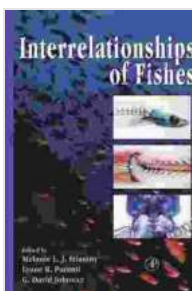# Interrelationships of Fishes: A Comprehensive Guide

Fishes are a diverse and fascinating group of vertebrates that have inhabited Earth's waters for over 500 million years. They exhibit a remarkable range of forms and adaptations, from the primitive jawless lampreys to the highly specialized electric eels. Understanding the interrelationships of fishes is essential for comprehending the evolutionary history and diversity of these aquatic creatures.

Jawless fishes, also known as agnathans, are the most primitive group of fishes. They lack jaws and paired fins, and their bodies are supported by a cartilaginous notochord. The two main groups of jawless fishes are lampreys and hagfish.

Lampreys are eel-shaped predators that attach themselves to other fish and feed on their blood. Hagfish are scaleless, worm-like scavengers that feed on dead or dying fish.

Interrelationships of Fishes by Lynne R. Parenti

★★★★★ 5 out of 5

Language	: English
File size	: 54523 KB
Screen Reader	: Supported
Print length	: 496 pages
X-Ray	: Enabled
X-Ray for textbooks	: Enabled

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Cartilaginous fishes, also known as chondrichthyans, have skeletons made of cartilage instead of bone. They include sharks, rays, and skates. Sharks are the most well-known cartilaginous fishes, and they possess a variety of adaptations for hunting, including sharp teeth, powerful jaws, and streamlined bodies. Rays and skates are bottom-dwelling fish that have flattened bodies and enlarged pectoral fins.

Bony fishes, also known as osteichthyans, have skeletons made of bone. They are the most diverse group of fishes, and they include over 30,000 species. Bony fishes exhibit a wide range of sizes, shapes, and habitats. Some bony fishes, such as tuna, are fast-swimming predators, while others, such as anglerfish, are ambush predators that lure their prey with bioluminescent lures.

The phylogenetic relationships of fishes have been studied extensively using a variety of techniques, including comparative anatomy, molecular data, and fossil evidence. These studies have revealed that fishes are divided into two main groups: the jawless fishes and the jawed fishes. The jawed fishes are further divided into two groups: the cartilaginous fishes and the bony fishes.

The taxonomy of fishes is based on their phylogenetic relationships. The following is a classification of fishes according to the latest scientific consensus:

- **Kingdom:** Animalia
- **Phylum:** Chordata
- **Subphylum:** Vertebrata

- **Infraphylum:** Gnathostomata

- **Superclass:** Pisces

- **Class:** Agnatha (jawless fishes)

- **Order:** Petromyzontiformes (lampreys)

- **Order:** Myxiniformes (hagfish)

- **Class:** Chondrichthyes (cartilaginous fishes)

- **Subclass:** Elasmobranchii (sharks, rays, skates)

- **Subclass:** Holocephali (chimaeras)

- **Class:** Osteichthyes (bony fishes)

- **Subclass:** Actinopterygii (ray-finned fishes)

- **Subclass:** Sarcopterygii (lobe-finned fishes)

The interrelationships of fishes are complex and fascinating, reflecting their evolutionary history and diversity. From the primitive jawless fishes to the highly specialized bony fishes, fishes have adapted to a wide range of aquatic habitats and have evolved a variety of unique features. Understanding the relationships of fishes is essential for comprehending the ecology and evolution of these aquatic creatures.
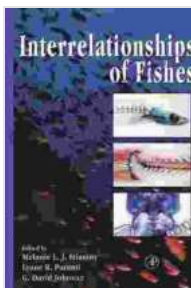
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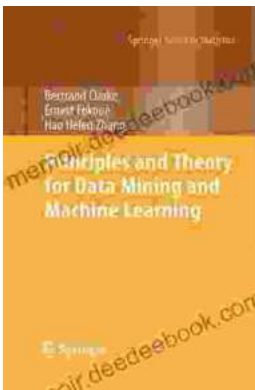
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