

# Morphological Comparison of Otolith of Two Species of Family Platycephalidae

Sana Baloch, Noor Us Saher

Centre of Excellence in Marine Biology, University of Karachi

\*E-mail: noorusaher@yahoo.com

## ABSTRACT

---

Flat head fish species belongs to Family Platycephalidae and morphological traits; an elongated body with a spiny sunken head and a huge mouth are used to identify them. The lower jaw is frequently longer than the upper. Other important features of these creatures include their otoliths. Otoliths, calcareous anatomical structures present in fish inner ears, have a species-specific shape that allows fish species and stocks to be identified from one another.

---

## INTRODUCTION

Tropical marine Scorpaeniformes fish, or flatheads, are members of the Platycephalidae family. Found in tropical Indo-West Pacific regions (Mastrototaro et al., 2007). About 17 genera and 70 recognized species make up the family, according to Imamura (1996) and Murty & Manikyam, (2007). Typically, flatheads are identified by their morphological characteristics, which include an elongated body with a spiny sunken head and a large mouth. Often, the lower jaw is longer than the upper one. Otoliths are among these animals' other key characteristics. Fish species and stocks can be distinguished from one another due to the species-specific shape of otoliths, which are calcareous anatomical structures found in the inner ears of fish. They constantly develop according to an accretionary process, and environmental and physiological factors influence the accretionary deposit (Yedier et al., 2018).

## OBJECTIVE

To determine the otolith variation and its role in the taxonomy of the two species of flat head fishes.

## MATERIALS AND METHODS

The sample of flat fish species were collected from different landing sites (Karachi Fish harbors, Korangi fish harbors and Sonmiani) along the coast of Pakistan. The collected fish species were brought to the laboratory, washed and sorted according to their genus and species. The taxonomic identification of the fishes was done with the help of recent FAO keys (1985) and then afterwards fishes were kept in tagged polythene bags in the freezer for further morphometric, and otolith analysis. With the use of a digital weighing balance, a vernier calliper, and a measuring scale, the morphometric analysis of the fish was completed.

## RESULT

There has been significant variation in the physical features of fish otoliths between the two species of *Platycephalus indica* and *Coeilla punctata*. For any of the otolith pairings, there was no discernible variation in the length of the left and right otoliths. The otoliths of the investigated species ranged in shape from triangular to ovate, and fusiform. For otolith study, 12 specimens of each species were studied. Using a common electronic balance, the weight (gm) and size (cm) of each individual and otolith were ascertained and a positive correlation was observed. The connections between fish size, otolith size, and body size were also studied.

## CONCLUSION

This research on fish family otoliths Platycephalidae used otolith morphometric traits to distinguish between different species. It's concluded that the Otolith size and weight correlated with the fish body size and weight. The current study can be useful in estimating the biomass of these less well-studied fish species in forecasting fish size based on otoliths.

## REFERENCES

1. Murty, V. Sriramachandra, and Y. Manikyam. Taxonomic revision of the flatheads (Platycephalidae: Pisces) of India. No. 259. Zoological Survey of India, 2007.
2. Imamura, Hisashi. "Phylogeny of the family Platycephalidae and related taxa (Pisces: Scorpaeniformes)." *Species Diversity* 1.2, 1996, 123-233.
3. Yedier, Serdar, et al. "Morphologic, morphometric and contour shape variations of sagittal otoliths of *Lepidorhombus* spp. in the Aegean Sea." *Anatomia, Histologia, Embryologia* 52.2, 2023, 279-288.
4. Mastrototaro, Francesco, et al. "First record of dwarf flathead *Elates ransonnetii* (Platycephalidae) in the Mediterranean Sea (North-western Ionian Sea)." *Cybium* 31.3, 2007, 393-394.