

NEW OCCURRENCE AND NEW RECORDS OF FISH SPECIES OF TUNISIAN COASTS

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ملخص

تسجيل ظهور أنواع جديدة من الأسماك بالمياه التونسية : مكنتنا متابعة الأسماك المنزلة في خليج الحمامات بين سنتي 2013 و 2017 من تسجيل ستة أنواع جديدة من الأسماك في المنطقة. خمسة أنواع منها وقع ملاحظتها في المصائد التقليدية بطبلبة من بينها نوعان يسجل وجودهما في المياه التونسية للمرة الأولى وهما *Upeneus moluccensis* (Bleeker, 1855) (عائلة Mullidae) وهو نوع دخيل و *Alectis alexandrinus* (Geoffroy Saint-Hilaire, 1817) (عائلة Carangidae). كما تجدر الإشارة إلى وجود نوعان من عائلة Sparidae لم يقع مشاهدتهما في البلاد التونسية على الأقل منذ ثلاثة عقود وهما على التوالي: *Diplodus cervinus cervinus* (Lowe, 1838) و *Pagellus bogaraveo* (Brünnich, 1768). خلال هذه الدراسة وقع اكتشاف سمكة *Sargocentron rubrum* (Forskäl, 1775) (عائلة Holocentridae) للمرة الثانية في السواحل التونسية. كما تم تنزيل نوع من الأسماك الغضروفية في ميناء المهدية 1835 *Torpedo nobiliana* Bonaparte, لم يشاهد منذ الثمانينات. الكلمات المفتاحية: الثروة السمكية، أنواع جديدة، أسماك غازية، تسجيلات جديدة، تونس

RESUME

Nouvelle occurrence et signalisation d'espèces de poissons au large des côtes tunisiennes : Des investigations menées dans le golfe de Hammamet (Tunisie centrale) entre 2013 et 2017, ont révélé la signalisation de six nouvelles espèces de poissons non signalées dans la zone. Cinq espèces sont observées dans les débarquements de la pêche artisanale de Teboulba dont deux sont mentionnées pour la première fois en Tunisie : le barbet à bande dorée *Upeneus moluccensis* (Bleeker, 1855), espèce non indigène de la famille des Mullidae et le cordonnier bossu *Alectis alexandrinus* (Geoffroy Saint-Hilaire, 1817) (Carangidae). Deux autres espèces rares non observées au cours des trois dernières décennies en Tunisie sont notées : la dorade marine Zebra *Diplodus cervinus cervinus* (Lowe, 1838) (Sparidae) et la daurade rose *Pagellus bogaraveo* (Brünnich, 1768) (Sparidae). Le poisson écureuil manteau rouge *Sargocentron rubrum* (Forskäl, 1775) (Holocentridae) est observé pour la deuxième fois sur les côtes tunisiennes.

Un poisson cartilagineux a été débarqué dans le port de Mahdia : la torpille noire, *Torpedo nobiliana* Bonaparte, 1835 non observée depuis les années 80.

Mots clés : Faune ichtyologique, nouvelles signalisations, espèces exotiques, récentes occurrences, Tunisie

ABSTRACT

Investigations conducted in the Gulf of Hammamet (Central Tunisia) between 2013 and 2017, revealed the sighting of six new species of fish not reported in the area. Five species are observed in the landings of the Teboulba artisanal fishery. Among them, two are mentioned for the first time in Tunisia: The goatfish *Upeneus moluccensis* (Bleeker, 1855), a non-native species of the Mullidae family and the Alexandria pompano *Alectis alexandrinus* (Geoffroy Saint-Hilaire, 1817) (Carangidae). Two other rare species not observed during the last three decades in Tunisia are noted: The zebra seabream *Diplodus cervinus cervinus* (Lowe, 1838) (Sparidae) and the Red Seabream *Pagellus bogaraveo* (Brünnich, 1768) (Sparidae). The squirrelfish *Sargocentron rubrum* (Forskäl, 1775) (Holocentridae) is an exotic species detected in Tunisian water for the second time during this study.

A cartilaginous fish was landed in the port of Mahdia: The Atlantic torpedo, *Torpedo nobiliana* Bonaparte, 1835, not observed since 80's.

Key words: Ichthyologic fauna; new records; alien species; new occurrence; Tunisia

INTRODUCTION

This work, focusing on fish fauna in the center of Tunisia (Gulf of Hammamet) poorly documented, updates partly the Tunisian fish species inventory (Bradai et al., 2004; Bradai, 2010). In fact, records of fish species in the center of Tunisia, between Kelibia and Ras Kappudia (Fig. 1), were relatively scarce

(Bradai et al., 2004 ; Ounifi-Ben Amor et al. 2016). Moreover, the monitoring and recording of biodiversity is highlighted in this article since new records for the Tunisian fish fauna were registered and knowledge on new distribution points and range expansion of two non-indigenous species is reported, phenomenon currently ongoing in the Mediterranean Sea and in Tunisia; 19 % of alien marine fauna in

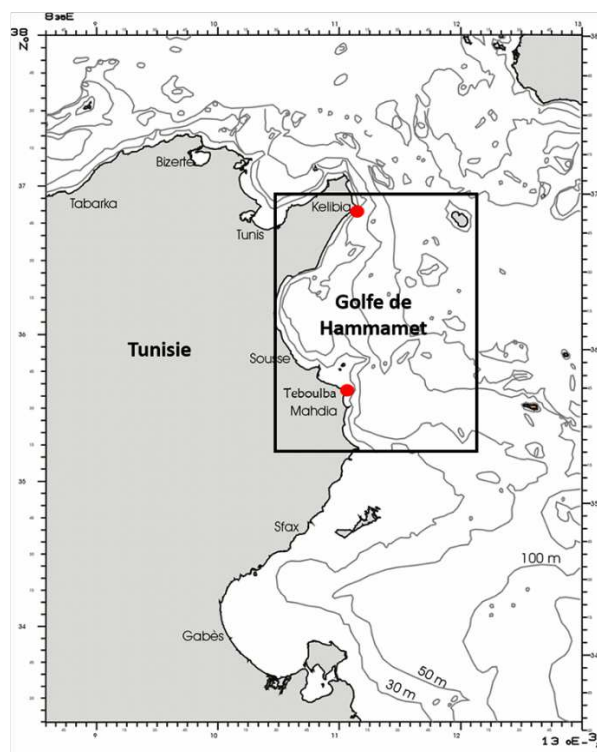


Figure 1: Study area

Tunisian water are fishes (Ounifi-Ben Amor *et al.*, 2016). The observation of *Torpedo nobiliana* in Mahdia harbor (center of Tunisia) was also reported. Cartilaginous fish should be well monitored since the status of this taxon is worrying; 54% are vulnerable and endangered to critically endangered, (Dulvy *et al.*, 2016).

MATERIAL & METHODS

Some visits of the Teboulba harbor (central coasts), showed us a high fish diversity. In the aim to register some interesting fish sighting, we increase frequency of our visits and we convened with a fishmonger in this harbor, connoisseur on fish, to report us by photos information on new, rare or particular fish species.

During 2013 to 2015 and on this basis, we register two new records and three rare species no recorded before in the Centre of Tunisia (Bradai, 2010; Bradai *et al.*, 2004) and not signaled in recent bibliography. An additional record of a new non indigenous species recently recorded in Northern coast was also provided during this study.

We retain for this preliminary work, which will be improved to include some body measures and information on fishing gears and fishing areas, only species observed or well identified in photos without any doubt.

RESULT& DISCUSSION

The fish species observed in the landings of Teboulba small-scales fisheries are:

***Upeneus moluccensis*(Bleeker,1855)** (Fig.2)

The goatfish *Upeneus moluccensis* (Mullidae Family) characterized from other Mullidae by its color: a red back; a white belly; a distinct single longitudinal yellow stripe running from eye to caudal fin base on the two sides. Only the upper caudal fin lob striped. The species has a native distribution in the Indian-Pacific, Red Sea. It invades the Mediterranean from the Red Sea via the Suez Canal and extends its distribution from the eastern Aegean Sea to Libya. In March 2015, more than one hundred specimens were observed in the landings of Teboulba small-scale fishery. *U. moluccensis* is in fact a demersal schooling species. It is the first record of the species in Tunisia.

***Alectis alexandrinus* (Geoffroy Saint-Hilaire, 1817)** (Fig. 3)

The body of Alexandria pompano *Alectis alexandrinus* (Carangidae Family) is extremely compressed and deep. Pelvic fins relatively long; anterior soft rays of dorsal and anal fins filamentous in young. *Alexandria pompano* occurs in the southern parts of Mediterranean and eastern Atlantic off Morocco. Elsewhere, African coasts southward to Angola. In Tunisia, the species was caught for the first time off Teboulba coasts in March 2013. It was 40 cm TL.



Figure 2 : *Upeneus moluccensis*. 1 : yellow stripe; 2: upper caudal fin lob striped

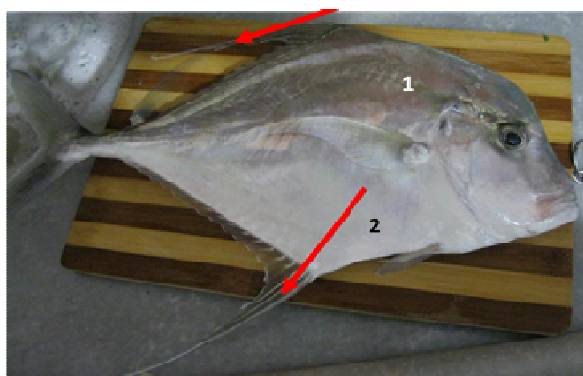


Figure 3 : *Alectis alexandrines*. 1 et 2: anterior soft rays of dorsal and anal fins filamentous in young

***Sargocentron rubrum* (Forskål, 1775) (Fig. 4)**

The body of the squirrelfish, *Sargocentron rubrum* (Holocentridae family) with alternating longitudinal red and whitish yellow stripes of about the same width distinguishes the species from all other Mediterranean species.

It has a native distribution in the Indo-West Pacific, Red Sea. In March 2013, one specimen 20 cm TL was caught in trammel net. It is the first record of the species in this area. The squirrelfish was observed only once in Northern Tunisia. Ounifi-Ben Amor et al. (2016) cited the species in Zembra island in 2013.

***Diplodus cervinus cervinus* (Lowe, 1838) (Fig. 5)**

The species is mainly characterized by the presence

of five broad dark brown bars on the flank and the thick lips. The zebra seabream *Diplodus cervinus cervinus* (Lowe, 1838) is rarely reported or is absent from fish surveys. Information on its biology and ecology are scattered. In Mediterranean Sea and precisely in Algerian waters, only Derbal and Kara (2006 and 2010) became interested respectively in diet and reproduction. In Tunisia, the species was recorded only one time in the Gulf of Gabès in 1971 (Ktari-Chakroun et Azouz, 1971). In this work, we signalize the species the second time in Tunisia precisely, in Tébourba where three specimens were landed respectively in June 2014, July 2016 and August 2017.

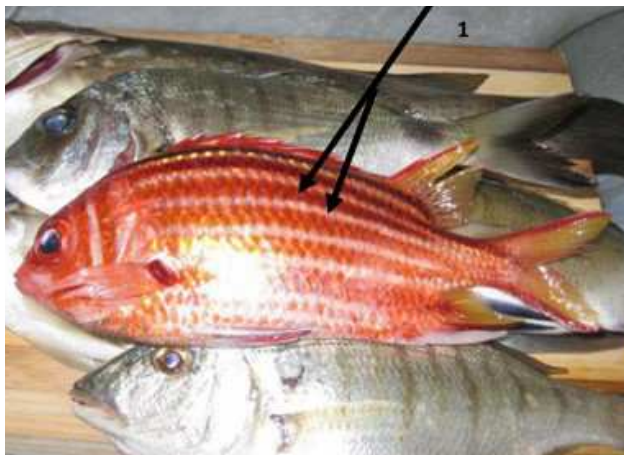


Figure 4 :*Sargocentron rubrum*. 1: Longitudinal red and whitish yellow stripes



Figure 5: *Diplodus cervinus cervinus*. 1 : dark brown bars; 2: thick lips.

***Pagellus bogaraveo* (Brünnich, 1768) (Fig. 6)**

The Blackspot Seabream or Red Seabream *Pagellus bogaraveo* (Brünnich, 1768) (Sparidae Family) is grey, more or less reddish, a large dark spot at origin of lateral line. The snout is shorter than the eye diameter. It is an Atlanto-Mediterranean species, reported only in the North coast of Tunisia

(Bourgeois & Farina, 1961; Ben Mustapha, 1966; Lubet & Azouz, 1969; Azouz, 1971 et 1974; Ghorbel, 1981, 1996; Bradai, 2010 and Bradai et al., 2004). Many specimens were landed the last three years in the Centre of Tunisia mainly in winter, all observed specimens present the dark spot.



Figure 6: *Pagellus bogaraveo*. 1: A large dark spot at origin of lateral line, 2 :Big diameter eyes

***Torpedo nobiliana* Bonaparte, 1835 (Fig. 7)**

The Atlantic torpedo, *Torpedo nobiliana* Bonaparte, 1835 (Torpedinidae Family) is characterized by a dorsal dark plain coloration. The underside face is white, with dark fin margins. Spiracles, are smooth without papillae on their inner rims.

According our observation and on basis of ichthyologic literature a decline of captures of *T. nobiliana* has been reported during the last decades. The last specimen was captured off the northern coasts of Tunisia in 1980. Moreover, information

provided by fishermen confirmed this phenomenon. Recently, in 22 July 2016, five specimens measuring 44 to 62 cm TL were landed in Mahdia harbor, in the center of the country.

This work (1) improve knowledge on the Tunisian fish fauna and mainly in the center of Tunisia where it is little documented (2) contribute to the monitoring of non-indigenous species extending in Tunisian waters and (3) improve knowledge on the status of a rare ray species.



Figure 7: *Torpedo nobiliana*. 1 : Spiracles without papillae

CONCLUSION

Little is known about the fish biodiversity in the Gulf of Hammamet compared to the south and north parts of Tunisia. Monitoring of landings in this area is necessary to improve knowledge of the fish fauna of the area and to monitor the expansion of the non-indigenous species in Tunisian coast.

This study revealed the sighting of six new species of fish not reported in the area representing a witness of the importance of the Gulf of Hammamet and an invitation to more studied the ichthyologic biodiversity of area.

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