1. Record Nr. UNINA9910458083303321

Titolo	Primitive fishes [[electronic resource] /] / edited by David J. McKenzie, Anthony P. Farrell, Colin J. Brauner
Pubbl/distr/stampa	Amsterdam ; ; Boston, : Academic Press, c2007
ISBN	1-281-02880-0 9786611028800 0-08-054952-7
Descrizione fisica	1 online resource (576 p.)
Collana	Fish physiology ; ; v. 26
Altri autori (Persone)	McKenzieDavid J <1962-> (David John) FarrellAnthony Peter <1952-> BraunerColin J
Disciplina	571.1/7 571.17 597/.01
Soggetti	Fishes - Physiology Fishes - Evolution Living fossils Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	"The primitive fishes that this book focuses on inlcude the jawless agnathans (hagfishes and lampreys), the lobe-finned sarcopterygians (coelacanth and lungfishes), and the primitive ray-finned actinopterygian fishes (the sturgeons, the bichirs and the ropefish, the gars, and the bowfin)"--Pref.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Front Cover; Primitive Fishes; Copyright Page; Contents; Contributors; Preface; Chapter 1: Living Primitive Fishes and Fishes From Deep Time; 1. Introduction; 2. Primitive Characters, Primitive Taxa, and Ancient Taxa; 3. Living Fossils; 4. Living Primitive Fishes in Vertebrate Phylogeny; 4.1. The Hagfish-Lamprey-Gnathostome Node; 4.2. The Gar-Bowfin-Teleosts Node; 4.3. The Coelacanth-Lungfish-Tetrapod Node; 4.4. Other Problematic Nodes; 5. Living Primitive Fishes and Their Fossil Relatives: Naming and Dating Taxa; 5.1. Hagfishes and Lampreys; 5.2. Chondrichthyans; 5.3. Actinopterygians 5.4. Sarcopterygians6. Extinct Major Fish Taxa and Their Position in

Vertebrate Phylogeny; 6.1. Yunnanozoans and Myllokunmingiids; 6.2. ""Ostracoderms""; 6.3. Placoderms; 6.4. Acanthodians; 6.5. ""Paleoniscoids"" and Basal Neopterygians; 6.6. Extinct Sarcopterygian Taxa; 7. How Stable is Vertebrate Phylogeny?; 8. Fossils and Physiology; 9. The Environment of Early Fishes: Marine Versus Freshwater Vertebrates; 10. Conclusions; References; Chapter 2: Cardiovascular Systems in Primitive Fishes; 1. Introduction; 1.1. Scope of the Chapter; 1.2. Measurement Systems: Their Benefits and Limitations
2. An Overview of Evolutionary Progressions2.1. Anatomical Patterns; 2.2. Physiological Patterns; 3. Details of the Cyclostome Circulatory Systems; 3.1. Hagfishes; 3.2. Lampreys; 4. Details of the Sarcopterygii (Lobe-Finned Fishes) Circulatory Systems; 4.1. Coelacanth; 4.2. Dipnoi (Lungfishes); 5. Details of the Circulatory Systems in Polypterids, Gars, and Bowfins; 5.1. Polypterids (Bichirs and Reedfish); 5.2. Garfishes; 5.3. Amia (Bowfins); 6. Details of the Sturgeon Circulatory Systems; 6.1. Cardiac Anatomy; 6.2. Circulatory Patterns; 6.3. Cardiac Dynamics; 6.4. Circulatory Control
7. ConclusionsAcknowledgements; References; Chapter 3: Nervous and Sensory Systems; 1. Introduction; 2. Development of the CNS; 3. The Brains of Primitive Fishes; 3.1. Agnathans (Hagfishes and Lampreys); 3.2. Sarcopterygians (Lobe-Finned Fishes); 3.3. Actinopterygians (Early Ray-Finned Fishes); 4. Functional Classification of Cranial Nerves in Fishes; 5. The Visual System; 5.1. The Optical Apparatus; 5.2. Retina and Visual Function; 5.3. Spectral Filters; 5.4. Visual Sensitivity; 5.5. Visual Resolution; 5.6. Visual Input to the CNS; 5.7. Nonvisual Photoreception; 6. Chemoreceptive Systems
6.1. Olfaction6.2. Gustation; 6.3. Solitary Chemoreceptor Systems; 7. Octavolateralis System; 7.1. Audition; 7.2. Vestibular Control; 7.3. Lateral Line; 8. Electroreception; 8.1. Structure, Function, and Evolution of Ampullary Receptors; 8.2. Role in Passive Electrolocation; 9. Concluding Remarks; References; Chapter 4: Ventilatory Systems; 1. Introduction; 2. Respiratory Strategies; 3. Respiratory Organs; 3.1. Water Breathing; 3.2. Air Breathing; 4. Ventilatory Mechanisms; 4.1. Cutaneous Gas Exchange; 4.2. Ventilation of External Gills; 4.3. Ventilation of Internal Gills
4.4. Ventilation of ABOs

Sommario/riassunto

Primitive fishes are a relatively untapped resource in the scientific search for insights into the evolution of physiological systems in fishes and higher vertebrates. Volume 26 in the Fish Physiology series presents what is known about the physiology of these fish in comparison with the two fish groups that dominate today, the modern elasmobranchs and the teleosts. Chapters include reviews on what is known about cardiovascular, nervous and ventilatory systems, gas exchange, ion and nitrogenous waste regulation, muscles and locomotion, endocrine systems, and reproduction. Editors prov