

Class Pisces (Fishes)

Introduction

Pisces is a major class of **aquatic vertebrates** under the superclass **Gnathostomata**. Members of this group are commonly known as fishes. They are the earliest jawed vertebrates and are well adapted for life in water.

Examples: *Rohu, Catla, Shark, Ray*

General Characteristics of Pisces

1. Aquatic vertebrates found in **freshwater and marine habitats**.
2. Body is usually **streamlined** and divided into head, trunk, and tail.
3. **Endoskeleton** may be cartilaginous or bony.
4. **Jaws present** with teeth.
5. Body usually covered with **scales** (placoid, ganoid, cycloid, or ctenoid).
6. **Paired fins** (pectoral and pelvic) and **median fins** present.
7. Respiration by **gills** throughout life.
8. **Swim bladder** present in most bony fishes.
9. Heart is **two-chambered** (one atrium and one ventricle).
10. Circulation is **single and closed**.
11. Sexes usually separate.
12. Fertilization may be external or internal.
13. Development may be direct or indirect.
14. Excretion mainly by **ammonia** (ammonotelic).

External Morphology

- Skin is slimy and covered with scales.
- Lateral line system present for detecting vibrations.
- Fins help in locomotion, balance, and steering.

Respiratory System

- Respiration through **gills**.
- In bony fishes, gills are covered by **operculum**.
- In cartilaginous fishes, gill slits are exposed.

Circulatory System

- Heart consists of:
 - Sinus venosus
 - Atrium
 - Ventricle
 - Conus arteriosus
- Only deoxygenated blood flows through heart.

Excretory System

- Kidneys are **opisthonephric**.
- Main nitrogenous waste is ammonia.

Classification of Pisces

Pisces is broadly divided into **two classes**:

I. Class Chondrichthyes (Cartilaginous Fishes)

General Characters:

1. Endoskeleton made of cartilage.
2. Body covered with **placoid scales**.
3. **5–7 pairs of gill slits**, not covered by operculum.
4. Swim bladder absent.
5. Mouth ventral.
6. Fertilization internal.

Examples:

- *Scoliodon* (Dogfish)
- *Trygon* (Stingray)
- *Pristis* (Sawfish)

II. Class Osteichthyes (Bony Fishes)

General Characters:

1. Endoskeleton made of bone.
2. Body covered with **cycloid or ctenoid scales**.
3. Gills covered by operculum.
4. Swim bladder present.

5. Mouth terminal.
6. Fertilization mostly external.

Examples:

- *Labeo* (Rohu)
- *Catla*
- *Hippocampus* (Seahorse)

Differences Between Chondrichthyes and Osteichthyes

Chondrichthyes	Osteichthyes
Cartilaginous skeleton	Bony skeleton
Placoid scales	Cycloid/Ctenoid scales
Operculum absent	Operculum present
Swim bladder absent	Swim bladder present
Internal fertilization	Mostly external fertilization

Conclusion

Pisces represents a diverse and successful group of vertebrates adapted to aquatic life. They form an important link in vertebrate evolution and are economically valuable.