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Nota di contenuto	General Introduction to the Siberian Sturgeon Books with a Focus On Volume 1 Dedicated to the Biology of the Species -- Part I: Biology & Ecology -- Wild Populations: Geographical Distribution, Ecological and Biological Characteristics of the Siberian Sturgeon Species -- Species Specificity: What Makes the Difference Between the Siberian Sturgeon and the Ponto-Caspian Sturgeon Species? -- Anatomy: Anatomic Description -- Skeleton: The Axial Skeleton of the Siberian Sturgeon Development Organization, Structure and New Insights on

Mineralization and Ossification of Vertebral Elements -- Sex: Evolution of Molecular Investigations on Sturgeon Sex Determination and Most Recent Developments in DNA Methylation with a Focus on the Siberian Sturgeon -- Sex Determination and Differentiation of the Siberian Sturgeon -- Genetics: Analysis of Transposable Elements Expressed in the Gonads of the Siberian Sturgeon -- Ontogeny: Early Ontogeny in the Siberian Sturgeon -- Behavior: Behavior of Early Life Stages in the Siberian Sturgeon -- Sensory Capacity: Olfaction and Gustation in Acipenseridae, with Special Reference to the Siberian Sturgeon -- Nutrition: Nutritional Requirements of the Siberian Sturgeon: An Updated Synthesis -- Swimming: Swimming Characteristics of the Siberian Sturgeon -- Part II. Biology & Physiology of Reproduction -- Central Nervous System: Chemical Neuroanatomy of the Hypothalamo-Hypophyseal System in Sturgeons -- Oogenesis: An Updated Version of Histological and Ultrastructural Studies of Oogenesis in the Siberian Sturgeon *Acipenser Baerii*. Male Function: Sperm and Spermatozoa Characteristics in the Siberian Sturgeon -- Reproductive Physiology: Gonadal Steroids: Synthesis, Plasmatic Levels and Biological Activities in Sturgeons -- Steroid Profiles Throughout the Hormonal Stimulation in Females *Siberian Sturgeon Acipenser Baerii* Brandt -- Part III. Ecophysiology: Adaptation to Environment -- Respiratory Responses to Hypoxia in the Sturgeon, *Acipenser Baerii* -- Effects of Exposure to Ammonia in Water: Determination of the Sublethal and Lethal Levels in Siberian Sturgeon -- Consequences of High Levels Ammonia Exposure on the Gills Epithelium and on the Haematological Characteristics of the Blood of the Sturgeon, *Acipenser Baerii* -- Acid-Base Balance and Ammonia Loading in the Sturgeon *Acipenser Baerii*, Exposed to High Concentrations of Ammonia -- Effects of Exposure to Ammonia on Plasma, Brain and Muscle Concentrations of Amino-Acids and Adenyl Nucleotides in the Sturgeon, *Acipenser Baerii* -- The Importance of Water Quality in Siberian Sturgeon Farming: Nitrite Toxicity -- Part IV. Specific Methods -- Cannulation in the Cultured Siberian Sturgeon, *Acipenser Baerii* Brandt -- Some Basic Methods in Respiratory Physiology Studies Applied in the Siberian Sturgeon -- General Conclusionsof the Volume 1: Recent Progress in the Biology of *Acipenser Baerii*, An Exciting Subject for Further Academic Research and Development of Aquaculture.

Sommario/riassunto

The biology of the Siberian sturgeon, *Acipenser baerii* Brandt 1869, has become a very attractive subject of investigation for biologists since the 1980s. This volume 1 is part of a two-volume set devoted to the species, the second of which focuses on farming. The present volume is divided into three parts: Biology and ecology, Biology and physiology of reproduction, and Ecophysiology, i.e. adaptation to the environment. The first part addresses a broad range of topics, such as: the ecology, including a new approach to species-specificity, a new insight on the mineralization of vertebral elements, two approaches to sex determination, transposable elements in the gonads, early ontogeny, olfaction and gustation, nutrition and swimming. The second part includes neurochemical and anatomical descriptions of the central nervous system and an updated version of the oogenesis, the characteristics of both sperm and spermatozoa, and a synthesis on gonadal steroids (synthesis, plasmatic levels and biological activities). In turn, the third part reveals how the physiology of the species changes depending on environmental factors such as oxygen, ammonia, and nitrite. Some fundamental consequences of ammonia are developed (sublethal and lethal levels, effects on gill epithelium and haematology, acid-base balance, on AA and adenyl nucleotides levels in plasma, brain and muscle tissue). In addition, the book includes two

methodological chapters dealing with fish dorsal aortic cannulation and
respiration physiology. .
