



Comparative Morphological Study of Lips and Associated Structures of Two Algal Grazer Fish

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Abstract:

The surface architectures of lips and associated structures of red-tail shark (*Epalzeorhynchus bicolor*) and suckermouth catfish (*Hypostomus plecostomus*) are studied, focusing mainly on the type and distribution of the taste buds, with remarks on the distribution of the unculi, mucous cells and microridges. In suckermouth catfish, the mouth is extensively protrusive to form a sucking disc. It possesses one pair of maxillary barbel located in the mouth corners. In red-tail shark, upper lip is associated with enlarged rostral cap. It possessed one pair of mandibular barbels and one pair of maxillary barbels. Differences between the two species are found in shape and organization of the epithelial papillae, unculi, distribution of taste buds, mucous cells and microridge patterns, which are considered as adaptation in relation to mode of life exhibited by fish. Types I taste bud is present in rostral cap of red-tail shark, while type II and III are found in upper and lower lips of suckermouth catfish. A firm rigidity of the epithelial surface of upper and lower lip of suckermouth catfish may be attributed to web-like pattern microridges. While that of rostral cap of red-tail shark are covered by fingerprint-like pattern microridges. These structures protect the free surfaces against mechanical abrasions caused during food swallowing. Moreover, protection and lubrication of the epithelium is enhanced by mucous cell secretions, which distributed in lips and associated structures of both species. Observations of the surface architecture of lips of both species are discussed in relation to suggested function and ecomorphological adaptation.

Keywords:

Lips, Barbels, Taste Buds, Scanning Electron Microscopy, Red Tail Shark, Suckermouth Catfish. 1.

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