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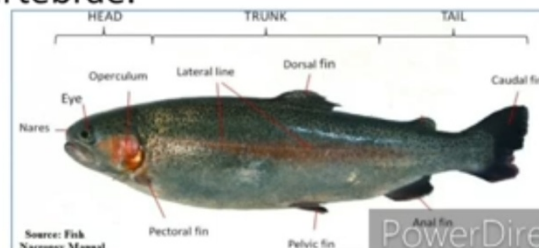
Pisces: Introduction

- Pisces word originate from Latin word - *Piscis* = Fish.
- All true fishes are belong to super class Pisces.
- Golden period of fishes= **Devonian period**.
- 34,362 species of Pisces reported from world and 3,396 from India.
- Study of fishes is called **Ichthyology**.

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Pisces: General Characters

- ❑ **Habitat:** They are aquatic (fresh /marine water).
- They are cold blooded (Poikilothermous/Ectotherms).
- ❑ **Body Structure:** Body is long, boat shaped and stream lined.
- Body is divided into **head, trunk and tail**. Neck is absent.
- Mouth-terminal/sub-terminal
- ❑ Notochord convert in to vertebrae.



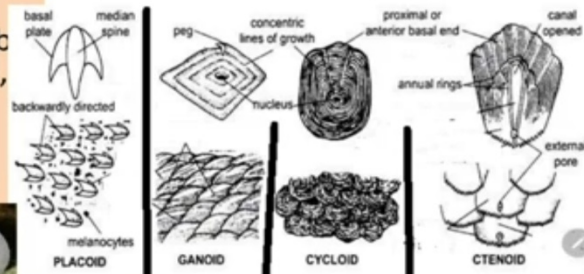
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❑ Skeleton:

1. **Exoskeleton:** Body is covered by dermal scales (Placoid, cycloid, ctenoid, ganoid).

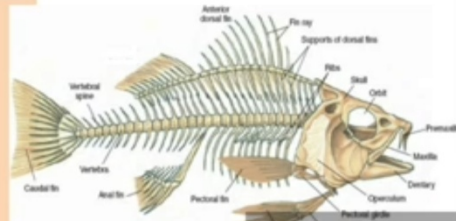
❖ Origin of scale: Mesodermal.

- Cat fish, Wallagonia & Torpedo fishes are scale less.



2. Endoskeleton:

- Made by cartilage or bones.
- Vertebrae- Amphicoelous (centrum-concave at both the surfaces).
- **Monocondylic Skull**



Pisces: General Characters

- ❑ **Fins:** **Paired fins** are present for swimming (**Pectoral and pelvic fins**).

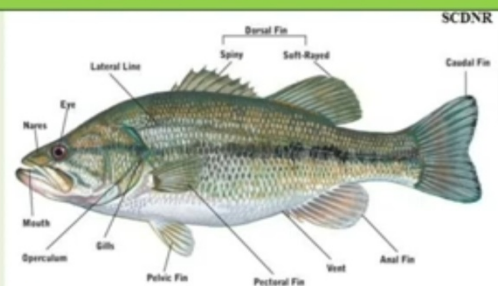
- **Unpaired fins** (mid dorsal fin, caudal fin and anal fin) are also found.

- ❑ **Skin:** Slime glands present in Skin.

- Dermis have Eiridocytes, which is provided color to fishes.

- ❑ **Ear:** External and middle ears are absent.

- ✓ Internal ear have **3 semicircular** canal, which function as a **statoreceptor** (balancing).



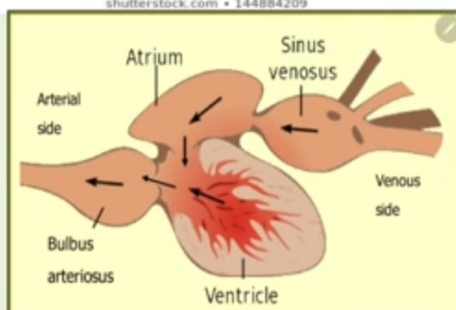
❑ Respiratory system:

- **Dirhynous condition.**
- Respiration by **gills (5-7 pairs)** which are naked or covered by operculum.
- Air bladder that help in swimming (bony fishes) and in respiration (lung fishes).



- ❑ **Blood Vascular System:** Circulation closed type.

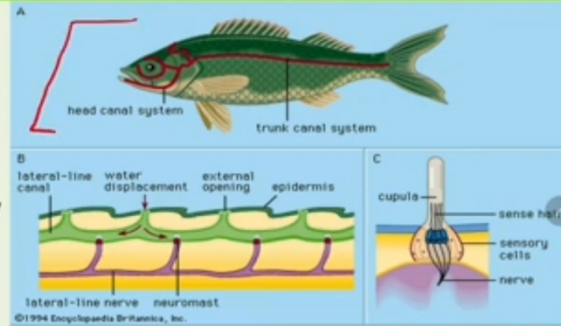
- Heart **two chambered** (Venous heart), Gills help in purification.
- **Single circulation** of blood.
- Heart have **Sinus venosus & Truncus arteriosus**. RBC are nucleated.
- **Renal and hepatic** portal systems are present.



Pisces: General Characters

❑ Sensory Organ:

- ✓ Lateral line sensory system is present in the body of all fishes.
- ✓ **Lateral line system** have many receptor organs which can detect vibrations (**Rheoreceptor**) and Electric field.



❑ Nervous system: Brain develop & Cranial nerves **10 pairs**.

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Pisces: General Characters

❑ Excretory system: Mesonephric Kidney present, Urinary bladder absent. ✓

- Cartilaginous fishes are ureotelic, and bony fishes are Ammonotelic along with TMAO (Tri Methyl Amine Oxide) also excreted.

❑ Reproduction system: Fishes are Unisexual.

- Fertilization:- External and Internal (claspers organ in male).
- Female fish are Oviparous or ovoviviparous.
- Development direct.
- Fishes are An-amniota (absent extra-embyonic membranes).
- Baby fishes are called Fry hatchling.

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