

CLASSIFICATION OF CHONDRICHTHYS

DEGREE-I

Classification of Chondrichthys

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General Characters of Chondrichthys (Gr., chondros, cartilage + ichthys, fish)

1. Mostly marine and predaceous.
2. Body spindle shaped.
3. Fins both median and paired
4. Pelvic fins have claspers in male.
5. Tail heterocercal
6. Skin tough and contains placoid scales and mucous glands.
7. Endoskeleton cartilaginous
8. Notochord persistent.
9. Vertebrae complete and separate. Pectoral and pelvic girdles present.
10. Mouth ventral
11. Jaws present
12. Teeth modified placoid scales
13. Stomach J-shaped
14. Intestine with spiral valve
15. Respiration by 5 to 7 pairs of gills
16. No operculum absent
17. No air bladder and lungs
18. Heart 2-chambered (1 auricle and 1 ventricle)
19. Renal and hepatic portal systems present.
20. Poikilothermous
21. Kidneys opisthonephric
22. Excretion ureotelic. Cloaca present.
23. Olfactory lobes and cerebellum large.
24. Cranial nerves 10 pairs.
25. Membranous labyrinth with 3 semicircular canals.
26. Lateral line system present

27. Sexes separate. Gonads paired.
28. Fertilization internal
29. Oviparous or ovoviviparous
30. Cleavage meroblastic
31. Development direct, without metamorphosis.

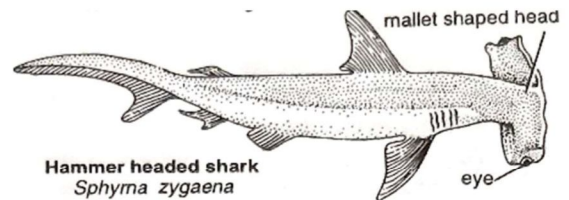
The class Chondrichthyes is also called Elasmobranchii (Gr. elamos. plate + branchia, gills). It has about 600 living species (according to Schultz) of cartilaginous fishes. The classification followed here is based on Romer (1959).

Subclass I. Selachii (Gr. selachos, a shark)

1. Multiple gill slits on either side
2. Gill slits protected skin flaps
3. A spiracle behind each eye
4. Cloaca present

Order I. Squaliformes or Pleurotremata

1. Body typically spindle-shaped
2. Gill slits lateral, 5 to 7 pairs.
3. Spiracles small
4. Pectoral fins constricted at base
5. Tail heterocercal

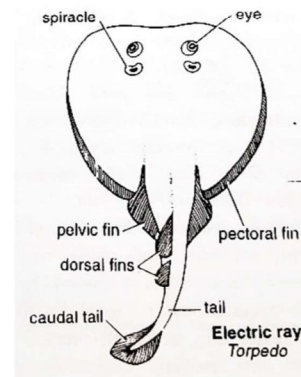


Examples: True sharks. About 250 living species

Dogfishes (*Scoliodon*, *Chiloscyllium*, *Mustelus*), spiny dogfish, seven gilled shark (*Heptanchus*), zebra shark (*Stegostoma*), hammer-headed (*Sphyrna*), whale shark (*Rhineodon*).

Order 2. Rajiformes or Hypotremata

1. Body depressed, flattened dorso-ventrally
2. Gill slits ventral, 5 pairs
3. Pectoral fins fused to sides of head and body
4. Spiracles large, highly functional

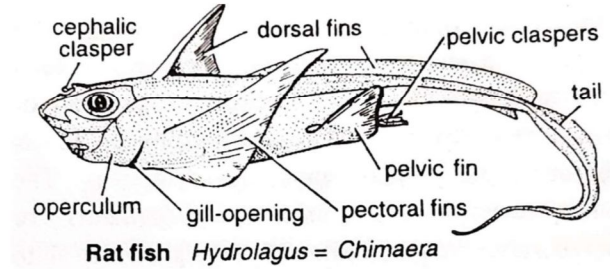


Examples : Skates and rays.

About 300 species. Skate (*Raja*), stingray (*Trygon*), electric ray (*Torpedo*), eagle ray (*Myliobatis*), guitar fish (*Rhinobatus*)

Subclass 2. Holocephali

1. Single gill opening on either side covered by operculum
2. No spiracles, cloaca and scales
3. Jaws with tooth plates
4. Single nasal opening
5. Lateral line system has open groove



Examples : Rat fishes or chimaeras. About 25 species. Hydrolagus (= *Chimaera*).