Osteology of Feeding Apparatus of *Rohtee Ogilbii*(Sykes,1839) From Nira River Bhor(Maharashtra)

Dr. Nirbhay Sudhir Pimpale[1]*; Anurag Dhirendra Shukla[2]; Pooja Vijay Kudale[3]

[1]*MES Abasheb Garware College Pune Email- nirbhay. pimpale@yahoo.com Cell. no-9850048745
[2] MES Abasheb Garware College Pune Email-anuragshukla011601@gmail.com
[3].MES Abasheb Garware College Pune Email- poojakudale2018@gmail.com

***Corresponding author:** Dr. Nirbhay Sudhir Pimpale
*MES Abasheb Garware College Pune Email- nirbhay. pimpale@yahoo.com Cell. no-9850048745

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Abstract:
There are large variations within the construction and working of the alimentary apparatus within various species, habitat, and ingesting habits of any organism. Fish feed is a major liable for their nourishment and development of the species, alteration inside the environmental Opportunité along with eutrophication as well as anthropogenic sports have an effect on fish species and additionally have an effect on food availability. To understand the digestive apparatus, morphological studies in the digestive tract of fish had been carried on *Rohtee ogilbi*i (Sykes, 1839). The alimentary canal is separated into the subsequent regions namely, the buccal hollow space (mouth) followed via the orobranchial hollow space which opens up into the esophagus. The esophagus opens up into the stomach which leads into the intestines and retained the anus. The gut suggests four folds coiled and related with mesenteries. In this study osteology of the buccal cavity of *Rohtee ogilbii* (Sykes, 1839) the mouth is terminal. The upper jaw, as well as the lower jaw, is devoid of teeth in both the fishes under study. The upper jaw shows an absence of teeth, palatine teeth were absent. The lower jaw shows strong dentary which is broader at the distal end while tapering towards the proximal end, it shows an absence of teeth. All gill arches imply the absence of denticles. Ceratobranchial V suggests the presence of a six oval-formed enamel plate positioned on the ventral side of the oropharyngeal hollow space.

Keywords: Osteology, upper jaw, palatine teeth, dentary, gill arche, enamel plate

Introduction:
The feeding behavior of fish is the foremost central feature affecting their nutrition and growth, changing environmental conditions such as eutrophication affects the fish species differently and also affects the availability of food types (Afrah, 2013).To understand the food intake mechanism, its digestion inside the stomach, and finally the absorption of food. The morphological studies on the mouth of fish are considered one of the most effective tools (Xiong et al. 2011; Germano et al. 2013; Løkka et al. 2013). As per the adaptation and availability of food and the feeding habits the digestive system of fishes shows marked morphological and functional diversity (Murray et al., 1996; Diaz et al. 2003). As compared with other vertebrates the gut in fishes is an elongated tube starting from the mouth followed by the esophagus stomach, intestine, and ending by the rectum, throughout the length the diameter of the gut varies. (Agarwal ,1996; Abaurrea-Equisoain et al., 1996; Albrecht et al., 2001; Boćina et al., 2017). In most fishes, the selection, seizing, and capturing the food and pushing it back into the esophagus is done by the oral and pre-oral cavities. (Rodrigues et al. 2006; Wilson &Castro2011).
There is a great diversity in the structural as well as in its function concerning the taxonomy, habitat, and feeding habits of the fish (Abdulhadi 2005). During evolution and as per the availability of food, fishes have incorporated their mechanism to find food and to sustain in their habitat, and in doing so this has led to morphological changes in the digestive system. (Dzhumaliyev, 1982; Fanta et. al., 2001; Souza Ma et. al., 2014). The main component of the digestive system includes the mouth, teeth, esophagus, stomach, intestine, and rectum along with the allied digestive glands (Anderson, 1986; Abaurrea-Equisoaín et al., 1996; Albrecht et al., 2001; Boćina et al., 2017). The diet-related structural adaptation that has been incorporated in the fishes in the course of evolution can be an important raw matter that would help to recognize the digestive physiology and evolutionary progression of the digestive tract in fishes (Dzhumaliyev, 1982; Fanta et al., 2003; Fagundes et al.,2007). Scientific information on the morphology framework of the digestive system of fish is significantly essential to recognize the feeding mechanism and physiology, and for the organization of fish species in fishery science (Barlow et al., 1984; Abaurrea-Equisoaín et al., 1996; Forny & Germano, 2014; Santos et al., 2015; Purushothaman et al., 2016). Morphological information about the fish helps in understanding the modification brought about in feeding habits and the physiology of the fish digestion process (Morrison & Wright 1999). As per the species, specific differences in the structural and anatomical organization are observed in the fishes. (Albrecht et al. 2001; Xiong et al. 2011; Wilson & Castro, 2011). The sound knowledge of feeding apparatus, and anatomy of fish's digestive

system is of epitome significance in understanding the fish's feeding habits and would benefit the fishery management program. (Abaurrea-Equisoain et al., 1996; Germano et al., 2014; Santos et al.,2015; Purshothaman et al., 2016).

The present work deals with the Study of Osteology in Rohtee ogilbii (Sykes, 1839) for the duration of the study period. The fish are commercially critical and are consumed by a massive populace inside the states of Tamil Nadu, Andhra Pradesh, and Maharashtra, it becomes vital to apprehend the food and feeding samples of the fish from business and fishery technological know-how components. The significance of the work would be attributed to the direction of making plans and executing diverse strategies as a way to acquire maximum yield.

Material and methods:

Samples of *Rohtee ogilbii* (Sykes, 1839) (n = 30 had been collected at Bhor from the near fish request 18 ° 08'56.9" N 73 ° 50'47.0" E Pune quarter Maharashtra, India. samples include a combined crowd of ladies and males with std length (96.95 ±3.15 mm), and weight (21.00 ±1.04 g). The fishing ways used by the fishers for harvesting the fish substantially covered the variable mesh-sized nets specifically cast and gill nets. The fishing gears had been laid late in the swash and were recaptured the posterior morning. samples accrued have been canned in 10 formalin and carried to the exploration center for fresh analysis. Osteology a study of *Rohtee ogilbii (*Sykes, 1839) was carried out to understand the relation between the layout of oral depression structure. Specimen (n = 2) was gutted and also stained doubly (C and S) following protocol (Potthoff etal., 1984). The photography of the entire fish and the buccal depression was carried out by using Canon DSLR-600D.

Results-and-discussion:

In the case of *Rohtee ogilbii* (Sykes, 1839) the mouth is terminal. The upper jaw, as well as the lower jaw, is devoid of teeth in both the fishes under study. The upper jaw shows an absence of teeth, palatine teeth were absent (Fig 2). The lower jaw in both the fish shows strong dentary which is broader at the distal end while tapering towards the proximal end, it shows an absence of teeth (Fig. 2). The oropharyngeal depression in both the fish was roughly triangular in shaped, it's made up of strainer gills and pharyngeal teeth outfit (Fig. 2). Gill chamber is made up of five- gill bends (Fig 2). The gill bends videlicet I, II, III, IV and V. All the gill bends are made up of two parts, videlicet frontal and rearward. All the gill bends show an absence of denticles. The ceratobranchial V shows the presence of six round- shaped tooth plates which are located on the frontal side of the oropharyngeal depression (Fig 2). In the case of Rohtee ogilbii (Sykes, 1839) the
arrangement of gill bends videlicet I, II, III, IV and V is the same they're made up of two parts videlicet frontal and rearward. While all the gill bends show absences of denticles. The ceratobranchial V shows the presence of six round-shaped tooth plates which are located on the frontal side of he oropharyngeal depression (Fig 2)

A muscular short esophagus begins at the end of orobranchial depression and enters the stomach. The stomach is present conterminous tobi-lobed liver. It's divided into three regions videlicet cardiac, fundic, and pyloric regions (Fig 1B). The cardiac stomach in *Rohtee ogilbii* (Sykes, 1839) is short which is a durability of the esophagus, where the fundic stomach is slightly larger forming a slightly bulge- suchlike structure. The pyloric region is a lower, slightly thrusting region that joins with the intestine through the pyloric sphincter. The intestine in the case of *Rohtee ogilbii* (Sykes,1839) is coiled up into 4 turns attached with mesentries . The entire structure resembles a bolus (Fig: 1B).

Fig:1 **B** The alimentary canal of *Rohtee ogilbii* (Sykes, 1839) from Nira River, Bhor, Maharashtra, India. A) The coiled intestine and the entire alimentary canal. B) The alimentary canal showing (oe) esophagus, (cs) cardiac stomach, (fs) fundus stomach, (ps) pyloric stomach, (ai) anterior intestine, (pi) posterior intestine, ® rectum.

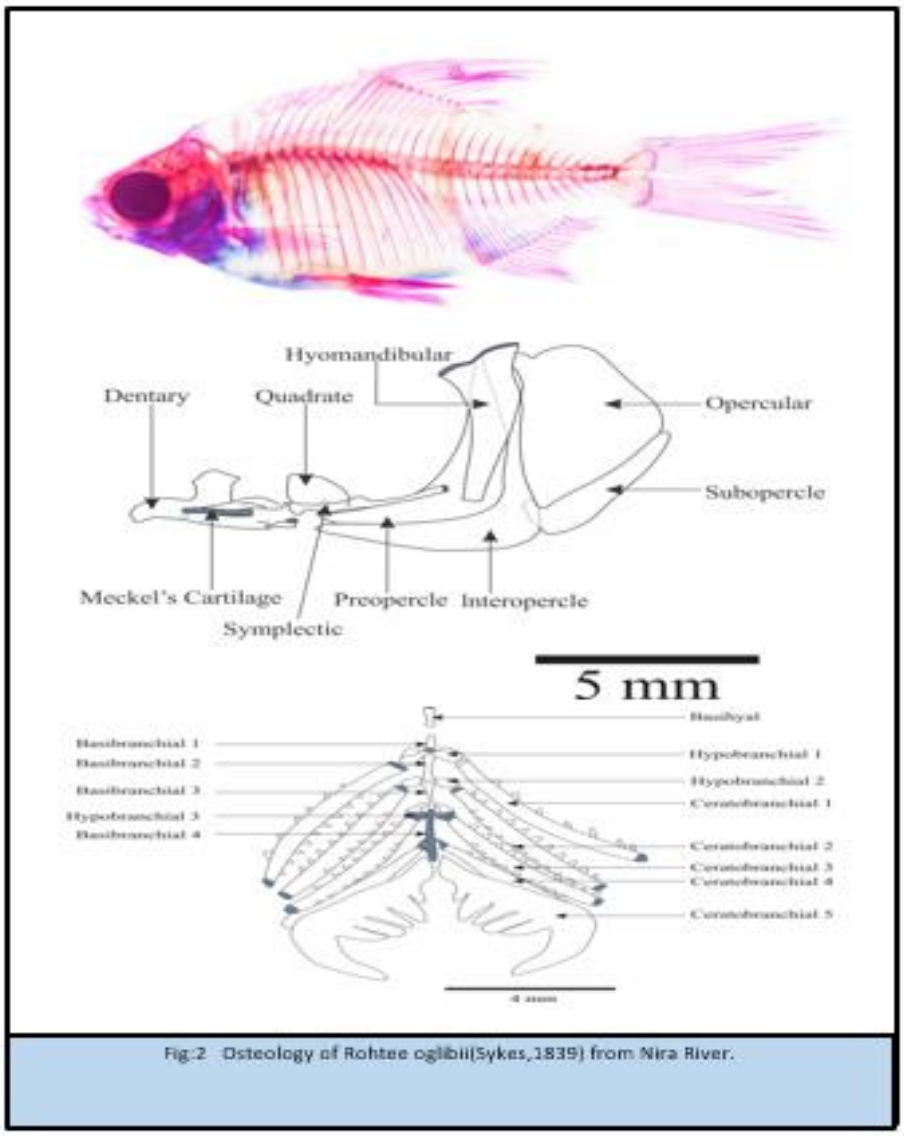

Fig:2 Osteology of Rohtee ogilbii(Sykes,1839) from Nira River.

In case of *Rohtee ogilbii* (Sykes,1839) there is absence of teeth on jaws as well as on the dentary. The gill rackers who are present act a sieve to hold on food component from the water. A sturdy affiliation exhibits between gill racker morphology and the status of the fish (Canan et al., 2012; Kumari et al., 2014). There is an association between number of gill rackers and the space between them and the feeding habit exhibited with the fish. In the present study both the fish shows presence of four gill arches which are provided with rackers which help in holding back the food component. The centrobranchial shows presence of 6 pharyngeal teeth which assist inbreaking down food ingested (Kumari et al., 2014; Dey et al., 2015; Gosavi et.,2018).

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