

# Ichthyology

ECOL 482/582

Fish Envy - Is It Wrong?



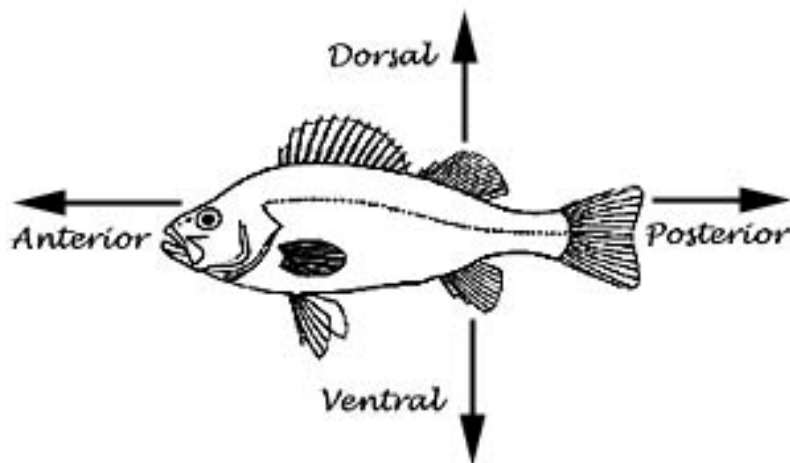
# Anatomy

- External vs. Internal
- Hard Anatomy
- Soft Anatomy

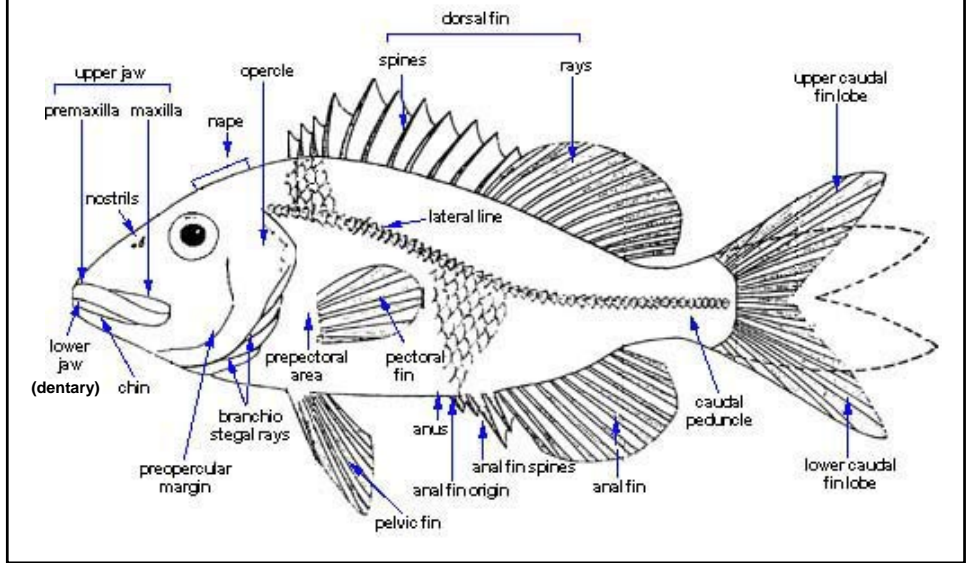
## Hard Anatomy - more in lab



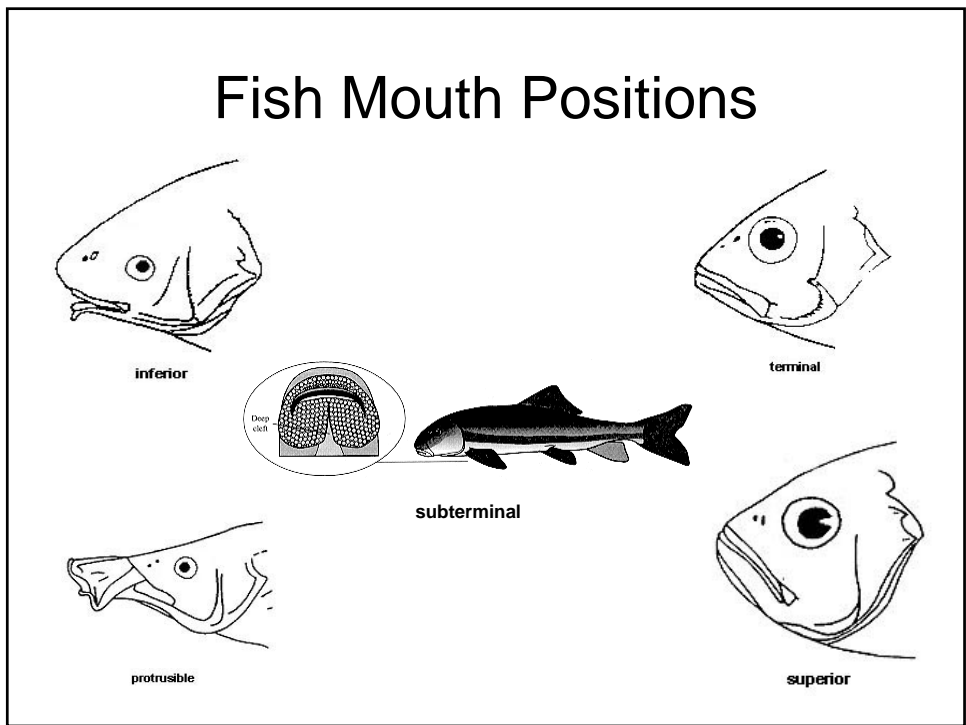
## External Anatomy



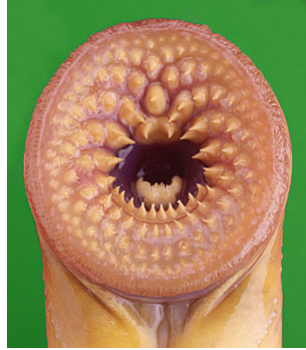
# External Anatomy



# Fish Mouth Positions



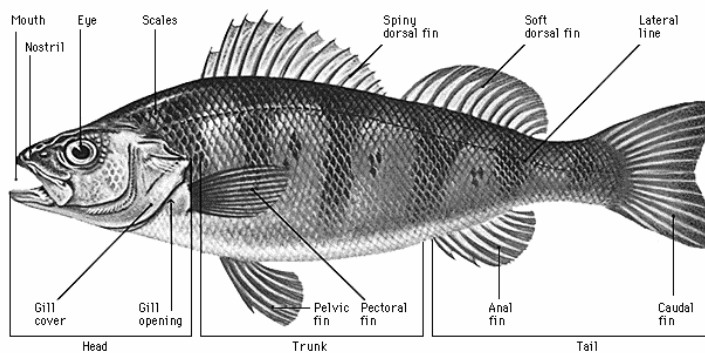
## Fish Mouth Positions



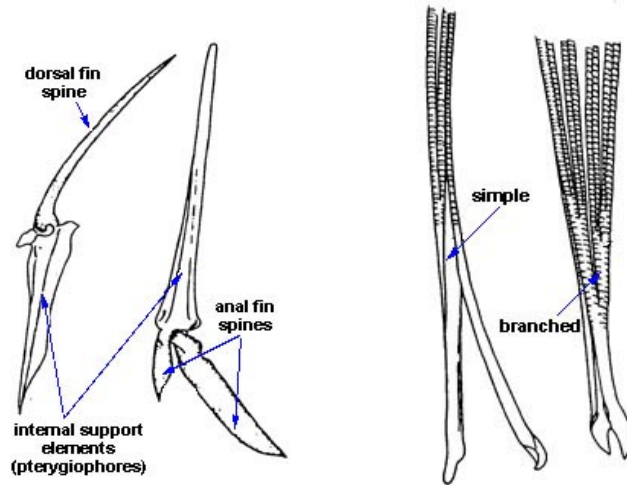
## Fins - External Anatomy

**Medial Fins** - Dorsal Fin, Caudal Fin, Anal Fin, Adipose

**Lateral fins (paired)** - Pelvic Fins, Pectoral Fins



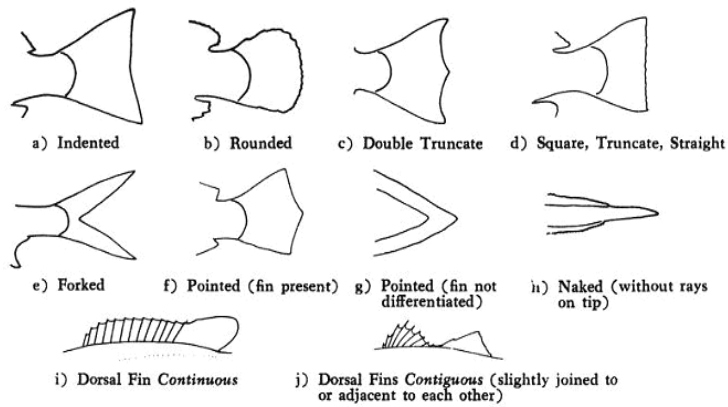
## Internal Anatomy - Fins Fin Spines and Rays



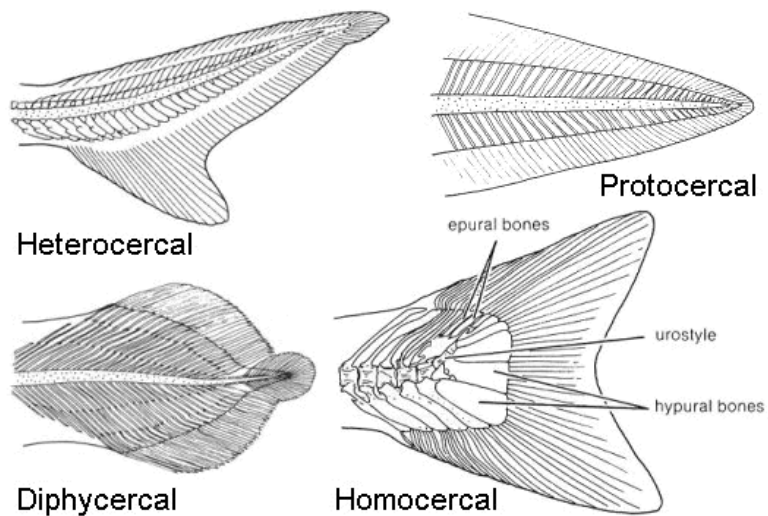
## Modified Spines



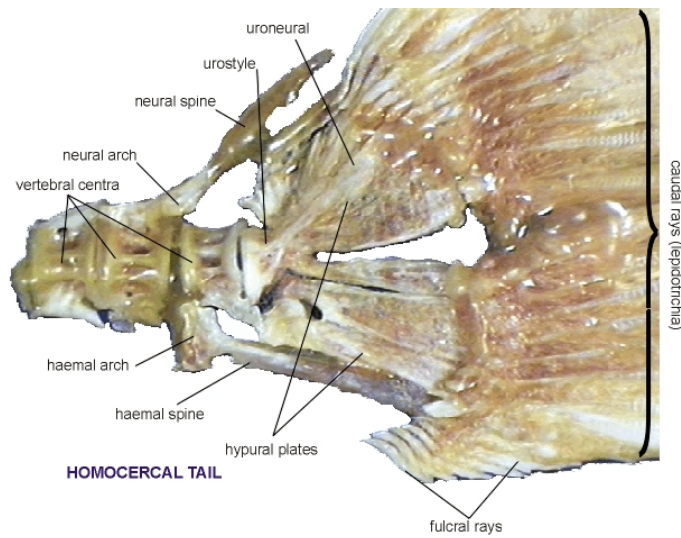
## External Anatomy Caudal and Dorsal Fins



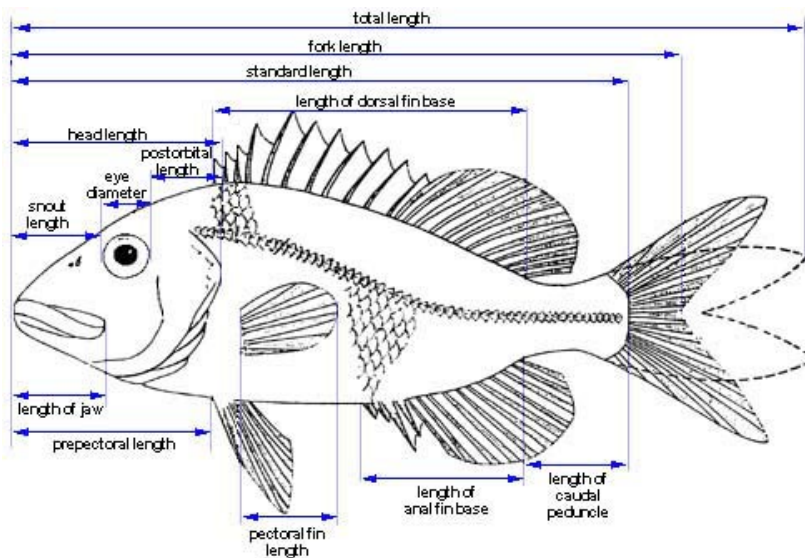
## External Anatomy Caudal Fins



# Caudal Fin – Homocercal Tail

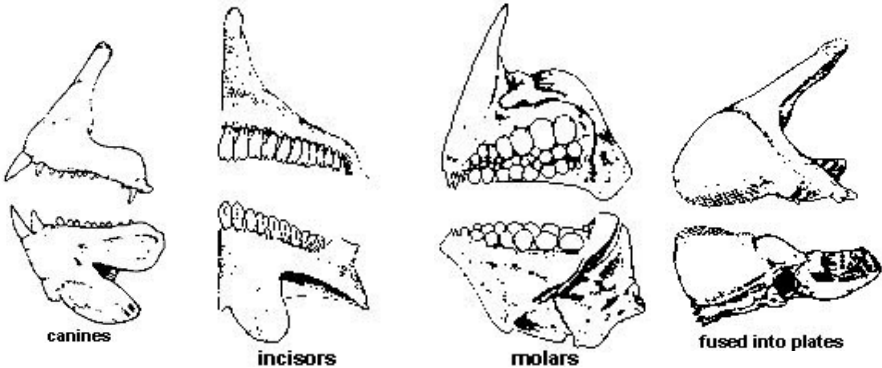


# External Measurements

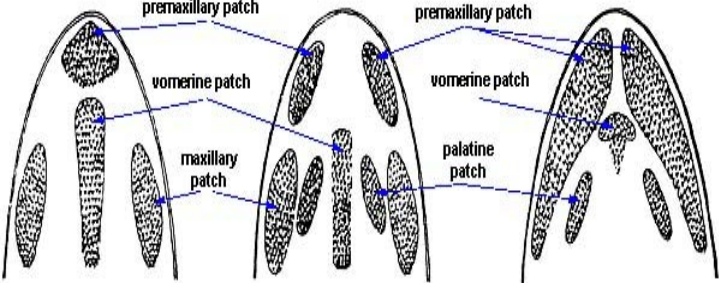




# Fish Teeth



# Fish Teeth

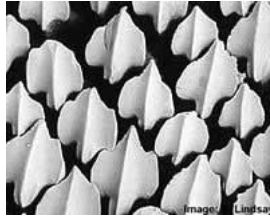




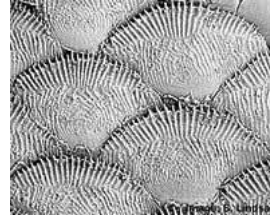
## Scales – Placoid, Cosmoid, Ganoid, Cycloid, Ctenoid



cosmoid



placoid



ctenoid

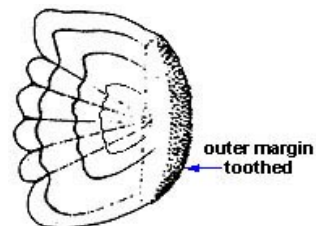
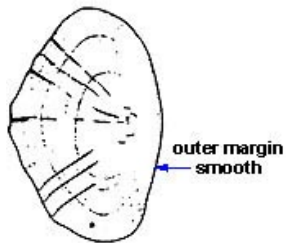


ganoid



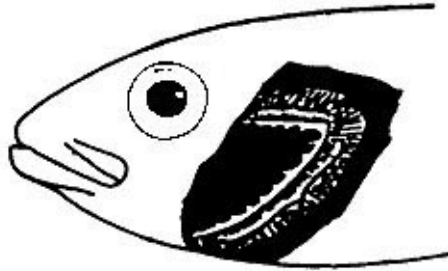
cycloid

## External Anatomy Scales

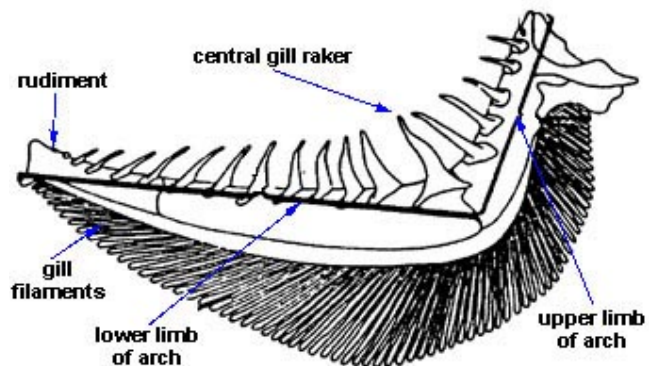


•Aging scales – Circuli and Annulus

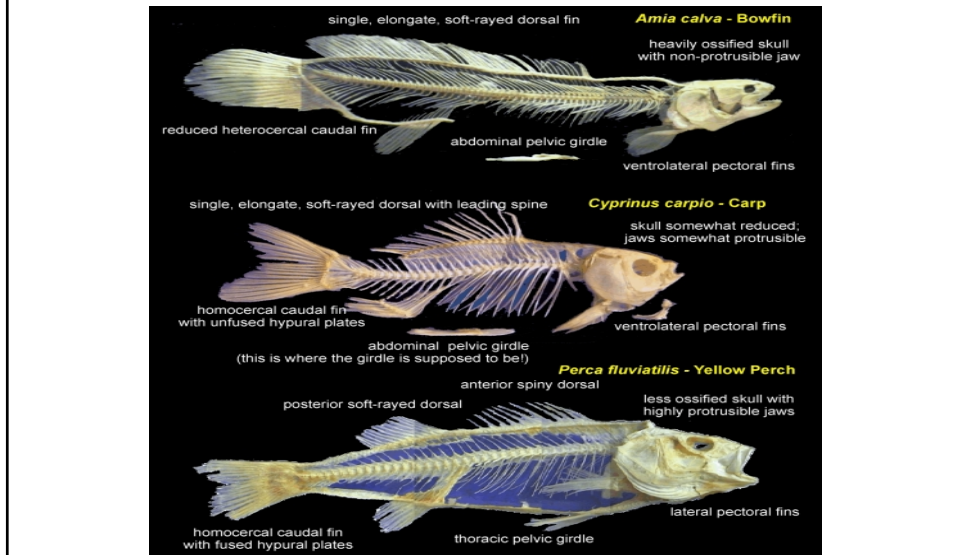
## Internal Anatomy Gill Arch – Cover Removed



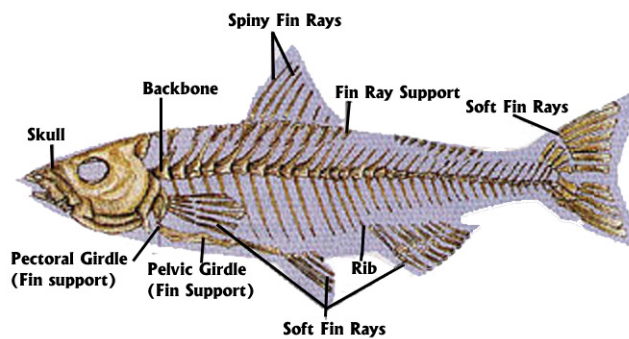
## Internal Anatomy Gill Arches



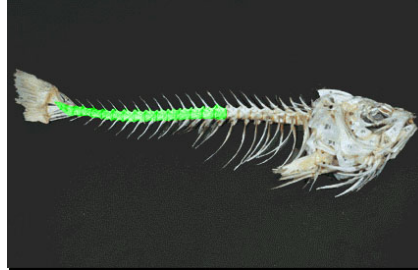
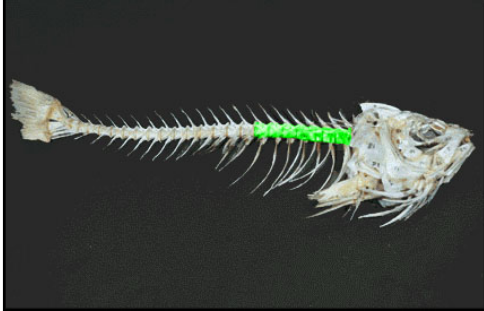
# Fish Skeletons – so many bones, so little time – Axial vs Head



# Internal Anatomy Axial Skeleton

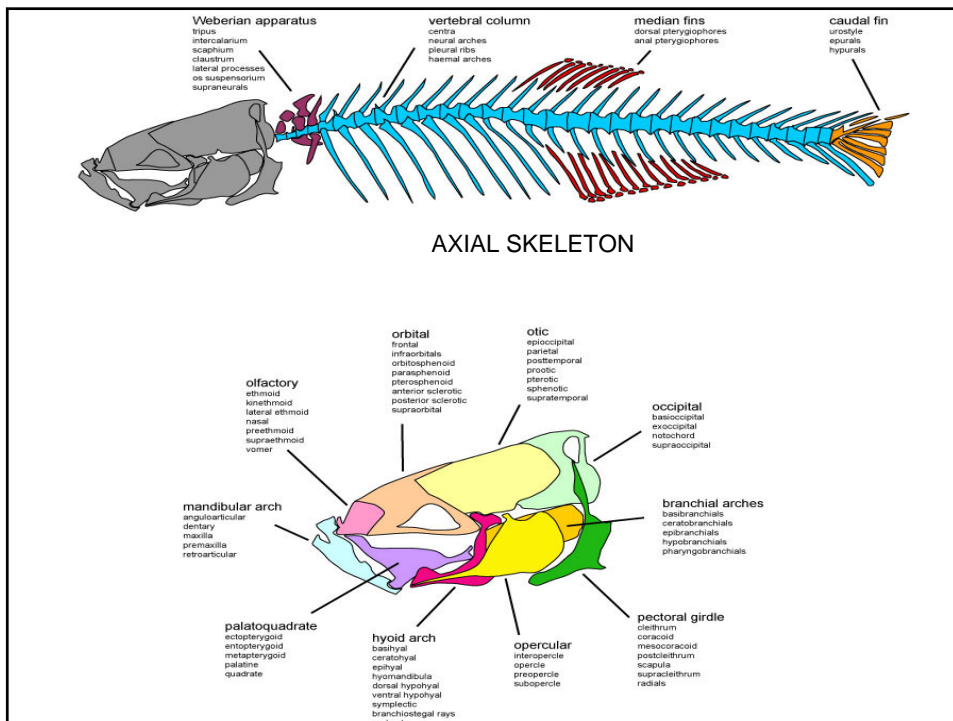
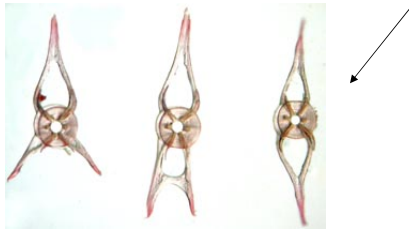


# Internal Anatomy – Trunk



Abdominal Vertebrae

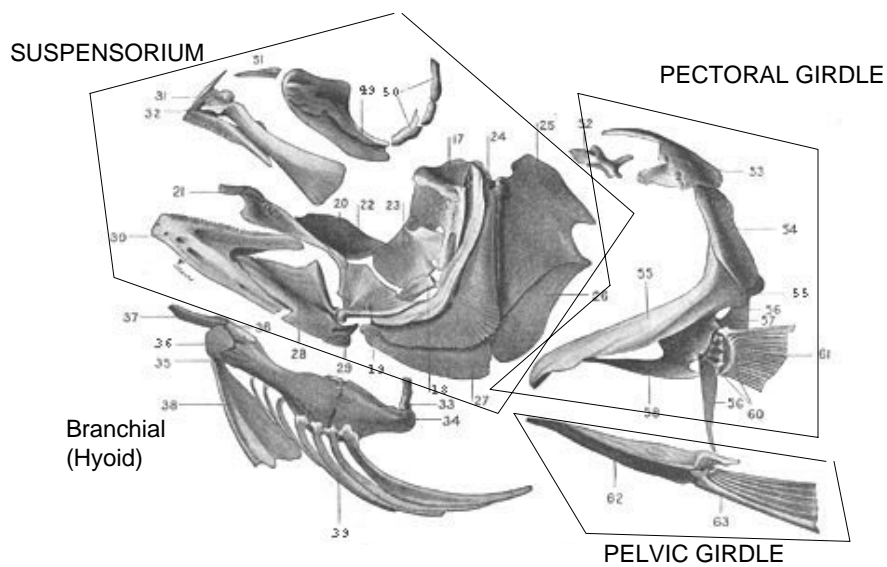
Caudal Vertebrae



The head skeleton of a fish = three components, the **neurocranium** (braincase), **suspensorium** (jaws plus whatever other structures suspend them from neurocranium), and **branchial skeleton** (holds the gills).

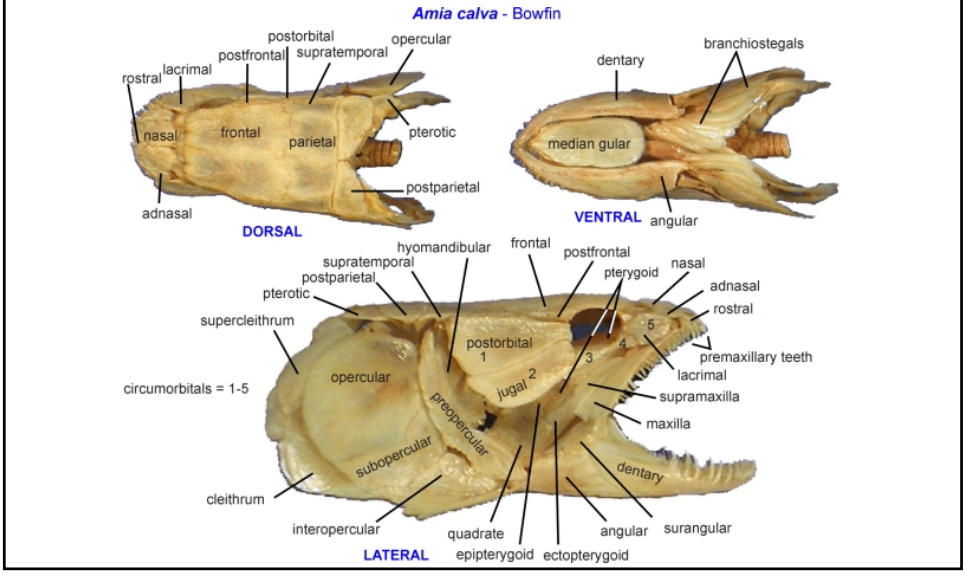


## Internal Anatomy Head – No neurocranium

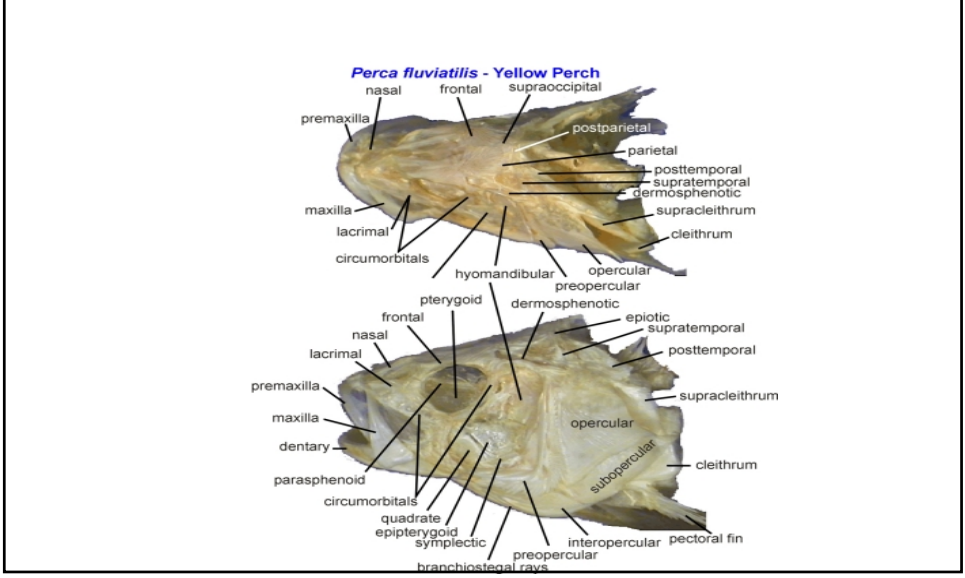




# Internal Anatomy – Head *Amia calva*



# Internal Anatomy – Head *Perca fluviatilis*



## Other Characters

- Lateral Line System
- complete v incomplete

