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Confirmed Record and Presence of Schedophilus Ovalis (Cuvier, 1833) in Libyan Waters

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Abstract
This study reports the first confirmed occurrence of the Imperial Blackfish, *Schedophilus ovalis* (Cuvier, 1833), in Libyan marine waters list. Although previously absent from comprehensive ichthyological inventories of the region, the presence of this species is herein substantiated through photographic evidence of a specimen captured off the Libyan coast and supported by a previously unverified entry in the FishBase database from 2017. This finding updates the known ichthyofauna of Libya and emphasizes the dynamic nature of marine biodiversity in the region. It further underscores the importance of continuous monitoring and verification efforts to enhance our understanding of species distribution and support effective marine conservation strategies.

Keywords: *Schedophilus ovalis*, Libya, Mediterranean Sea, Ichthyofauna, Biodiversity.

Introduction

Accurate and regularly updated checklists of marine fish species are fundamental tools for assessing biodiversity, monitoring ecological changes, and guiding sustainable marine resource management. These lists rely on verifiable records, including voucher specimens and visual documentation, to ensure the reliability of species identifications. Advances in taxonomy, molecular techniques, and increased observation efforts continue to drive revisions and updates to national and regional fish inventories. In the Mediterranean Sea, such inventories are crucial for distinguishing between native, alien, and economically significant species, thereby informing policy development in areas such as fisheries regulation, habitat protection, and biodiversity conservation [1-4].

Libya, with its extensive Mediterranean coastline, supports a diverse marine ichthyofauna shaped by both natural variability and anthropogenic pressures. Recent surveys have recorded over 300 species of bony fishes, including native taxa, Mediterranean endemics, Lessepsian migrants from the Red Sea, and Atlantic species expanding eastward via the Strait of Gibraltar. This diversity reflects the biogeographic complexity of the Libyan coast, which is typically categorized into eastern, central, and western zones, each hosting distinct ecological assemblages [5-9].

Ongoing field studies and findings continue to reveal new records and range extensions, suggesting that the current understanding of Libyan marine biodiversity remains incomplete. The present study documents the first verified record of *Schedophilus ovalis* in Libyan waters, a species not previously included in national checklists. This discovery highlights the importance of integrating photographic documentation and citizen science into biodiversity assessments. It also reinforces the need for continuous, evidence-based updating of ichthyological databases, particularly in light of mounting environmental challenges.

The objective of this work is to report the occurrence of *S. ovalis* and to contribute to the broader knowledge of fish species distribution in the southern Mediterranean.

Materials and Methods

A single specimen of *Schedophilus ovalis* (Figure 1) was collected in May 2025 by a local fisherman using a handheld speargun at an approximate depth of 20 meters. The capture site was located in the Bab Al-Zaytoun area near the city of Tobruk (32°05′N, 23°58′E). The specimen was submitted to the Department of Marine Resources for examination.

morphometric measurements were taken (Table. 1), Identification was confirmed by comparison with published diagnostic features and visual references.

Figure 1: *Schedophilus ovalis* collected from the coast of Libya

Table 1: Morphometric measurements of *Schedophilus ovalis* specimen collected from Libyan waters. All values are in centimeters (cm).

Measurement	Value (cm)
Total Length (TL)	39.7
Fork Length (FL)	37.4
Standard Length (SL)	33.5
Maximum Body Depth	14.8
Minimum Body Depth	13.3
Head Length (HL)	9.98
Eye Diameter	1.97
Preorbital Distance	2.4
Postorbital Distance	5.3
Interorbital Distance	3.73
Dorsal Fin Base Length	21.1

Results and Discussion

The specimen collected from the Bab Al-Zaytoun area, near Tobruk, represents the first confirmed record of this species in Libyan Mediterranean waters.The family Centrolophidae, commonly known as Black fi-

shes, Barrelfishes or Ruffs, includes worldwide 31 species in seven genera. Only four species in three genera are found in the Mediterranean [10]. *Schedophilus ovalis* distinguished from its co-familial species in the Mediterranean by having a single dorsal fin with 6-8 spines graduating with the rays of this fin and deep ovate body, 35-45% of Standard Length. Adult specimens inhabit deep water while young and subadult live in shallower water, often associated with floating objects. Feeds on small invertebrates. Its distribution includes the eastern Atlantic Ocean and the Mediterranean. The dorsal fin morphological measurements obtained (Table 1) correspond closely with the diagnostic features described in the literature for *S. ovalis*, thereby validating the species identification [11,12,13,14]. The total length (39.7 cm), fork length (37.4 cm), and standard length (33.5 cm) fall within the expected size range for juvenile to sub-adult individuals of this species.

Meristic counts and morphometric proportions, including the dorsal fin base length (21.1 cm) and anal fin base length (11.45 cm), are consistent with previously documented values for *Schedophilus ovalis*, reinforcing the reliability of this record. Notably, the maximum body depth (14.8 cm), which corresponds to approximately 44.1% of the standard length, and the head length (9.98 cm), approximately 30% of the standard length, align well with the species' typical morphology. The body coloration was generally uniform, ranging from dark green to grey or brownish, featuring indistinct vertical or, more commonly, horizontal irregular darker stripes; the eyes often exhibited a golden hue. These coloration characteristics are in agreement with descriptions reported for *S. ovalis* in the literature [15,12].

The confirmed presence of *S. ovalis* in Libyan waters extends the known geographic distribution of this species within the Mediterranean Sea and highlights the dynamic and evolving nature of marine biodiversity in the region. Given the species' absence from previous checklists of Libyan marine fishes, this finding underscores the critical importance of continuous field surveys and the incorporation of novel data sources, including citizen science contributions.

From an ecological perspective, the occurrence of *S. ovalis* may reflect broader biogeographic shifts influenced by environmental changes such as sea temperature fluctuations and habitat modifications [16]. This new record provides valuable baseline data essential for regional biodiversity assessments and may contribute to future conservation and management strategies. Further studies are recommended to assess the population status, ecological role, and potential threats facing *Schedophilus ovalis* within Libyan waters.

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