The first record of *Seriola fasciata* (Bloch, 1793) (Osteichthyes: Carangidae) in the Strait of Messina and its maintenance in conditions of captivity

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Abstract. Five specimens of *Seriola fasciata* were caught in the harbour of Messina and transported to the local aquarium. The finding of *S. fasciata* in the Strait of Messina highlights the fact that the species is trying to establish itself in a much wider distribution area of the Mediterranean basin.

Keywords: *Seriola fasciata*, first record, Strait of Messina, Pisces.

INTRODUCTION

This work aims to describe the first record of specimens of *Seriola fasciata* (Bloch, 1793) in the Strait of Messina, their capture and maintenance in an aquarium. *Seriola fasciata, lesser amberjacks* (Family: Carangidae), live at a depth of between 50 and 130 meters and can reach up to 67.5 cm of fork lenght (LF) and 4.6 kg of weight (Smith-Vaniz, 1986). It is commonly reported in the western Atlantic, from the Gulf of Mexico to Cuba and Bermuda. For the first time, it was recorded in the Mediterranean Sea by Masuttì and Stefanescu (Massutí & Stefanescu,1993) and in the Sicilian Strait by Andaloro et al. (Andaloro, 1997, 2005; Andaloro et al., 2005).

MATERIALS AND METHODS

Five specimens of *S. fasciata* were caught by the scientific staff of the Aquarium of Messina on September 12th 1999, using a landing net near floating docks outside a small tourist port, *Marina del Nettuno* (38° 11' 57.80" N - 15° 33' 32.95" E). This finding confirms the behavior of the species, as already reported by Andaloro et al (Andaloro et al., 2005) regarding the use of distance learning as a tool of capture. The specimens were located under the floating docks, near the tentacles of some jellyfish (*Cotylorhiza tuberculata*) Specimens. After the fish had been caught, they were transported to the aquarium and isolated in a seawater closed-circuit quarantine tank with a capacity of 200 liters (at constant temperature of 18° C, constant pH = 8, nitrites and nitrates absent). They measured 3.5 cm on average and their size made it difficult to classify them at first. After an acclimatation period of about 30 days, the animals were transferred to an open-circuit tank with a capacity of 350 liters (at constant temperature 15.5° C, constant pH = 8, nitrites and nitrates absent) for 90 days and subsequently, to an open-circuit exhibition tank with a capacity of about 3000 liters (at constant temperature of

15.5° C, constant pH = 8, nitrites and nitrates absent). For the first two months these small jack fish were fed frozen adult *Artemia salina* (brine shrimp) and subsequently finely chopped fresh seafood (anchovies and sardines). The specimens were gradually accustomed to a diet of shellfish (squid) and fish (sardines and anchovies).

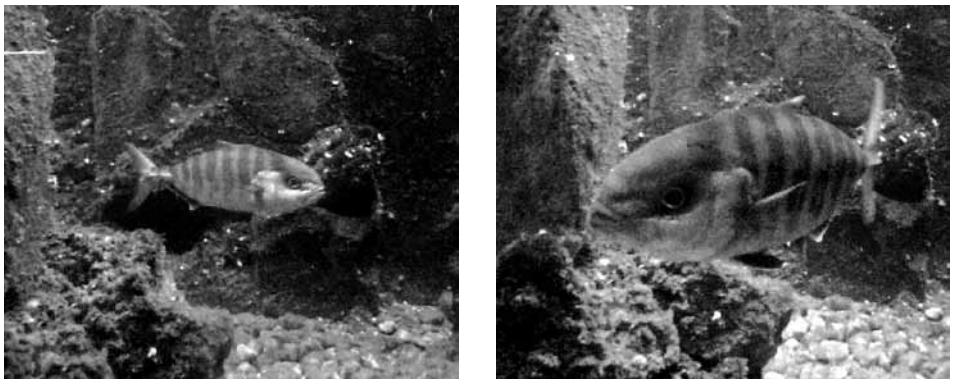
Two specimens died in March 2000 due to a fungal infection (*Saprolegnia sp.)*, while two other specimens died as a result of a infection, *Cryptocaryon irritans,* in April 2003. The fifth specimen died in May 2011 (Fig. 1, 2); it had been well-acclimatized and accustomed to captivity and its confined environment and had succeeded in living in perfect health for 11 years. On examination after its death, the main morphometric measurements in accordance with Smith-Vaniz WF 1986 (Tab. 1) were recorded in the fish.

RESULTS AND DISCUSSION

In literature, the presence of *Seriola fasciata* is considered sporadic in the Strait of Messina. Costa (1999) reports a specimen of 170 mm of total lenght (LT), caught by a purse seine in the Ionian Sea in 1993 and a specimen of LT of 145 mm in the southern Tyrrhenian Sea in 1994 (Costa, 1999). The Author attributes their presence to the recently-observed phenomenon of the tropicalization of the Mediterranean Sea (Andaloro & Rinaldi, 1998). The reasons for the discovery of *Seriola fasciata* in the Strait of Messina can probably be attributed to the fact that the species is trying to establish itself in a vast distribution area, given the evident lack of physical barriers that could prevent its dispersal towards the East Mediterranean Sea. This provides a further explanation of the effect of oceanographic and climatic changes in the Mediterranean Sea (Andaloro, 1997), by means of the interpretation of the behavior of new immigrant species.

CONCLUSIONS

The observation and study of species, newly-immigrated to the Mediterranean and specifically, to the Strait of Messina, can certainly make a contribution to the evaluation of the consequences of the phenomena of tropicalization of these waters and in particular, the effects of this phenomenon on native fish fauna.



Figg. 1-2 – The specimen of *Seriola fasciata*.

Tab. 1 – Morphometric and meristic data of the specimen captured in the Marina del Nettuno (Messina): SL (Standard Length) = from tip of the snout to the caudal peduncle; HL (Head length) = from tip of the snout to the edge of the operculum.

	mm	%
Total length	415	
Fork length	370	
Standard length	340	
Head length	136	40 SL
Eye diameter	24.4	17.9 HL
Preorbital distance	46	33.8 HL
Postorbital distance	58.8	43.2 HL
Interorbital distance	50	36.8 HL
Base of 1st dorsal fin	33.6	9.9 SL
Base of 2nd dorsal fin	155	45.6 SL
Base of anal fin	88.7	26.1 SL
Predorsal distance	131	38.5 SL
Prepectoral distance	127	37.4 SL
Preanal distance	240	70.6 SL
Prepelvic distance	120	35.3 SL
Pectoral length	60	17.6 SL
Pelvic length	47	13.8 SL
Body depth	127.1	37.4 SL
Fin ray		
- 1st dorsal	VIII	
- 2nd dorsal	I, 29	
- Pectoral	I, 19	
- Anal	II + I, 20	
- Pelvic	I, 5	
Gill rakers		
- Upper border	33	
- Lower border	64	
- Total	97	
Weight (g)	1608	

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RIASSUNTO

Prima segnalazione di *Seriola fasciata* (Bloch, 1793) (Osteichthyes: Carangidae) nello Stretto di Messina e mantenimento in condizioni di cattività

Cinque esemplari di *Seriola fasciata* (Bloch, 1793) sono stati catturati sotto le piattaforme galleggianti del porticciolo turistico di Messina e trasportati presso l'acquario comunale ed immessi in vasche espositive. Due esemplari sono deceduti dopo due anni a causa di sospette infezioni fungine e altri due sono deceduti dopo quattro anni dalla cattura a causa di sospet-

te infezioni parassitarie. L'ultimo esemplare ha vissuto in cattività per un periodo di 11 anni sostenendo bene la circoscrizione ambientale dovuta alla cattività. Il ritrovamento di *Seriola fasciata* nello Stretto di Messina mette in evidenza il fatto che la specie, giunta ormai in Mediterraneo, stia tentando di insediarsi in un areale molto più vasto, vista la evidente mancanza di barriere fisiche sul fronte orientale del bacino del Mediterraneo. Ciò denuncia un forte impatto sulla biodiversità del Mediterraneo per effetto dei cambiamenti climatici ed oceanografici sempre più evidenti. L'osservazione e lo studio di nuove specie oggetto dell'immigrazione in Mediterraneo, ed in particolare nello Stretto di Messina, può senz'altro fornire un contributo importante alla valutazione delle conseguenze dei fenomeni di tropicalizzazione e meridionalizzazione delle nostre acque ed in particolare sugli effetti di competizione e successione che questi esercitano sulla fauna ittica autoctona.

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