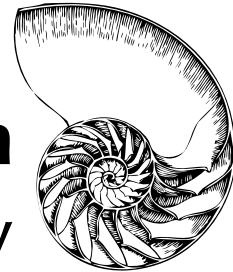


Bell Pettigrew Museum of Natural History

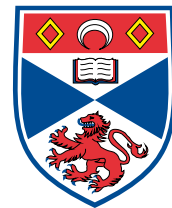


Interpretative Panels

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School of Biology
<http://biology.st-andrews.ac.uk>



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17:3 Chondrichthyes

Phylum Chordata

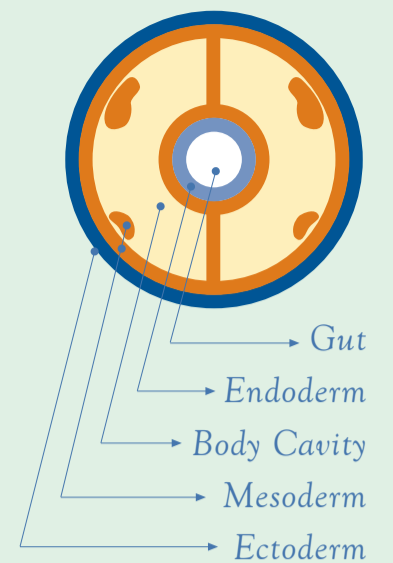
Sub phylum Vertebrata

Super class Gnathostomata

Class Chondrichthyes

Body Plan:

- Bilaterally symmetrical
- Triploblastic
- Coelomic body cavity, and through gut
- Deuterostome
- Lacks swim bladder



The Chondrichthyes arose during the Paleozoic and radiated during the Mesozoic into a group of specialised marine predators. In contrast to the agnathan fishes, which arose at around the same time, they have tough jaws that are braced against the cranium. Two sub-classes survive: Holocephali (the chimaeras) and Elasmobranchii (the sharks, skates and rays).

Early forms were often heavily armoured. Modern survivors however are streamlined with complex fins for control when swimming. They also possess highly developed sensory systems including an electro-receptive organ.

Classification

within

Chondrichthyes

Sub-class: Holocephali (Chimaeras and ratfishes)

Superorder: Paraselachimorpha †

Order: (5 extinct orders)

Superorder: Holocephalimorpha †

Order: (2 extinct orders)

Order: Chimaeriformes

Sub-class: Elasmobranchii (Sharks, skates and rays)

Order: Cladoselachiiiformes †

Order: Xenacanthiformes †

Order: Ctenacanthiformes †

Order: Hybodontiformes †

Order: Heterodontiformes (Horn sharks)

Order: Orectolobiformes (Carpet and nurse sharks)

Order: Carcharhiniformes (Cat and hammerhead sharks)

Order: Lamniformes (Thresher and tiger sharks)

Order: Hexanchiformes (Frill sharks)

Order: Squaliformes (Sleeper sharks and dogfish)

Order: Squatiniformes (Angel sharks)

Order: Pristiophoriformes (Sawsharks)

Order: Rajiformes (Skates and Rays)

† Extinct.

● See specimen.

Cartilaginous fish

- The Chondrichthyes contains the sharks, skates and rays. All the fish in this class have skeletons made of cartilage.
- Their well developed senses, strong jaws and powerful swimming muscles have made some of the sharks fearsome predators. Of the nearly 400 species of shark only 30 are known to occasionally attack humans. The majority eat other fish or molluscs and crustaceans.
- The class includes the world's largest fish, the whale shark (*Rhiniodon typus*) which can be up to 18 metres long, but is a filter feeder eating mainly plankton.
- Sharks constantly replace their teeth **D**. The lemon shark (*Negaprion brevirostris*) replaces a row of teeth every eight days and produces over 30,000 teeth in a lifetime.