PHYLUM: CHORDATA

SUBPHYLUM: VERTEBRATE (CRANIATA)

SUPERCLASIS: GNATHASTOMATA (JAWED FISHES)

CLASS II: ACTINOPTERYGII (RAY-FINNED FISHES)

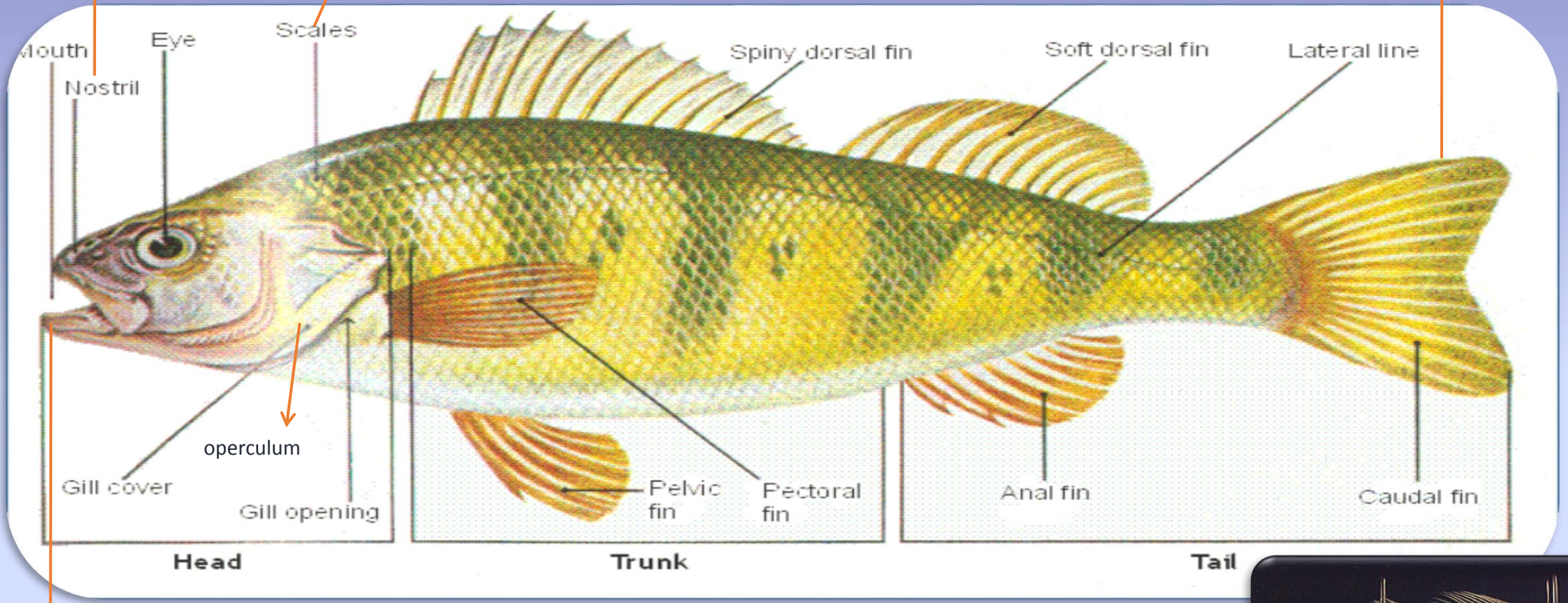
CLASS III: SARCOPTERYGII (LOBE-FINNED FISHES)

(OSTEICHTHYES)

Two nostrils
For olfaction

Cycloid; ctenoid; ganoid

Homocercal-Dphycercal

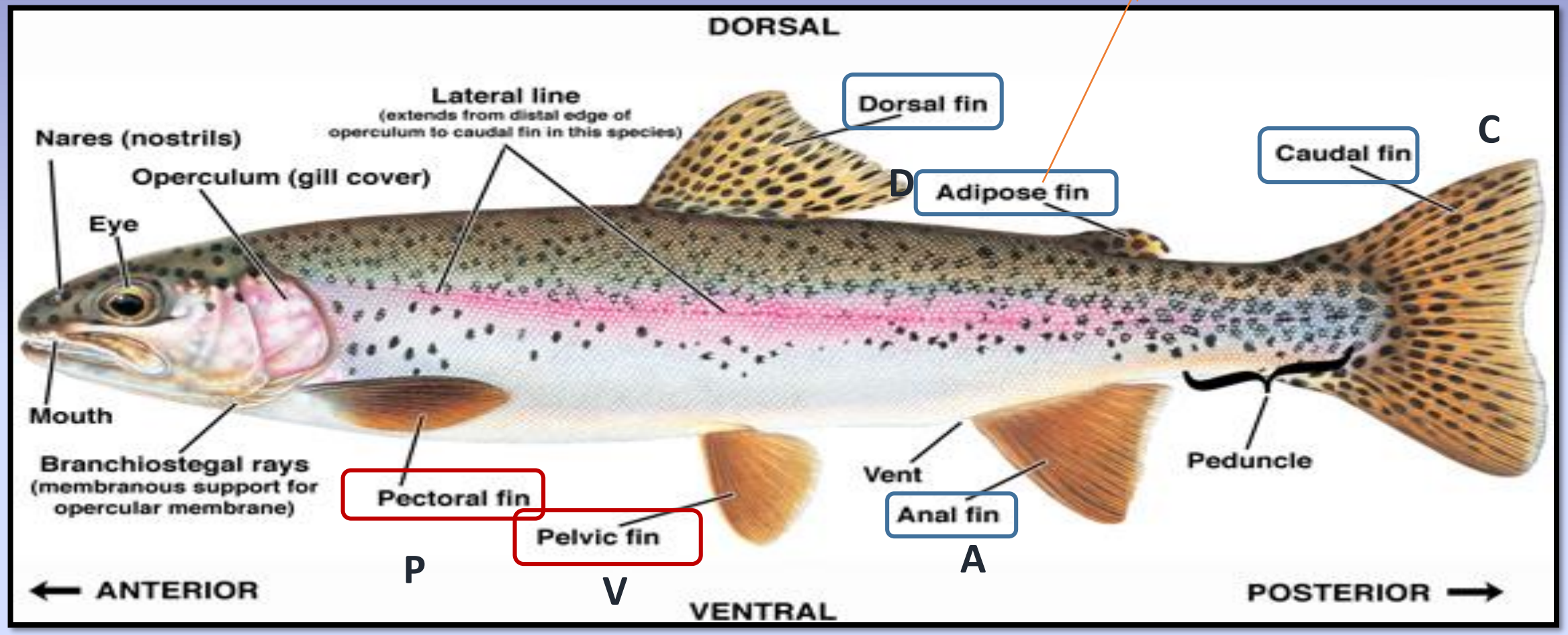


Mouth usually terminal state
Jaws well-developed

Swim-bladder

Bony skeleton

Salmonidae (Trout)
Sisoridae (Sisorid cat-fish)



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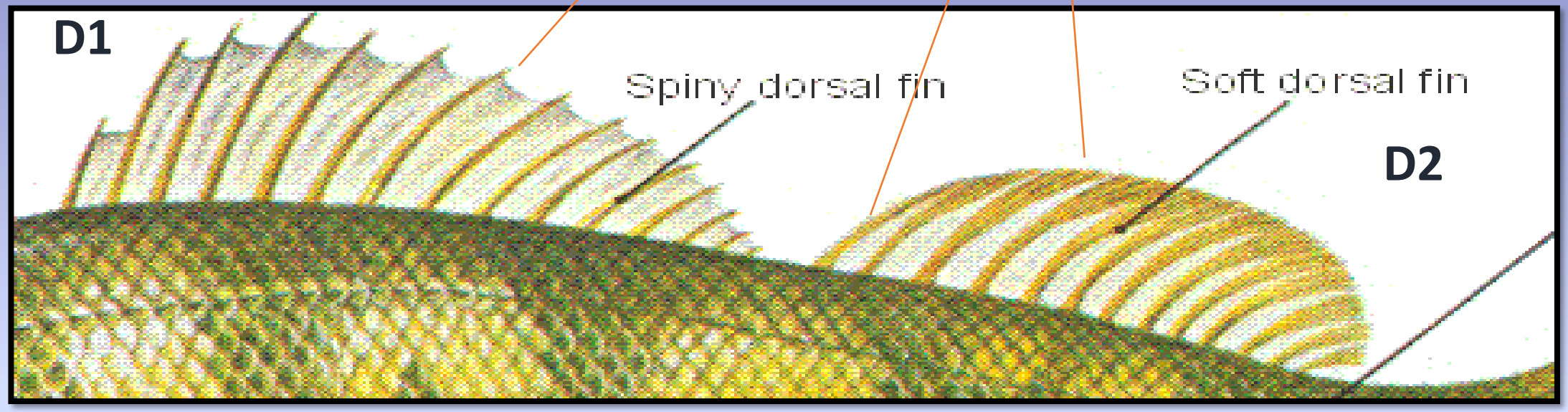


Membranes on the fins are caused by the differentiation of the body cover.

Ceratotrichia: Dermal origin, horny and inarticulate fin rays (Chondrichtyes)

Lepidotrichia: Dermal origin, bony and ve articulate fin rays (Osteichthyes)

Mouth usually terminal
Jaws are well-developed

Terminal

Superior

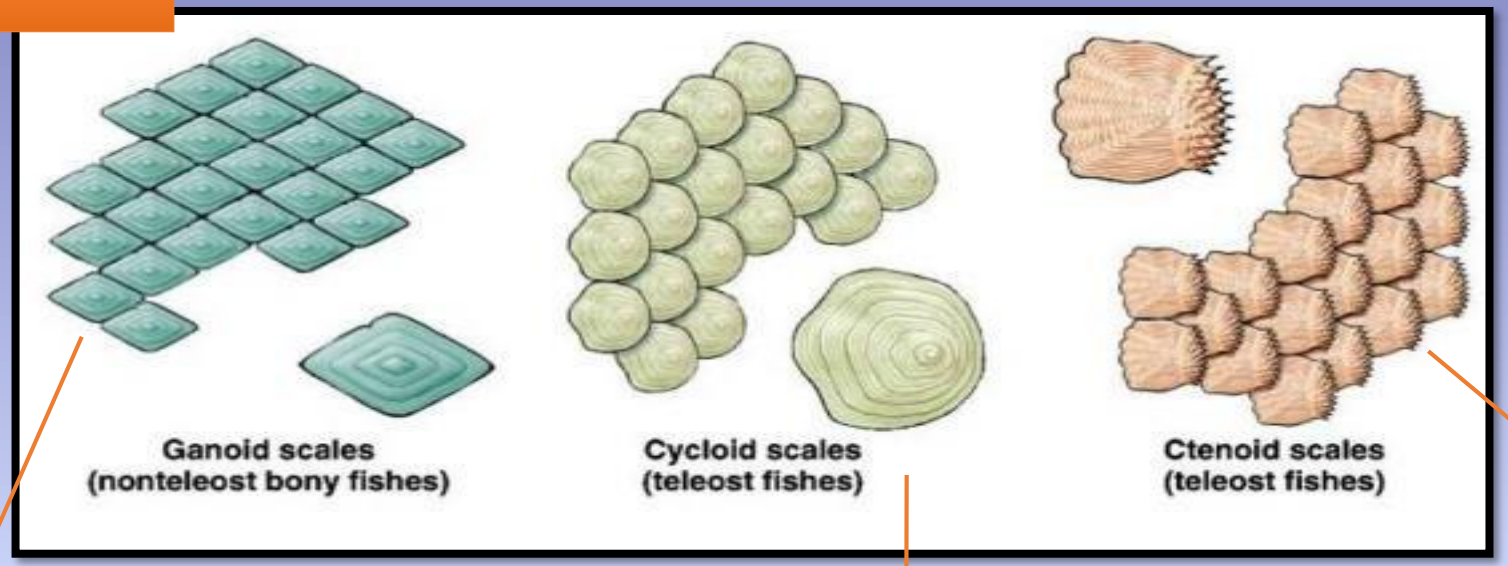
Elongated

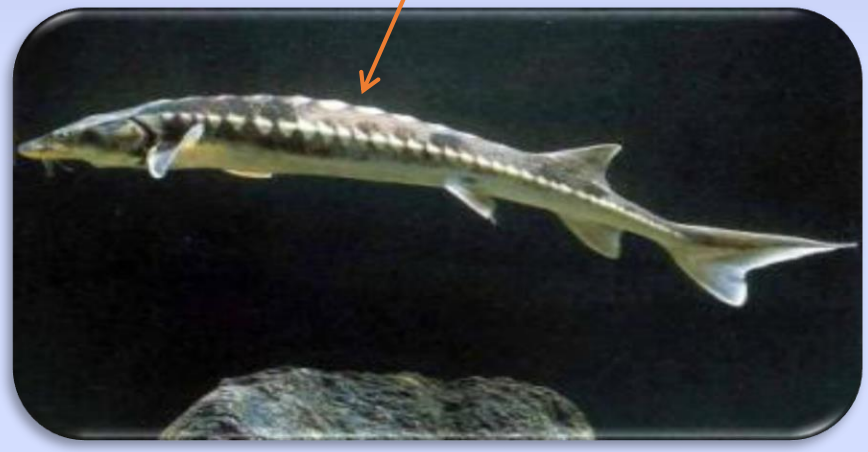
Barbel:Their number is important in systematic

Inferior

Tubular

SKIN


Ganoid scales
(nonteleost bony fishes)
Cycloid scales
(teleost fishes)
Ctenoid scales
(teleost fishes)



DORSAL FIN-ANAL FIN

PECTORAL FINS

Not found in *Anguilla anguilla* (European Eel)

PELVIC FINS

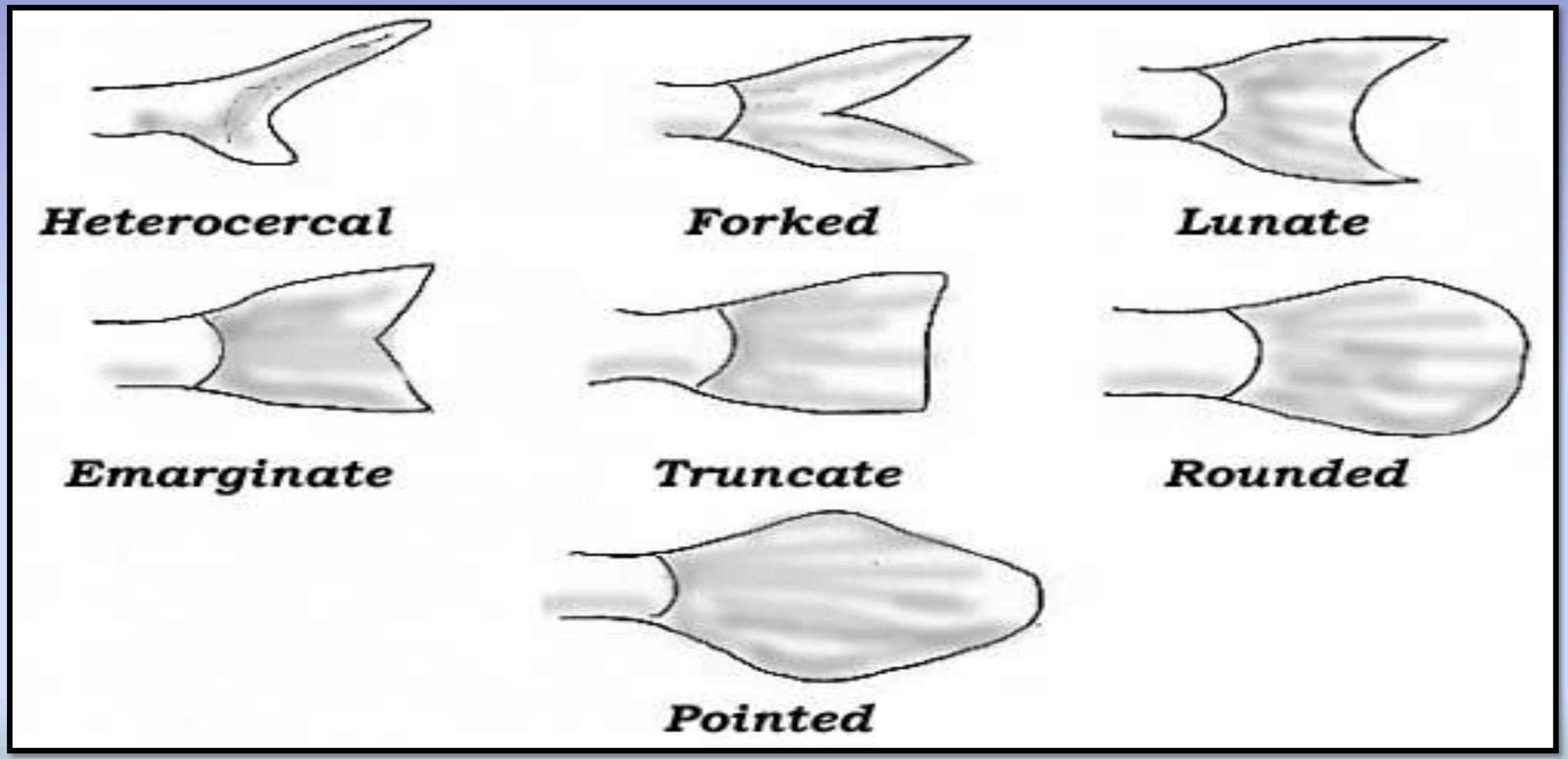
Triglidae
(as walking legs)

Frogfish

Gobiidae
(combined)

Gasterosteidae
Spicule structure

CAUDAL FIN


Heterocercal
Forked
Lunate
Emarginate
Truncate
Rounded
Pointed

SYSTEMATICS

PHYLUM: CHORDATA
SUBPHYLUM: VERTEBRATE (CRANIATA)
SUPERCLASIS: GNATHASTOMATA (JAWED FISHES)
CLASS: ACTINOPTERYGII (RAY-FINNED FISHES)

- Skeleton ossified
- Gills covered by bony operculum
- Paired fins (pectoral & pelvic) supported by dermal rays
- Swim bladder mainly for buoyancy
- Teeth with enameloid covering

SUBCLASS: CLADISTIA

- Rombic ganoid scales
- Lungs
- Spiracle present
- Dorsal fin consisting of 5-18 finlets
- About 16 species, freshwater

Polypterus sp.

SUBCLASS: CHONDROSTEI

- Skeleton primarily cartilage
- Caudal fin heterocercal
- Large scutes or tiny ganoid scales
- Spiracle mostly present
- About 29 species, freshwater and anadromous

Acipencer

SUBCLASS: NEOPTERYGII (TELEOSTS)

- Skeleton mainly bone
- Caudal fin usually homocercal
- Scales cycloid, ctenoid, absent
- About 27.000 species, almost all aquatic habitats

Freshwater

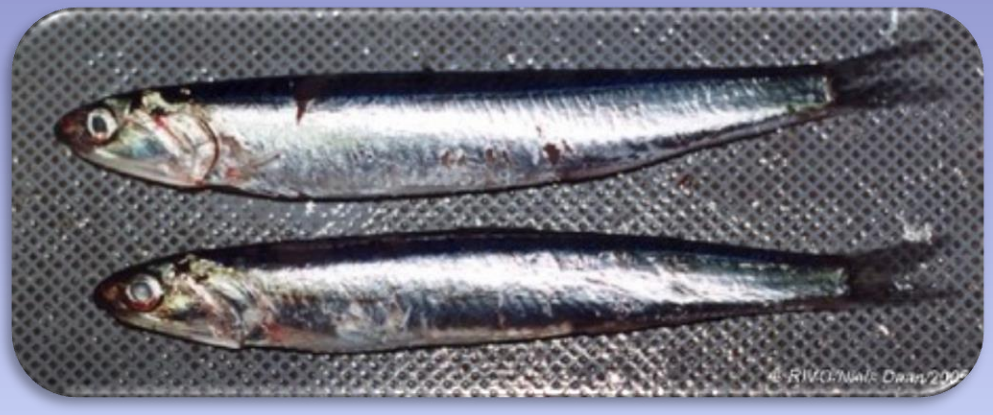
Cyprinus carpio

Luciobarbus sp.

Capoeta umbla

Garra rufa (Red Garra)

Marine



Engraulis encrasicholus

Morone labrax

Pomatomus saltatrix

Trachurus trachurus

CLASS: SARCOPTERYGII (LOBE-FINNED FISHES)

- Skeleton Ossified
- Gills covered by bony operculum
- Paired fins (pectoral & pelvic) with strong internal skeleton
- Diphycercal tail
- Usually with kungs
- Teeth with enamel covering
- About 8 species inhabited in marine and freshwater

Lepidosiren sp.