

UDC 597.551.2:612.335

## HISTOLOGICAL AND ULTRASTRUCTURAL STUDIES ON THE INTESTINE OF GUNTEA LOACH, *LEPIDOCEPHALICHTHYS GUNTEA* (CYPRINIFORMES, COBITIDAE)

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**Histological and Ultrastructural Studies on the Intestine of Guntea loach, *Lepidocephalichthys guntea* (Cypriniformes Cobitidae).** Ghosh, S. K. — The cellular organizations of intestine in *Lepidocephalichthys guntea* (Hamilton, 1822) have been described by light as well as scanning and transmission electron microscopy. The intestine is short and straight like, marked into anterior, middle and posterior region based on mucosal folds, number and size of columnar epithelial cells and mucous cells, thickness of submucosa and muscularis layer. The mucosa of anterior intestine forms high folds, which are lined with compactly arranged columnar epithelial cells and mucous cells. In the middle intestine, folds are pointless whereas the posterior intestine is without folds. The submucosa is formed of thin layer of connective tissue, contained collagen bundles and blood capillaries, comparatively well developed in the posterior intestine. By scanning electron microscopy, outlines of the luminal surface of anterior and middle intestine is embossed with oval or rounded columnar epithelial cells contained densely packed stubby microridges. The posterior intestine has closely set longitudinal folds characterized with minute blood capillaries and columnar epithelial cells having inconspicuous microridges. Ultrastructurally, the mucosal surface of the intestine consists of mucous cells with electron dense granules and columnar epithelial cells having numerous microvilli, mitochondria, endoplasmic reticulum, lysosomes and Golgi body. Cellular components of the anterior and middle intestine participate in the absorption whereas the presence of enormous blood vessels and capillary net work of posterior intestine probably responsible for air breathing.

**Key words:** *Lepidocephalichthys guntea*, intestine, histoarchitecture, fine structure.

### Introduction

Fishes exhibit enormous variations in their food habits and feeding specialization. The macroscopic and microscopic features of the alimentary canal along with associated structures also become modified accordingly. Among certain fish species, different parts of the digestive tract function as respiratory organ. The posterior intestine is used for gas exchange by some species belonging to families like Loricaridae, Cobitidae and Callichthyidae (Graham and Baird, 1982; McMahon and Burggren, 1987; Podkowa and Goniakowska-Witalińska, 2002). In some loaches, the digestive phase of the intestine exchanges with the respiratory phase