E-ISSN 2149-0236
Journal of Aquaculture Engineering and Fisheries Research

Short Communication

Associated Structures of Feeding in Near Threatened Murrel Rainbow Snakehead (Channa bleheri Vierke, 1991)

Nipen Nayak[1], Seuj Dohutia[1], Jyotirmoy Sonowal[2], Shyama Prasad Biswas[1]

[1]Department of Life Sciences, Dibrugarh University

[2]D.D.R College, Chabua, Dibrugarh

Received: 13.06.2021

Accepted: 20.06.2021

Published online: 22.11.2021

Corresponding author:

Nipen Nayak, Department of Life Sciences, Dibrugarh University

E-mail: nipennayak2014@gmail.com

Abstract:

Associated structure of C. bleheri like other species of Channa is also modified for carnivorous mode of feeding. Features like wide mouth opening of mouth, thick stomach, polyphyodont teeth directed backwards surrounded by papillated jaw, the upper jaw and lower jaw reflects their adaptability towards different live food. Lower jaw is not protrusible and larger as compared to upper jaw. The buccal cavity is capacious with presence of palatine, maxillary, pre-maxillary and vomerine in upper jaw and mandibular teeth in the lower jaw with the presence of gill rakers.

Keywords: C. bleheri, carnivorous, jaw

JOURNAL OF AQUACULTURE ENGINEERING AND FISHERIES RESEARCH
E-ISSN 2149-0236

7(7): 1-4(2021)

Introduction

C. bleheri is an endemic murrel found in the different water bodies of Upper Brahmaputra. Due to its exploitation in the name of ornamental trade, this species is enlisted as Near Threatened according to IUCN red list (ver. 3.1) (Lakra et al., 2010). Understanding the different aspects of feeding is one of the preliminary approaches in conservation of fish species. Hence, detail aspects on the associated structure of C. bleheri related to feeding was studied.

Mouth cavity of fishes shows agility and adaptability towards exploitation of different food items (Kapoor et al., 1975). According to Huysseune and Sire (1998) teleost fishes have combination of two triats i.e. teeth on numerous bones of oral jaws, tongue and plate; pharyngo-branchial skeleton and polyphyodonty (many tooth generations). Teeth are generally found in oropharyngeal cavity of most fishes frequently associated with pharyngeal jaws in pharynx just anterior to oesophagus (Casciotta and Arratia, 1993). Alimentary canal in fishes starts with lip and buccal cavity and ends through intestine and rectum (Borman et al., 2015). The knowledge on the associated structures of feeding will be very beneficial to understand the type of food and mechanism of food intake by this species.

Materials and Methods

Specimen were collected from different lotic and lentic waters bodies of Dibrugarh and Tinsukia district, Assam, India. For the structure study, the fishes collected were washed and preserved in 10% formalin solution. The structures of the jaws were opened by cutting the fish at all angles of mouth. The buccopharyngeal roof and floor was properly washed and then preserved in 70% alcohol and glycerine for stretching. Proper examination of the jaw, teeth, gills, gill rakers and all the structures associated with feeding was done.

Result

Mouth: Mouth was placed horizontal and terminal with a wide gap extending beyond posterior margin of eye and surrounded by strong papillated jaws. Upper jaw was shorter than lower jaw, while lower jaws appear protruding and not protractile. Multiple rows of pointed teeth could be seen on both the jaws. The mouth was seen to be guarded by lips.

Teeth: It was seen that various teeth were available in bunches in the bucco pharyngeal area. On the top of the buccal depression maxillary, palatine, vomerine and pharyngeal teeth were available. The maxillary teeth on the upper jaw were seen to be little sharp and were borne on the pre maxillaries. The foremost maxillary teeth were seen to be bigger than the back. Simply behind and corresponding to the upper jaw, the vomerine teeth were available in a little fix. It was found that the palatine teeth were found simply behind the maxillary teeth on the sense of taste. The foremost maxillary teeth reach out in a fix and were available simply behind the palatines. The palatine teeth were comparatively fit as a fiddle to the back maxillary teeth. The pharyngeal teeth were the biggest and most grounded on the top of the buccal hole .The lower jaw of C. bleheri had a solitary line of villiform teeth which broadens to frame 5 to 6 lines at the jaw symphysis. The horny cushion teeth were available on the internal side of the villiform teeth. Mandibular teeth were available on the lower jaw with 3 to 6 canines behind single line of villiform teeth. It was seen that the front mandibular teeth and the back mandibular teeth on the lower jaw were organized in lines. The front mandibulars were tiny as compared to the back mandibular teeth. It was seen that the horny cushion teeth were available on the lower jaw. There were two sets of horny cushions, the foremost horny cushion teeth and the back horny cushion teeth which fit as a fiddle to the vomerine teeth. The front horny cushion teeth were watched to be held up in a fix on the horny cushions. The lower pharyngeal teeth were missing in the back pharyngeal area.

Buccal cavity: The buccal cavity was broad and generous. Its roof was produced by the base of cranium and side dividers, and the floor of buccal cavity was shaped by the branchial curves. It was found that the smooth mucous film with an enormous mucous secreting cells line the dividers of buccal cavity.

Pharnyx: Pharynx was seen to be wide and capacious. It was observed that a couple of ovoid upper pharyngeal cushions were available on the top of the pharynx.

Tongue: Tongue was seen to be very much evolved and portable which was fixed firmly along the floor of the buccal cavity.

Oesophagus and stomach: The length