

Comparative Morphometry and Morphology of Two Species of Genus *Coceilla* (Family Platycephalidae) Found in Coastal Waters of Pakistan

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ABSTRACT

Flat-headed fish species belong to the Platycephalidae family, characterized by their distinctive physical traits, which encompass a large mouth and an elongated body featuring a spiny, recessed head. Among their various taxonomic features, the otoliths and pored scales of these species hold significant importance. The different species and stocks of flat-headed fish can be differentiated from each other due to the unique shapes of their otoliths, scales, and other anatomical structures present in these fish.

Keywords: Flathead Fish, Platycephalidae, Otolith, Morphometric.

INTRODUCTION

Flathead fish species belong to the Platycephalidae family. According to Teimori *et al.*, (2021); Jaafar *et al.*, (2025), there are approximately 17 genera and 70 recognized species within this family. Their elongated body, large mouth, and spiky, depressed head are distinctive characteristics that differentiate them. Often, the lower jaw is longer than the upper jaw. The unique shapes of otoliths, which are calcareous structures found in the inner ears of fish, facilitate the identification of various fish species and stocks. Due to its species-specific morphology, the otolith is regarded as a valuable taxonomic feature (Yedier *et al.*, 2023) in the teleost fishes.

OBJECTIVES

The aim of this research was to investigate the morphological and morphometric differences and their significance in the classification of these two species within the genus *Coceilla*.

MATERIALS AND METHODS

For this study, a collection of flat fish species was obtained from various landing sites along the coast of Pakistan, specifically from Sonmiani, Korangi, and the Karachi fish harbors.

Upon arrival at the laboratory, the collected fish species were cleaned and categorized according to their species and genus. The taxonomic identification of the fish was conducted using the latest (FAO keys 1985; Imamura *et al.*, 2015) and Fish Base. Subsequently, they were preserved in labelled polythene bags that are safe for freezing, intended for otolith and morphometric analysis. The morphometric analysis of the fish was carried out utilizing a measuring scale, a vernier caliper, and a computerized weighing balance.

RESULTS

The morphological traits of the scales, otoliths, and pored spines of the two fish species, *Coceilla crocodilus* and *Coceilla punctata*, have exhibited significant variation. Notably, there was no substantial difference in the lengths of the left and right otoliths across any of the pairings. The otoliths of the species under examination displayed fusiform, ovate, and triangular shapes. Additionally, the shape and margins of the pored scales varied between these two species. Considerable differences were also observed in the morphological characteristics

of the dorsal fin spines and rays. Furthermore, a positive correlation was identified between otolith size, fish size, and their body mass.

CONCLUSION

This research focuses on two species of *Coceilla* genus of the family Platycephalidae, utilizing pored scales and otolith morphometric characteristics to differentiate between species. The findings indicate that the number and structure of pored scales differ between adults and juveniles, as well as among various species. Additionally, the size and weight of otoliths are correlated with the body size and weight of the fish.

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