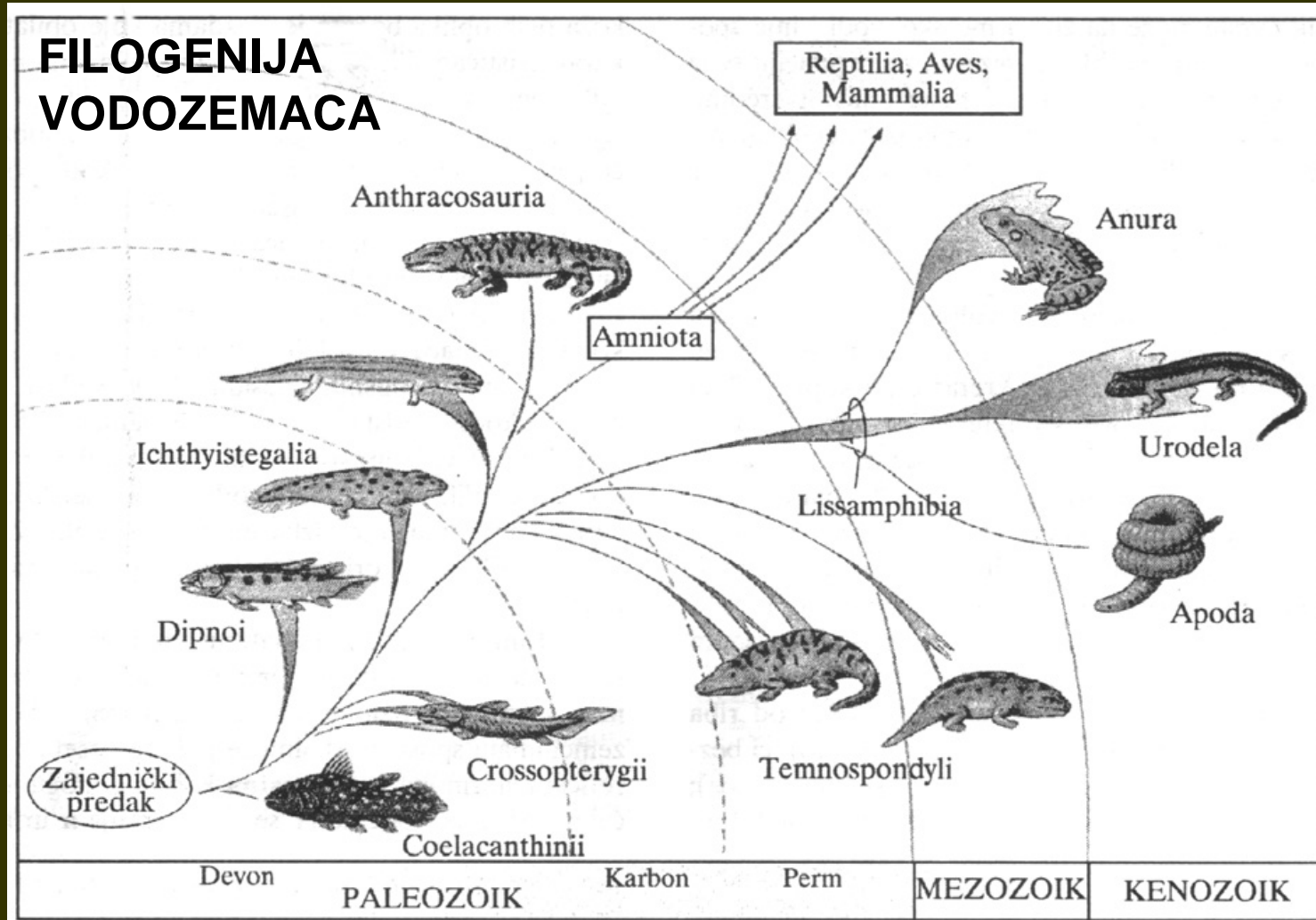


Protopterus annectens (Afrika)

Phylum Chordata

Subphylum:
Vertebrata

Classis:
Amphibia



Classis: **Amphibia**

Karakteristike vodozemaca

Vodozemci su **prvi kičmenjaci koji su osvojili kopnenu sredinu**, ali im je za razmnožavanje neophodna vodena sredina.



U vezi sa izlaskom na kopno, kod vodozemaca je došlo do **izuzetno značajnih adaptacija organskih sistema**, pre svega: **respiratornog, krvnog**, kao i promene **u skeletu i načinu kretanja**:

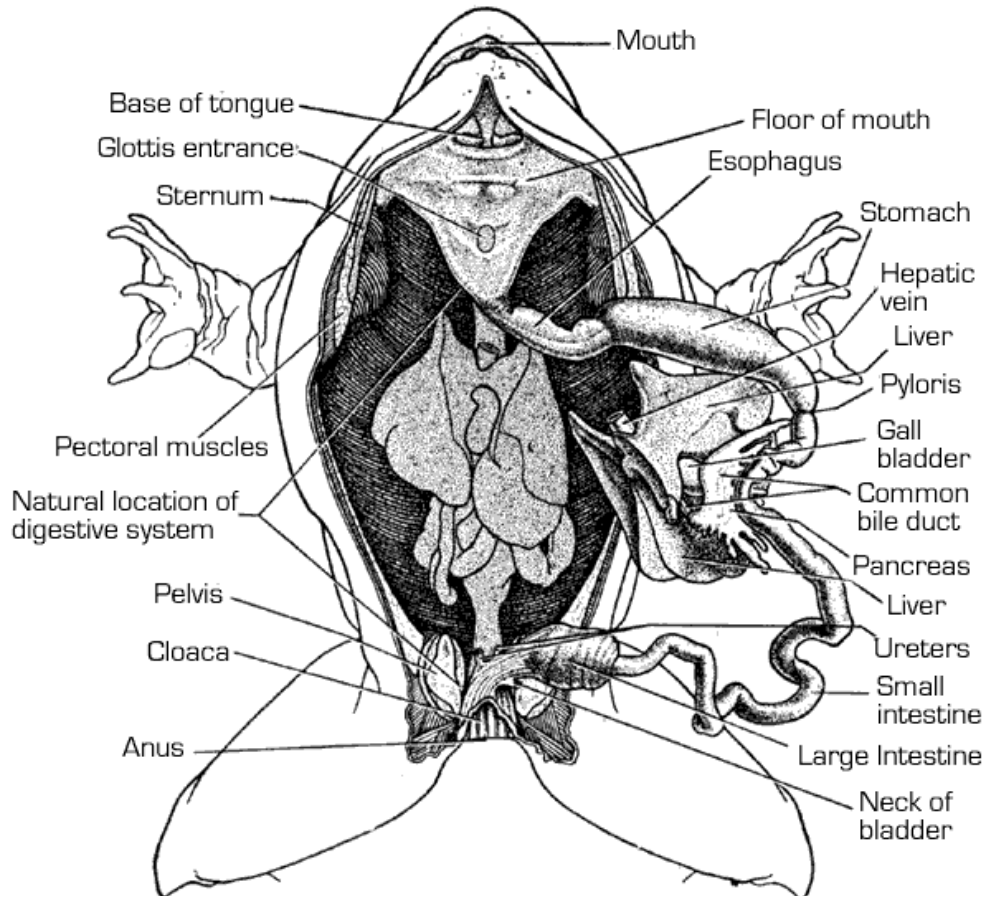
- prvi put se pojavljuju **PLUĆA** (slabo razvijena) i
- prvi put je **SRCE TRODELNO**, jer se javlja pregrada koja deli pretkomoru na levu i desnu polovinu,
- prvi put se pojavljuju **UDOVI** (sa po 5 prstiju), koji ne mogu držati telo izdignuto iznad površine tla.

Koža je gola, bogata žlezdama i ima značajnu ulogu u disanju jer su pluća slabo razvijena.

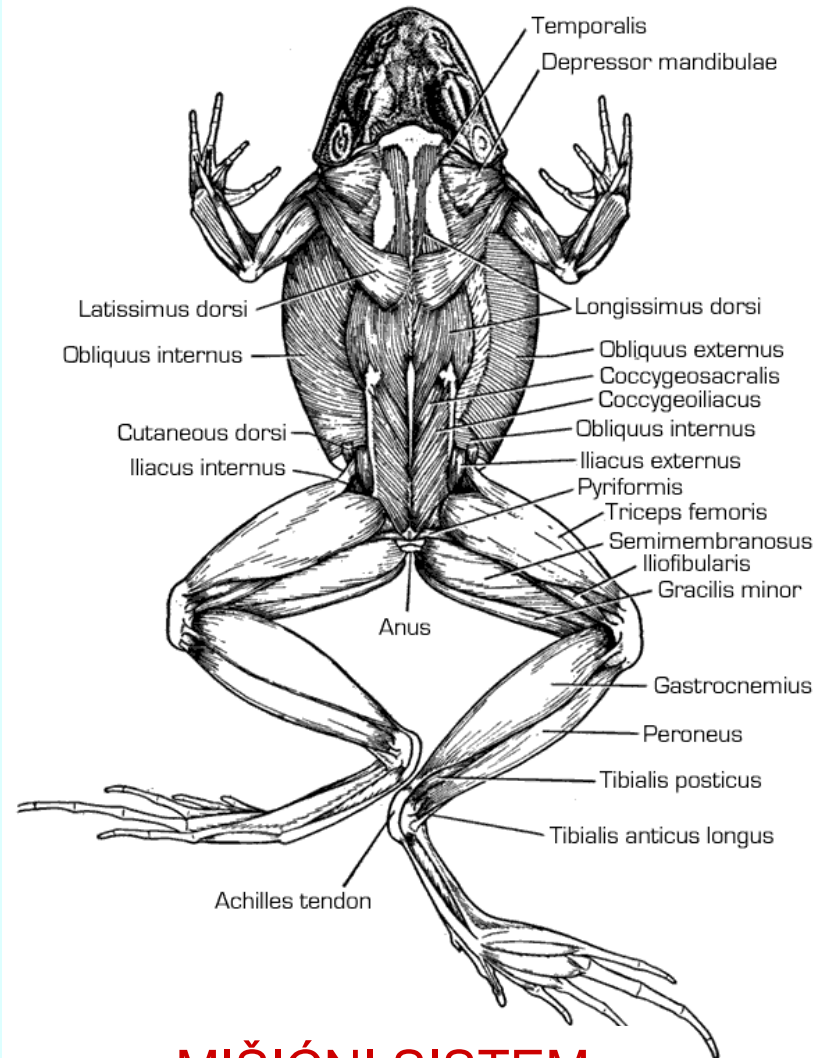
Bubrezi su **mezonefros** tipa građe.

• classis Amphibia

GRADJA TELA na primeru žabe

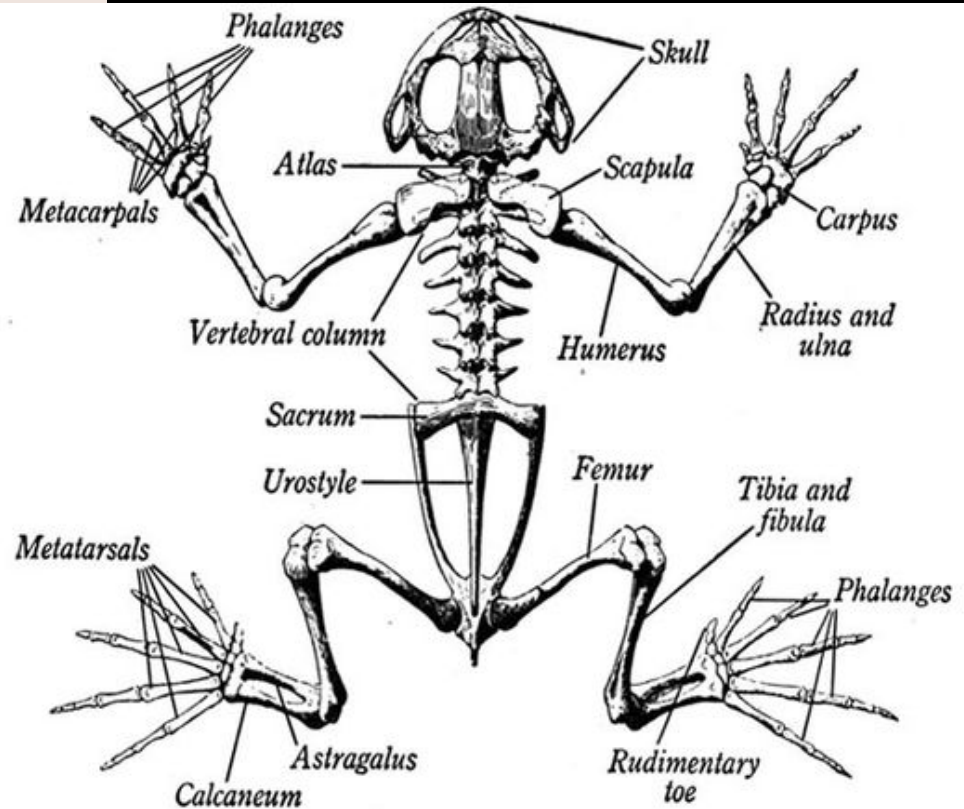
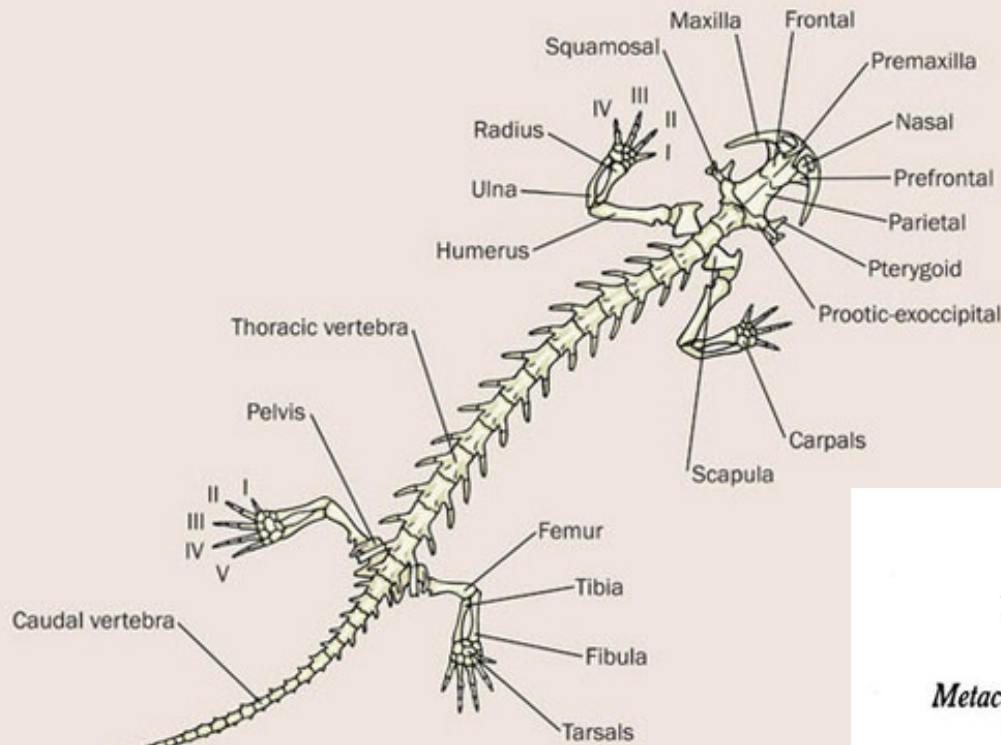


DIGESTIVNI SISTEM



MIŠIČNI SISTEM

SKELET VODOZEMACA



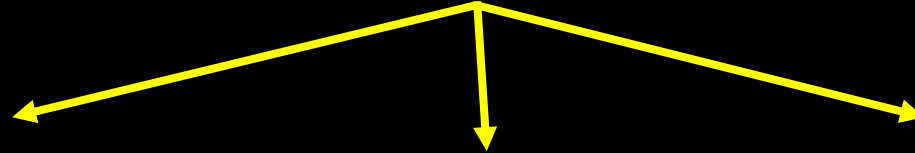
skelet žabe

skelet daždvnjaka

Phylum **Chordata**

Subphylum **Vertebrata**

Classis: **AMPHIBIA**



Ordo: **Apoda**



Ordo: **Urodela**



Ordo: **Anura**



Classis: **AMPHIBIA**

Ordo: **Apoda**



Siphonops annulatus



Ichthyophis glutinosus

Classis: AMPHIBIA

Ordo: **Urodela**

Vrste kod kojih je najizrazitije izražena pojava NEOTENIJE



Proteus anguinus –
”čovečija ribica”



Ambystoma tigrinum – američki aksolotl

Classis: **AMPHIBIA**

Ordo: **Urodela**



Triturus alpestris



Triturus cristatus



Triturus vulgaris

Classis: **AMPHIBIA**

Ordo: **Urodela**



Salamandra atra

Salamandra salamandra terrestris (yellow form)



Salamandra salamandra

Classis: **AMPHIBIA**

Ordo: **Anura**

Subordo: **Aglossa**



Xenopus laevis

Pipa pipa



Classis: **AMPHIBIA**

Ordo: **Anura**

Subordo: **Phaneroglossa**



Bombina variegata



Bombina bombina

Classis: **AMPHIBIA**

Ordo: **Anura**

Subordo: **Phaneroglossa**

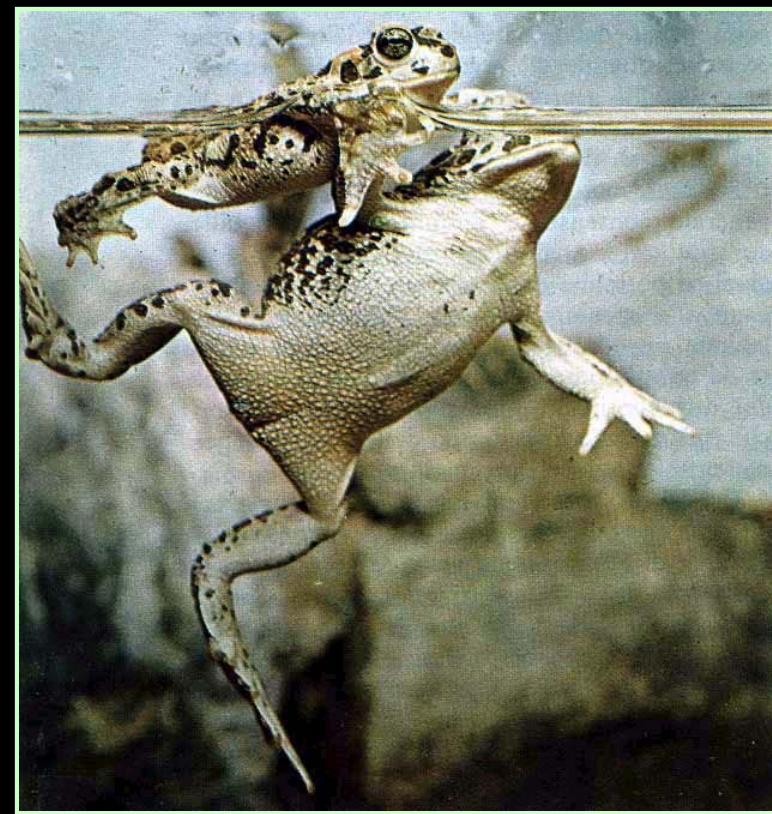
Hyla arborea - gatalinka



Classis: **AMPHIBIA**

Ordo: **Anura**

Subordo: **Phaneroglossa**



Bufo viridis – zelena
krastava žaba

Bufo bufo – šumska
krastava žaba

Classis: **AMPHIBIA**

Ordo: **Anura**



Rana ridibunda



Rana dalmatina

Subordo: **Phaneroglossa**

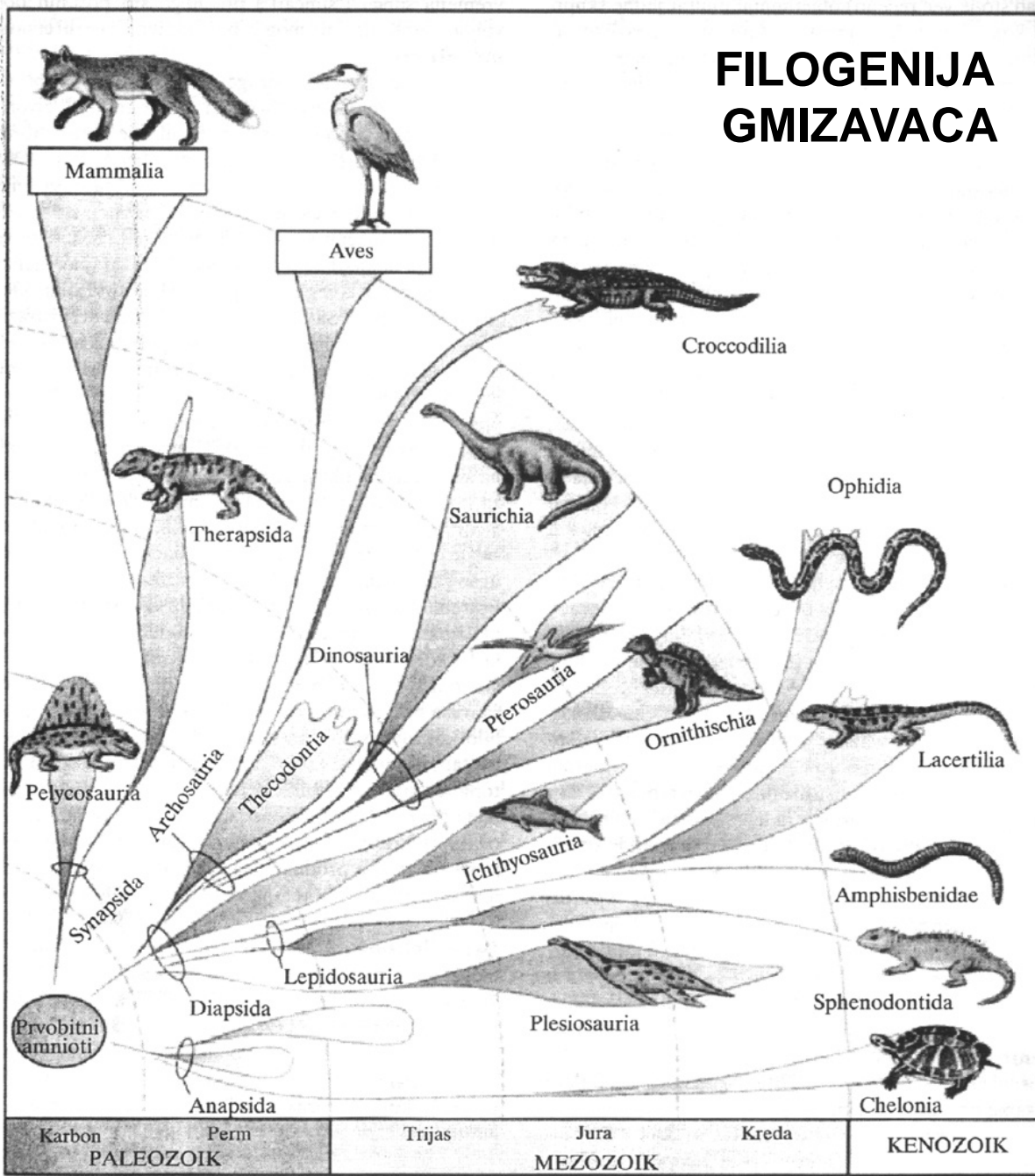


Rana esculenta



Rana temporaria

FILOGENIJA GMIZAVACA



Phylum Chordata

Subphylum:
Vertebrata

Classis: **Reptilia**

Classis: **Reptilia**

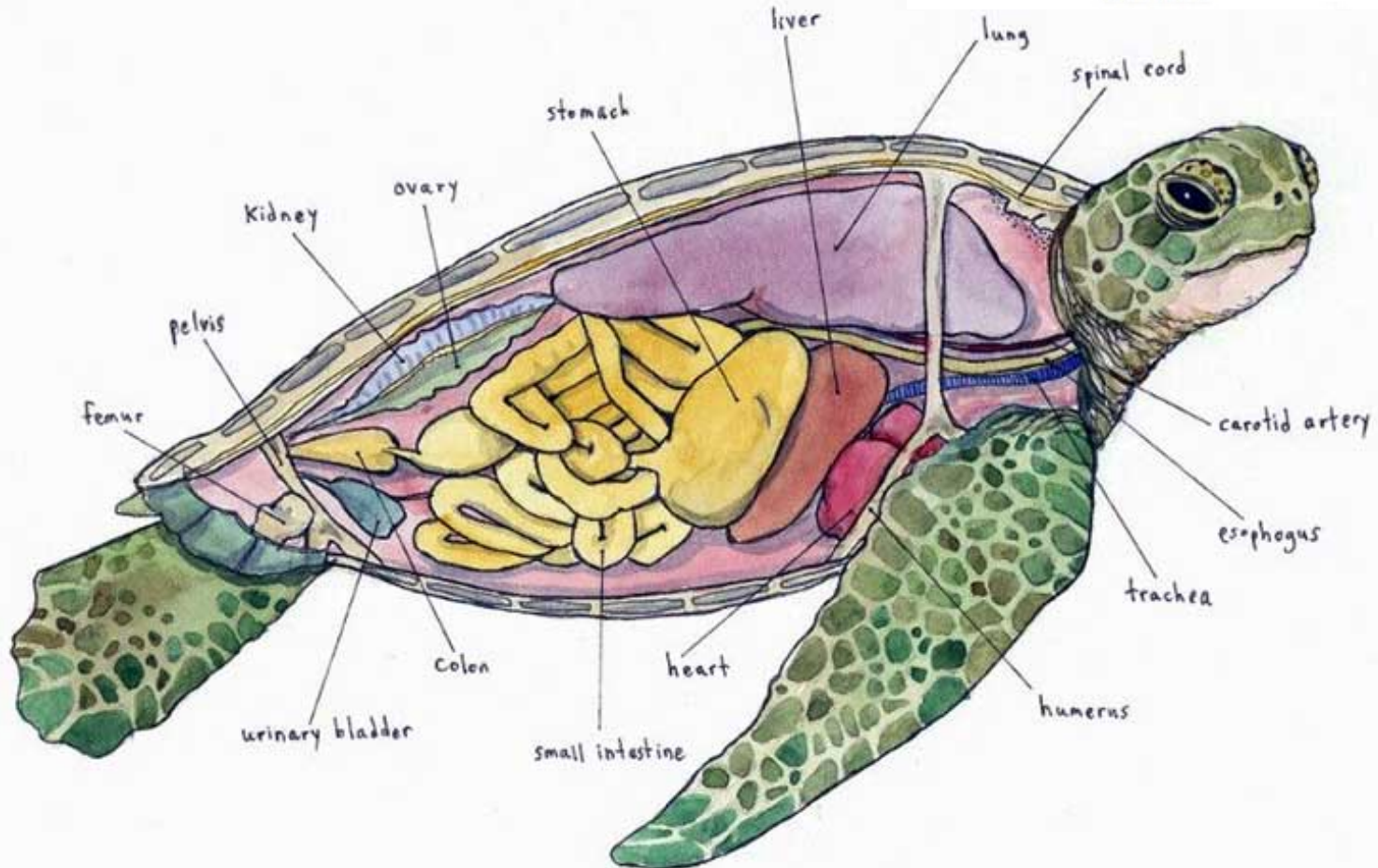
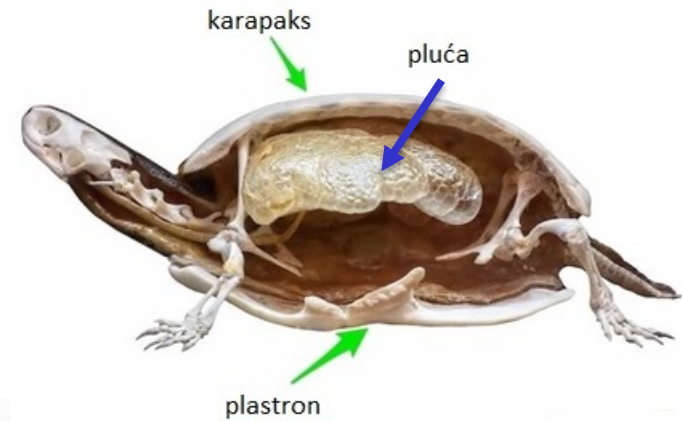
Karakteristike gmizavaca

Gmizavci su prvi pravi kopneni kičmenjaci sa sledećim adaptacijama na suvozemni način života:

- **dišu** u potpunosti **PLUĆIMA**
- telo je prekriveno ili **koštanim pločama** (kornjače, krokodili) ili **rožnim krljuštima i pločicama** (gušteri i zmije)
- **KOŽA** je **suva, bez žlezda, poseduje veliki broj hromatofora** koje su značajne za akumulaciju toplote
- **SRCE** gmizavaca sastoji se iz tri dela (dve pretkomore i jedne komore), ali **u komori postoji pregrada** koja je nepotpuna (sa izuzetkom krokodila, kod kojih je pregrada potpuna, pa je srce četvorodelno).
- **tip bubrega** kod gmizavaca je **metanefros**
- razmnožavaju se na kopnu, većinom polaganjem jaja (oviparne vrste), a samo neke rađaju žive mladunce (viviparne).

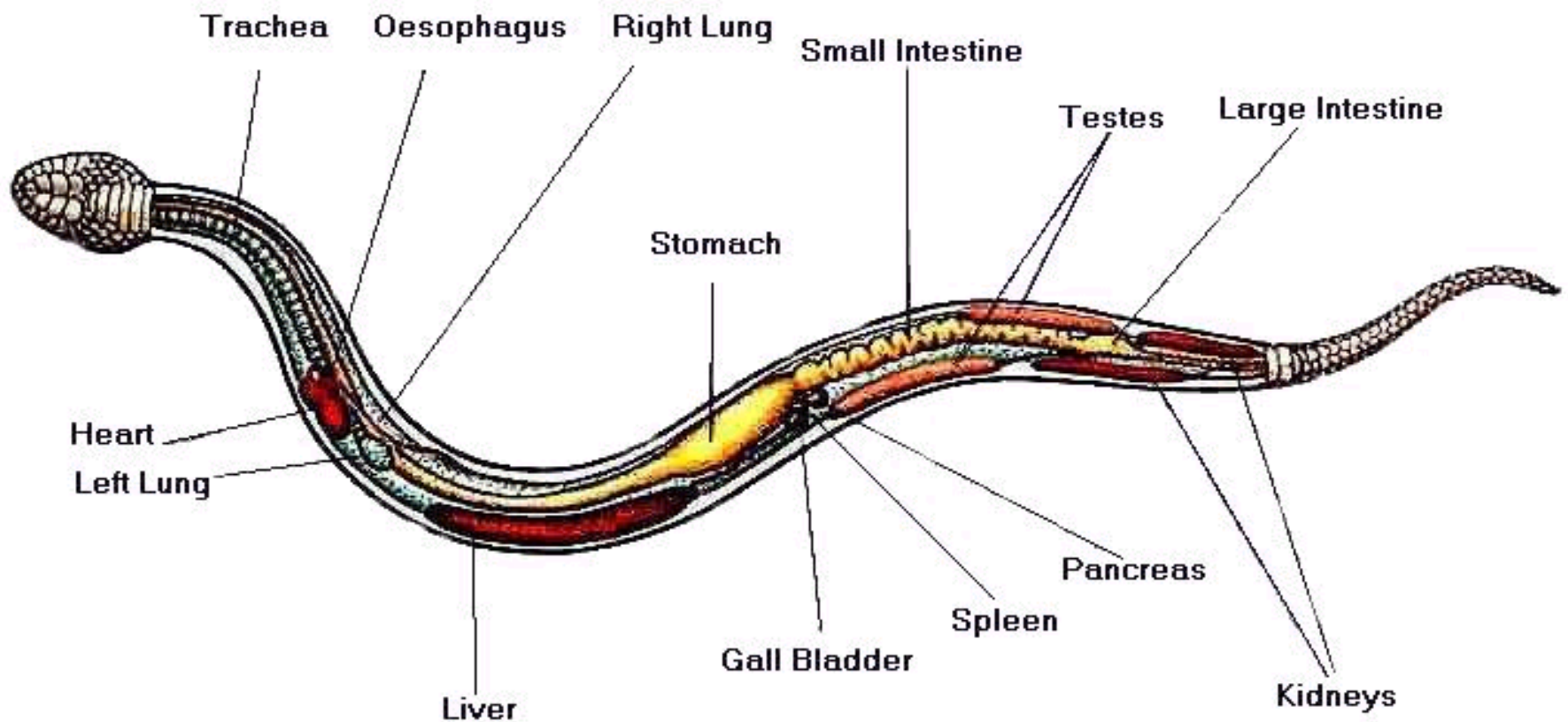


• classis **Reptilia**
OPŠTA GRADJA na
primeru kornjača



• classis **Reptilia**

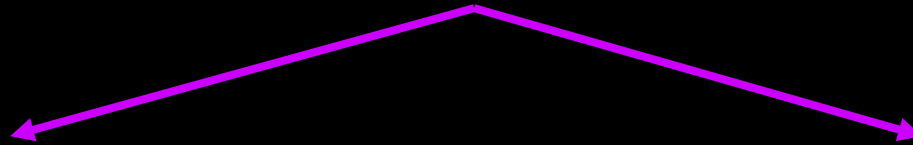
OPŠTA GRADJA na primeru zmija



Phylum **Chordata**

Subphylum **Vertebrata**

Classis: **REPTILIA**



Subclassis: **Anapsida**

Subclassis: **Diapsida**

Ordo: **Testudines**
=Chelonia

Ordo: **Squamata**

Subordo: **Lacertilia**

Subordo: **Ophidia**

Ordo: **Crocodylia**

Ordo: **Sphenodontia**

Classis: **REPTILIA**
Subclassis: **Anapsida**

Ordo: **Testudines**
= **Chelonia**



Emys orbicularis
barska kornjača

Testudo hermanni
šumska kornjača



Classis: **REPTILIA**

Subclassis: **Anapsida**

Ordo: **Testudines**
= **Chelonia**



Testudo gigantea



Classis: **REPTILIA**

Subclassis: **Anapsida**

Ordo: **Testudines = Chelonia**



*Testudo
elephantina*

Classis: **REPTILIA**

Subclassis: **Diapsida**

Ordo: **Sphenodontia**



*Sphenodon
punctatum*
tuatera



Classis: **REPTILIA**

Subclassis: **Diapsida**

Ordo: **Squamata**

Subordo: **Lacertilia**

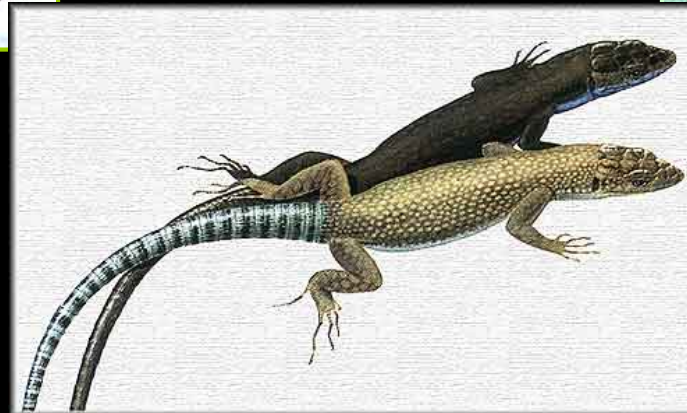


Lacerta muralis

fam: **Lacertidae**



Lacerta agilis



Lacerta oxycephala



Lacerta viridis

Classis: **REPTILIA**

Subclassis: **Diapsida**

Ordo: **Squamata**

Subordo: **Lacertilia**

fam: **Varanidae**



Varanus niloticus



Varanus griseus



Varanus komodoensis

Classis: **REPTILIA**

Subclassis: **Diapsida**

Ordo: **Squamata**

Subordo: **Lacertilia**

fam: **Geckonidae**



Tarentola mauritanica

– macaklin zidni



Hemidactylus turcicus –

kućni macaklin

Classis: **REPTILIA**
Subclassis: **Diapsida**

Ordo: **Squamata**
Subordo: **Lacertilia**

fam: **Agamidae**



Pogona vitticeps
bradata agama

Draco volans - krilati zmaj



Moloch horridus
trnovita agama

Classis: **REPTILIA**
Subclassis: **Diapsida**

Ordo: **Squamata**
Subordo: **Lacertilia**

fam: **Agamidae**

Chlamydosaurus kingi
agama ogrličar



Classis: **REPTILIA**

Subclassis: **Diapsida**

Ordo: **Squamata**

Subordo: **Lacertilia**

fam: **Iguanidae**



Photo: A.Sabah



*Phrynosoma
cornutum* -

žaboliki leguan



*Iguana
iguana*





Classis: **REPTILIA**

Subclassis: **Diapsida**

Ordo: **Squamata**

Subordo: **Lacertilia**

fam: **Rhoptoglossa**
(**Chamaeleonidae**)



Chamaeleo chamaeleon
kameleon

Classis: **REPTILIA**

Subclassis: **Diapsida**

Ordo: **Squamata**

Subordo: **Lacertilia**

fam: **Anguinae**

Anguis fragilis
slepić



Classis: **REPTILIA**

Subclassis: **Diapsida**

Ordo: **Squamata**

Subordo: **Lacertilia**

fam: **Anguinae**

Ophiosaurus apodus
blavor



Classis: **REPTILIA**

Subclassis: **Diapsida**

Ordo: **Squamata**

Subordo: **Ophidia**

fam: **Boidae**

Boa constrictor – udav
(zmijski car)



Classis: **REPTILIA**

Subclassis: **Diapsida**

Ordo: **Squamata**

Subordo: **Ophidia**

fam: **Boidae**

Python molurus molurus



Python molurus bivittatus
albino forma



Python molurus pimbura

Classis: **REPTILIA**
Subclassis: **Diapsida**

Ordo: **Squamata**
Subordo: **Ophidia**

fam: **Boidae**



Eunectes murinus - anakonda

Classis: **REPTILIA**

Subclassis: **Diapsida**

Ordo: **Squamata**

Subordo: **Ophidia**

fam: **Colubridae**



Natrix tessellata
potočarka, rečna zmija



Natrix natrix
belouška, barska zmija

Classis: **REPTILIA**

Subclassis: **Diapsida**

Ordo: **Squamata**

Subordo: **Ophidia**

fam: **Elapidae**



Naja naja

kobra, naočarka

Classis: **REPTILIA**

Subclassis: **Diapsida**

Ordo: **Squamata**

Subordo: **Ophidia**

fam: **Elapidae**

Naja haje

Kleopatrina kobra,
ASPIDA



Classis: **REPTILIA**

Subclassis: **Diapsida**

Ordo: **Squamata**

Subordo: **Ophidia**

fam: **Elapidae**

*Dendroaspis
angusticeps*

afrička mamba



Classis: **REPTILIA**
Subclassis: **Diapsida**

Ordo: **Squamata**
Subordo: **Ophidia**

fam: **Viperidae**
subfam: **Viperinae**



Vipera berus
šarka



Classis: **REPTILIA**

Subclassis: **Diapsida**

Ordo: **Squamata**

Subordo: **Ophidia**

fam: **Viperidae**



Vipera ammodytes – poskok

Classis: **REPTILIA**
Subclassis: **Diapsida**

Ordo: **Squamata**
Subordo: **Ophidia**

fam: **Crotalidae**



Crotalus horridus
ZVEČARKA

Classis: **REPTILIA**

Subclassis: **Diapsida**

Ordo: **Squamata**

Subordo: **Ophidia**

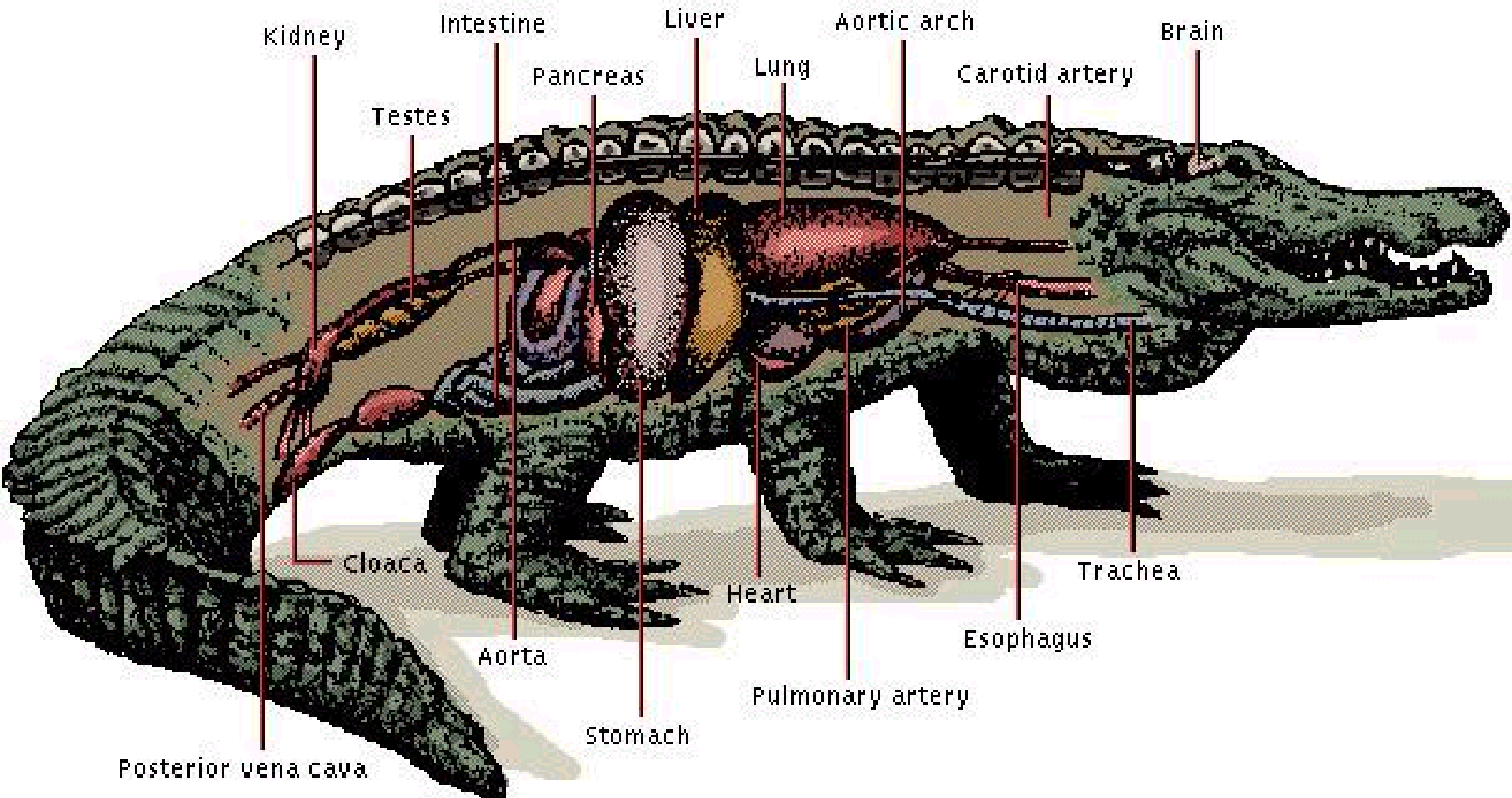
Fam: **Crotalidae**

Lachesis mutus



• classis Reptilia

OPŠTA GRADJA na primeru krokodila

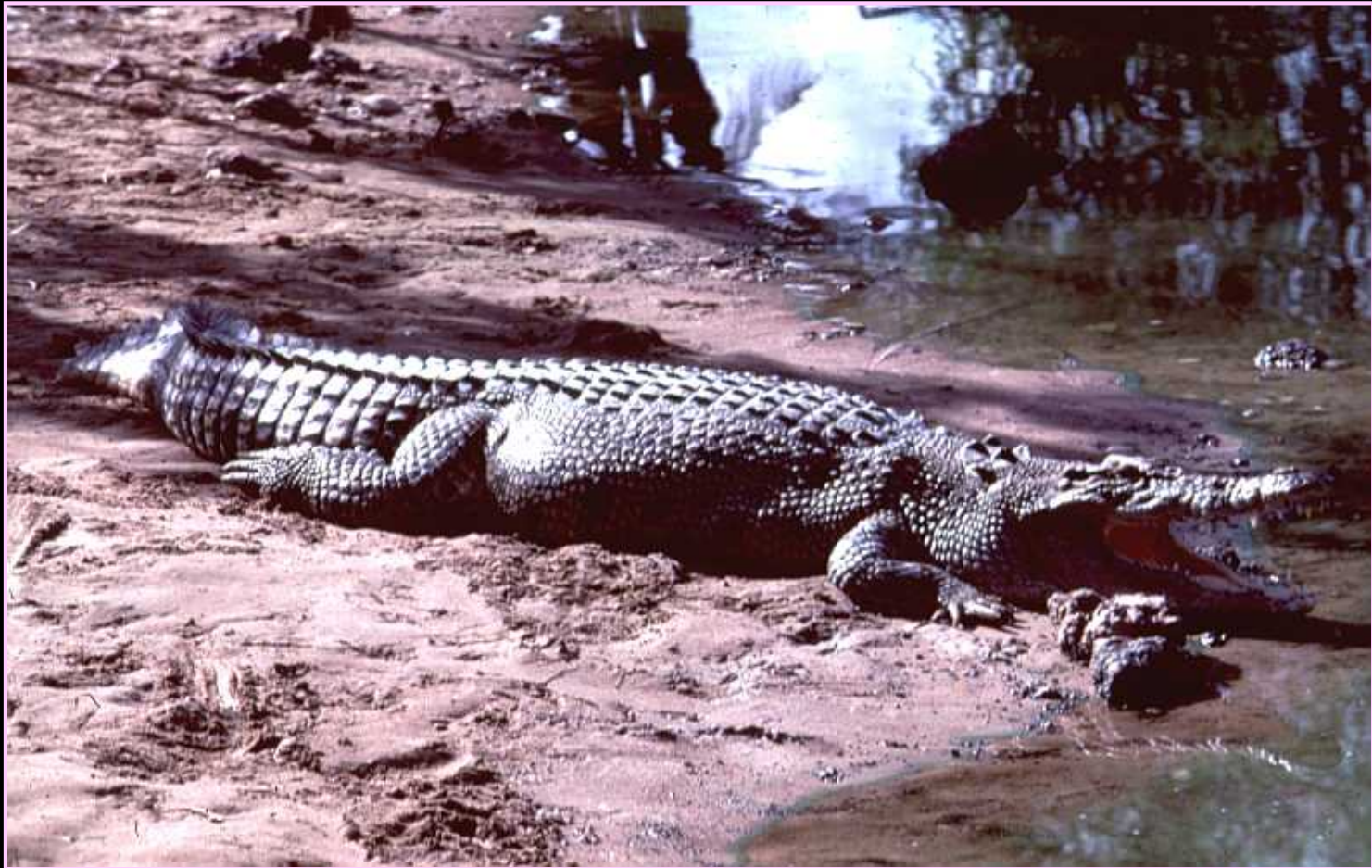


Classis: **REPTILIA**

Subclassis: **Diapsida**

Ordo: **Crocodylia**

Crocodylus porosus



Classis: **REPTILIA**

Subclassis: **Diapsida**

Ordo: **Crocodylia**

Crocodylus niloticus



Classis: **REPTILIA**

Subclassis: **Diapsida**

Ordo: **Crocodilia**

Gavialis gangeticus

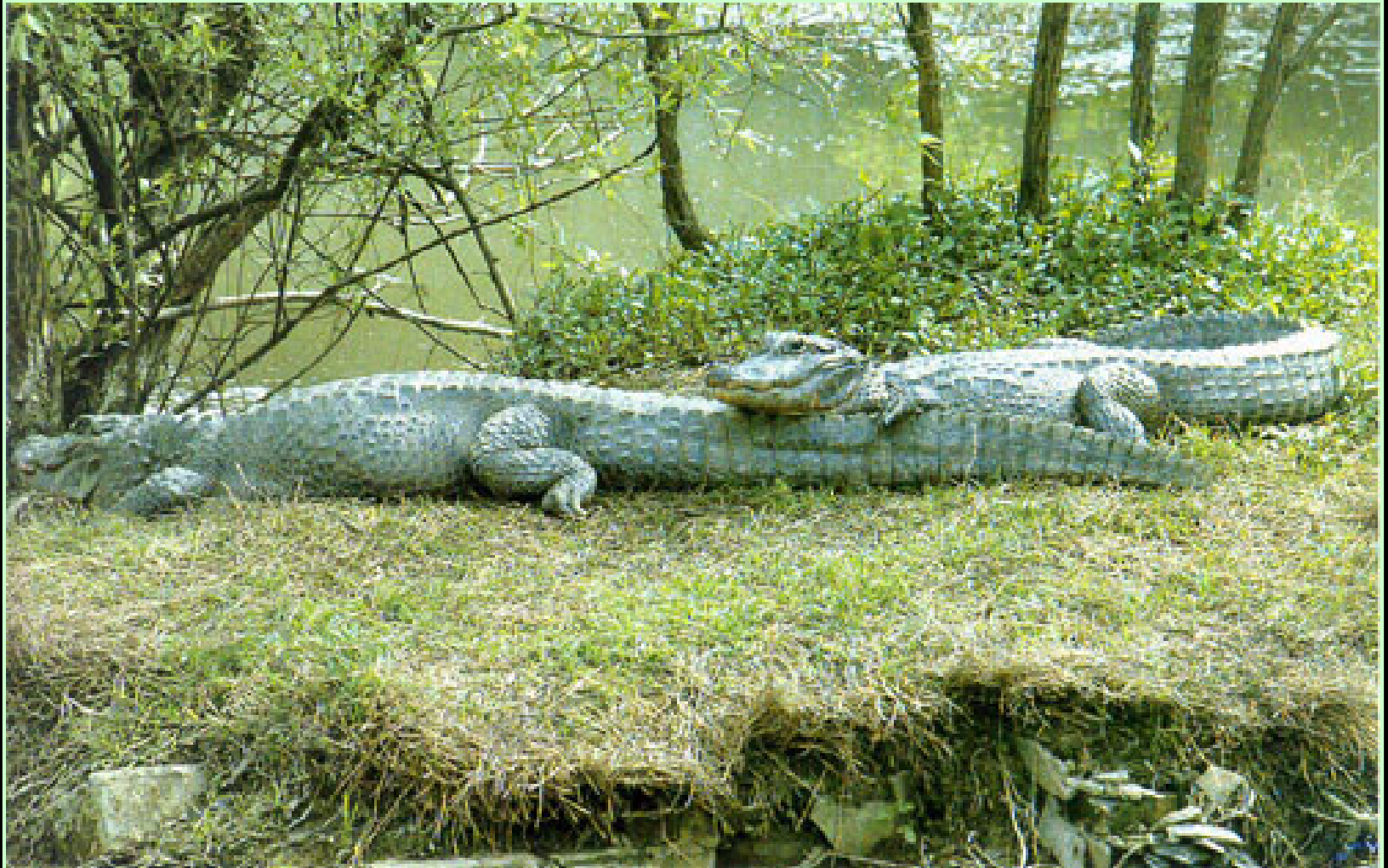


Classis: **REPTILIA**

Subclassis: **Diapsida**

Ordo: **Crocodilia**

Alligator sinensis

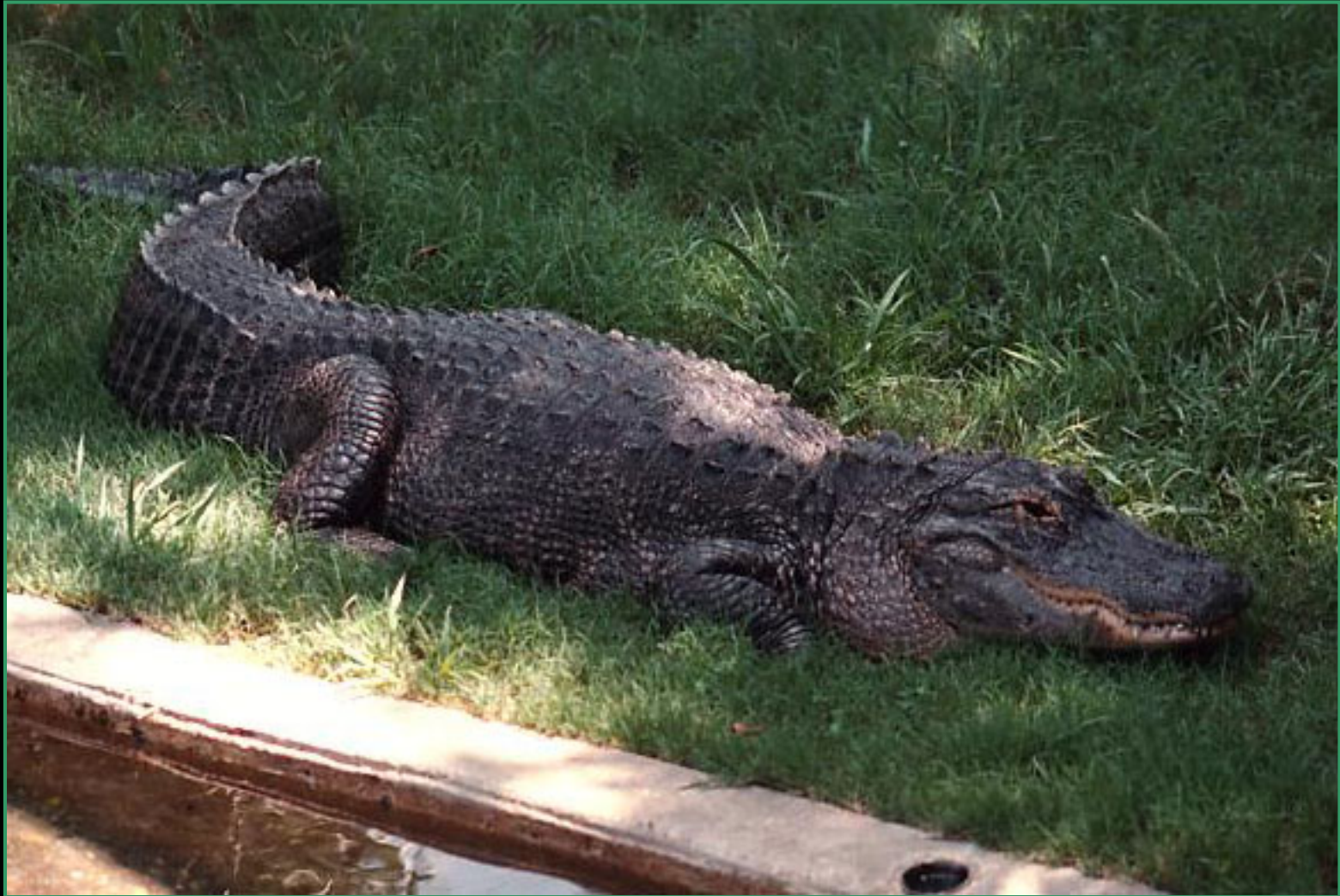


Classis: **REPTILIA**

Subclassis: **Diapsida**

Ordo: **Crocodilia**

*Alligator
mississippiensis*



Classis: **REPTILIA**

Subclassis: **Diapsida**

Ordo: **Crocodylia**

Caiman sp.

