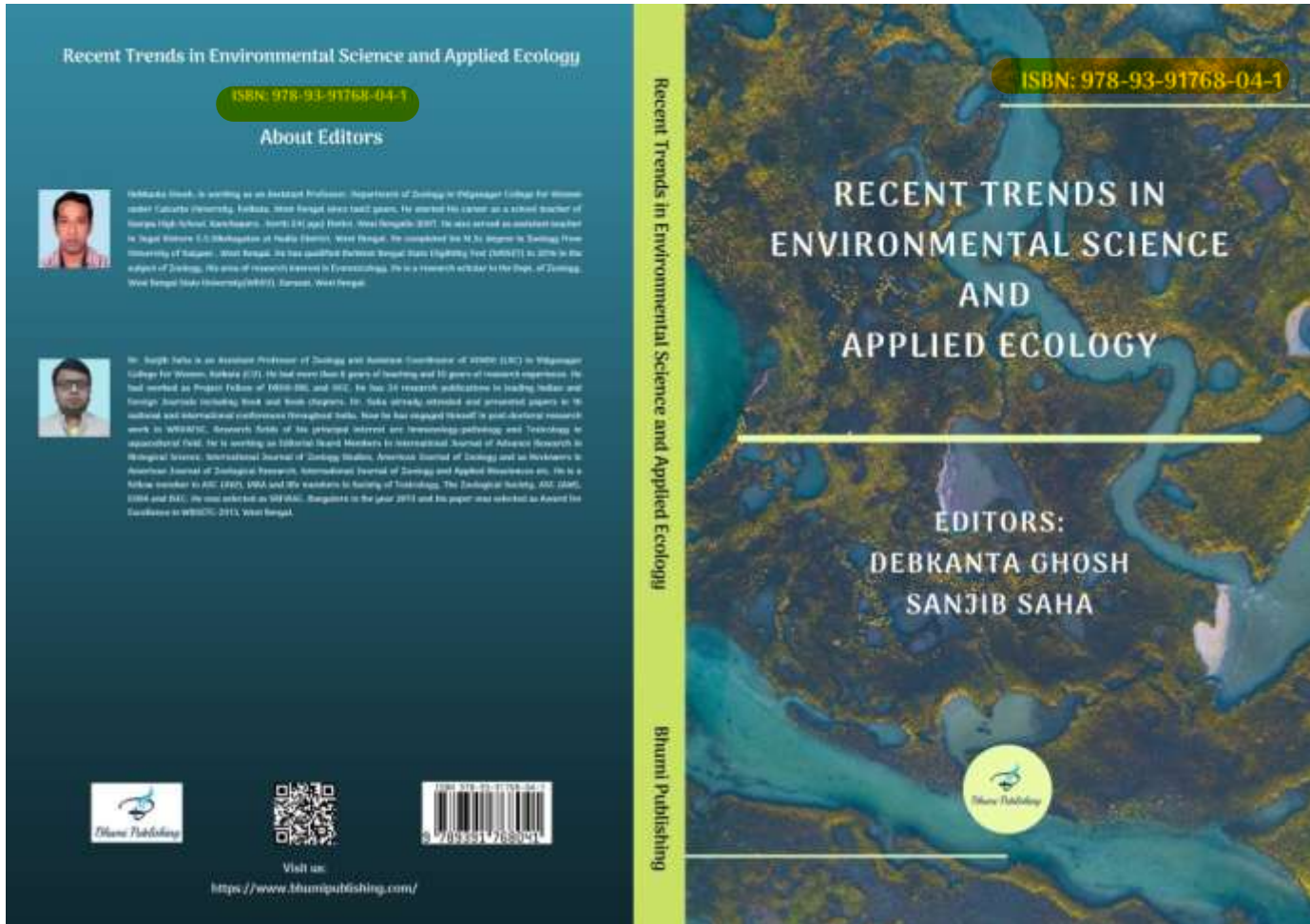


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## *CONTENTS*

Sr. No.	Chapter and Author(s)	Page No.
1	<b>Recent Advances in Fish and Shrimp Health Management for Sustainable Aquaculture</b> Debajyoti Pradhan and Gadadhar Dash	1 – 17
2	<b>A Review on Ecosystem Based Fishery Management</b> Srijoni Basak	18 – 22
3	<b>Scope of Smart Phone with Internet Connection towards the Development in Fishery-A Study in Birbhum, West Bengal, India</b> Md. Ekramuddin	23 – 32
4	<b>A Study of Morphology of Fresh Water Prawn Zoea Larva <i>Macrobrachium lamarrei lamarrei</i> ( H. Milne Edwards, 1837)</b> Indrani Sarkar	33 – 41
5	<b>Histochemical Characteristics and Functional Aspects of The Olfactory Epithelium in an Asian Schilbeid Catfish, <i>Clupisoma garua</i> (Hamilton, 1822)</b> Saroj Kumar Ghosh	42 – 55
6	<b>Micronucleus Assay in Human Buccal Cells as a Tool For Bio-Monitoring Nuclear Anomalies</b> Gargi Dutta	56 – 68
7	<b>Plastic Personal Protective Equipments (PPE)-A Saviour or Curse to Mankind</b> Debolina Sinha	69 – 73
8	<b>Immunopathogenesis of COVID-19 Associated Mucormycosis</b> Mrittika Dasgupta and Suchandra Chowdhury	74 – 81
9	<b>Biodiversity and Consequences of its Depletion: An Indian Perspective</b> Prosenjt Ghosh	82 – 88
10	<b>A Preliminary Report on Faunal Mortality by Wildlife-Vehicle Collision in Transport Networks of West Bengal, India</b> Kanad Roy and Subhendu Mazumdar	89 – 99

**HISTOCHEMICAL CHARACTERISTICS AND FUNCTIONAL ASPECTS OF  
THE OLFATORY EPITHELIUM IN AN ASIAN SCHILBEID CATFISH,  
*CLUPISOMA GARUA* (HAMILTON, 1822)**

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**Abstract:**

The localization of silver reaction appropriate to axons, acid and neutral mucopolysaccharides pertaining to mucous cells, biologically active glycogen, protein and lipid constituents as well as alkaline phosphatase (ALPase) and adenosine triphosphatase (ATPase) in the cells lining the olfactory mucosa of *Clupisoma garua* (Siluriformes, Ailiidae) have been described by employing different histochemical methodology. The silver stain is well marked in the primary and secondary receptor cells as well as rod receptor cells. The highest magnitude of acid and neutral mucin is discernible in the secretory and non-secretory mucous cells. The ciliated and non-ciliated supporting cells contain much glycogen. Variant of protein and lipid localization in the cellular elements of olfactory lining have been correlated with feeding niches of the organism. Acute ALPase and ATPase activity have been observed in the extended dendrite processes of receptor cells, ciliated supporting cells, labyrinth cells and basal cells. The functional significance of the olfactory system has been discussed in relation to the life of fish concerned.

**Keywords:** *Clupisoma garua*, Olfactory system, Cell types, Histochemical feature, Chemoreception

**Introduction:**

Olfaction has profuse functions in the life of fish. Olfactory and gustatory are the main chemosensory pathways that allow the fish to sustain in an aquatic environment. Olfaction is paramount mediator of chemical signals and considered to be of the first range of the behavioural adaptations (Hara, 1994). Olfactory cues perform momentous role in the behavioural activities of fishes such as procurement of food, selection of mate, location of breeding site, run away from predators, parental behaviours, orientation and in many other approaches (Singh *et al.*, 1995). Chemical information is detected by the sensory neurons on the olfactory mucosa which transmit signals directly to the central nervous system by the olfactory tract. The morphoanatomy and