

# A new record of Bermuda sea chub, *Kyphosus saltatrix* (Linnaeus, 1758), (Osteichthyes, Kyphosidae) from Galite Islands (Tunisia, southern Mediterranean)

Nouvelle signalisation de la saupe brésilienne, *Kyphosus saltatrix*  
(Linnaeus, 1758), (Osteichthyes, Kyphosidae) dans les eaux de l'archipel  
de La Galite (Tunisie, Méditerranée méridionale)

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## Abstract

Lelong P. – A new record of Bermuda sea chub, *Kyphosus saltatrix* (Linnaeus, 1758), (Osteichthyes, Kyphosidae) from Galite Islands (Tunisia, southern Mediterranean). *Mar. Life*, 18: 3-7.

This note reports a new record of the Bermuda sea chub, *Kyphosus saltatrix*, from Tunisian waters.

In September 2010, four specimens were observed near the Galite Islands, northern Tunisia. Most of the previous records in the Mediterranean are of single specimens except for a number of individuals captured off Annaba (Algeria) in 2003. These records off Algerian and Tunisian coasts suggest the installation of a population unit in the south of the Mediterranean.

### KEY-WORDS :

*Kyphosus saltatrix*, Kyphosidae, new record, Galite Islands, Tunisia, Mediterranean.

## Résumé

Lelong P. – [Nouvelle signalisation de la saupe brésilienne, *Kyphosus saltatrix* (Linnaeus, 1758), (Osteichthyes, Kyphosidae) dans les eaux de l'archipel de La Galite (Tunisie, Méditerranée méridionale).] *Mar. Life*, 18: 3-7.

Cette note signale une nouvelle observation de la saupe brésilienne, *Kyphosus saltatrix*, dans les eaux tunisiennes.

Quatre individus ont été observés près de l'archipel de La Galite situé au nord de la Tunisie en septembre 2010. La plupart des signalements précédents de cette espèce en Méditerranée font état d'individus isolés à l'exception d'un groupe d'individus pêchés à Annaba (Algérie) en 2003. La présence de plusieurs individus sur les côtes algériennes et tunisiennes suggère l'installation d'une population dans le sud de la Méditerranée.

### MOTS CLÉS :

*Kyphosus saltatrix*, Kyphosidae, nouvelle signalisation, archipel de La Galite, Tunisie, Méditerranée.

Sea chubs (Kyphosidae) are tropical and subtropical fish and two species of this family live in the Atlantic, both on the eastern and western coasts, *Kyphosus incisor* (Cuvier, 1831) and *K. saltatrix* (Linnaeus, 1758). The former species was recently recorded in the Mediterranean (Orsi Relini *et al.*, 2010).

According to Eschmeyer (2010) and Froese, Pauly (2010), *K. saltatrix* must be considered as the valid name of *K. sectator* or *K. sectatrix*, often used in recent publications dealing with this species.

*Kyphosus saltatrix* inhabits shallow waters in the adult phase between surface and 30 m depth, on sandy, rocky or grassy bottoms and around coral reefs (Sgano, 1978). Juveniles and young are associated with floating algae and flotsam (Froese, Pauly, 2010); they have often been observed following ships and waiting for the dumping of garbage, so they are also called “rudder” fish. This species feeds primarily on benthic macroalgae, it can be considered as “truly herbivore” (Silvano, Güth, 2006), but also on invertebrates, especially during the juvenile stage in epipelagic waters (Merella *et al.*, 1998).

*K. saltatrix* is relatively common in the western Atlantic, from Massachusetts to south-eastern Brazil, including the Gulf of Mexico and the Caribbean Sea (Sgano, 1978).

In the eastern Atlantic this species seems to be relatively rare along the African coast from Morocco to the Gulf of Guinea (Collignon, 1971; Sgano, 1981) and more frequent around the islands, Canary (Brito, Sancho, 2003), Madeira (Wirtz *et al.*, 2008) and the Açores (Santos *et al.*, 1997). Further north, single records have recently been reported on the Algarve coast, southern Portugal (Canas *et al.*, 2005), in Galicia, north west Spain (Bañón, 2004) and in the Gulf of Gascogne in France: St Jean de Luz (Quéro *et al.*, 2009), Arcachon (Laborde in Quéro *et al.*, 2009) and the Glénan Islands (Iglésias, 2011).

In the Mediterranean, Desoutter (1973) and Tortonese (1986), reported three ancient captures of single specimens off the coasts of Italy: Trieste in 1847 (Oljan, 1963), Palermo in 1883 (Döderlein, 1883) and Genova in 1903 (Ariola, 1904).

The other records are more recent, most concern single specimens: in 1996 off Mallorca Island (Merella *et al.*, 1998), in 2005 off Salakta, east Tunisia (Hattour, 2006), in 2006 off Saint Tropez, south east France (Francour, Mouine, 2008), in 2009, near Livorno, eastern Ligurian Sea (Ligas *et al.*, 2011) and in 2011, in the Ionian Sea (Kiparissis *et al.*, 2012). The only record of capture of several individuals was made in 2003 on the Algerian coast (Hemida *et al.*, 2004).

In September 2010, several Bermuda sea chub were observed in Galite Islands.

Since 2006, the French Coastal Protection Agency (Conservatoire du Littoral) coordinates an international program for the promotion and assistance in the management of the small islands of the Mediterranean Sea, named Mediterranean Small Islands Initiative PIM. In this framework, a mission of fish counting using underwater visual census techniques by means of scuba diving or snorkelling was organised in September 2010 around the Galite archipelago (Bonhomme *et al.*, 2010).

The Galite Islands are a rocky group of islands off northern Tunisia, located 38 km northwest of Cape Serrat. It is a National Park and no fishing is permitted in the marine area 1.5 miles around the islands (**Figure 1**).

In 24 September 2010, 3 specimens of *Kyphosus saltatrix* were observed and photographed (**Figure 2**) beside the pier at the port situated on the south coast of the main island of La Galite (37° 31' 24" N – 08° 56' 11" E) and another one outside the port (Harmelin, personal communication). All of them were 20-25 cm long, the 3 inside the port were swimming together, with some *Seriola dumerilii* of the same size, between the rocks of the pier and a sandy bottom, 3-4 m depth, covered by patches of *Cymodocea nodosa* and *Posidonia oceanica*.

It is a new record for Tunisian waters. A single specimen was fished in 2005 near Salakta, on the east coast of Tunisia, in the eastern Mediterranean basin (Hattour, 2006). This species was not reported during the preceding missions of fish counting around the Galite archipelago in 1997, 1999 and 2008.

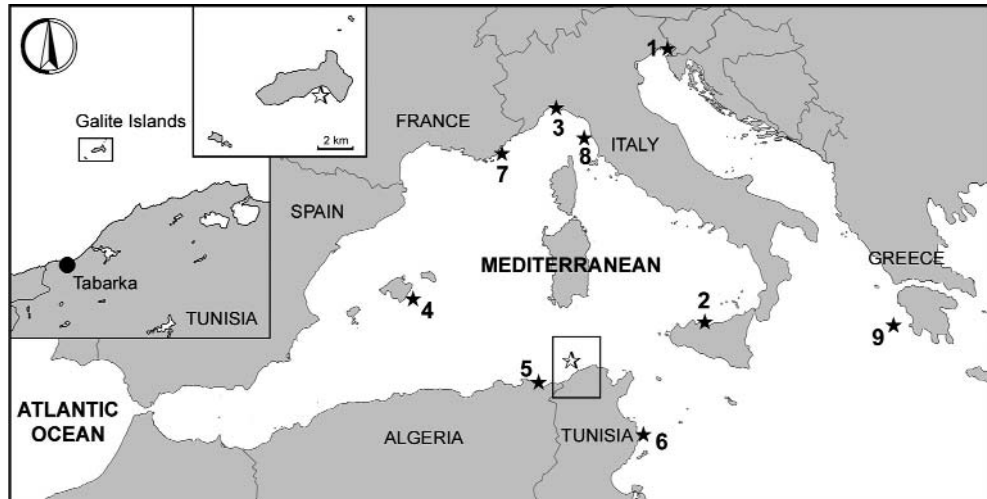
Probably due to “Global Change”, the seawater of the Mediterranean has been warming since at least the 1970s. Rising temperatures alter the distribution patterns of biodiversity by favoring the warm water species that are more and more frequently recorded in northern sectors on the European continental shelf and in the Mediterranean (Francour *et al.*, 1994; Banon 2004; Canas *et al.*, 2005; Bianchi, 2007; Coll *et al.*, 2010). This phenomenon occurs both with native Atlantic or Mediterranean species (“meridionalization”), and with non-indigenous species that have recently entered the Mediterranean (“tropicalization”) (Bianchi, Morri, 1993; Azzurro, 2008).

The number of exotic, also called alien, non-native, non-indigenous or allochthonous, fish species recorded in the Mediterranean is increasing steadily: 92 in 2002 and 116 in 2009 in the CIESM Atlas (Golani *et al.* 2002, 2009), 127 in 2009 (Ben Rais Lasram, Mouillot, 2009) and 160 in 2010 (Oral, 2010). In Oral's review (2010), 3 species originated in the Boreal Atlantic, 4 in the Pacific Ocean,

**Figure 1**

Geographical location of the former records of *Kyphosus saltatrix* in the Mediterranean (★) and the present record the Galite Islands (☆).

Localisation géographique des anciens signalements de *Kyphosus saltatrix* en Méditerranée (★) et du signalement présent dans l'archipel de La Galite (☆).



1: Trieste (Italy), 1847; 2: Palermo (Italy), 1883; 3: Genova (Italy), 1903; 4: Mallorca (Spain), 1996; 5: Annaba (Algeria), 2003; 6: Salakta (Tunisia), 2005; 7: Saint Tropez (France), 2006; 8: Livorno (Italy), 2009; 9: Strofades Islands (Greece), 2011.

86 came from the Red Sea through the Suez Canal (Lessepsian migration) and 67 from the Atlantic Ocean via the Gibraltar Strait. However, these authors do not consider *Kyphosus saltatrix* as an exotic species because of three old Italian records, dating back more than one century. According to Merella *et al.*, 1998, Francour, Mouine, 2008, Orsi-Relini *et al.*, 2010 and Occhipinti-Ambrogi *et al.*, 2011, this species must be considered as an alien or a “neocolonizer” (Quignard, Tomasini, 2000).

Native to the Atlantic, *Kyphosus saltatrix* was recorded as having an earlier period of migration in the Mediterranean with only three captures of single specimens probably connected to its “rudder” fish’s character and another more recent one, since 1996, with numerous sporadic but increasingly frequent captures of single specimens in northerly waters both in the Atlantic and in the Mediterranean.

The last records of several individuals at Annaba (Hemida *et al.*, 2004) and La Galite (this work) confirm the spread of this species along the North-African coast. This extension of distribution could be attributed to ocean warming and/or related to a possible greater incoming flux of Atlantic water entering the Gibraltar Strait.

We wish to thank Dr Nicolas Bailly for providing pertinent information on the recent taxonomy of this *Kyphosus*.



**Figure 2**

*Kyphosus saltatrix* in the Galite Islands.  
*Kyphosus saltatrix* dans l'archipel de La Galite.

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