

John Dory, *Zeus faber* Linnaeus, 1758 (family: Zeidae) on the Arabian Sea coasts of Oman

Le Saint-Pierre, *Zeus faber* Linnaeus,
1758 (famille des Zeidae)
sur les côtes d'Oman (Mer d'Arabie)

Laith Jawad^{1*}, Juma Al-Mamry¹, Saeed Al-Shogeabi²

1. Marine Science and Fisheries Centre,
Ministry of Fisheries Wealth, P. O. Box 427, code 100 Muscat, Sultanate of Oman

2. Ministry of Fisheries Wealth, Salalah Office, Oman

* Corresponding author: laith_jawad@hotmail.com

Abstract

Jawad L., J. Al-Mamry, S. Al-Shogeabi – John Dory, *Zeus faber* Linnaeus, 1758 (family: Zeidae) on the Arabian Sea coasts of Oman. *Mar. Life*, 17: 67-70.

The John Dory *Zeus faber* Linnaeus, 1758 (family: Zeidae) has been recorded for the first time in the north Arabian Sea near the Omani coast. This record indicates a considerable range extension of the previously known distribution of the species.

KEY WORDS:

Zeus faber, Zeidae, geographical distribution, Arabian Sea.

Résumé

Jawad L., J. Al-Mamry, S. Al-Shogeabi – [Le Saint-Pierre, *Zeus faber* Linnaeus, 1758 (famille des Zeidae) sur les côtes d'Oman (Mer d'Arabie)]. *Mar. Life*, 17: 67-70.

Le Saint-Pierre, *Zeus faber* Linnaeus, 1758 (famille des Zeidae) est signalé pour la première fois au nord de la Mer d'Arabie, près des côtes d'Oman. Cette signalisation constitue une extension de la distribution connue de l'espèce.

MOTS CLÉS :

Zeus faber, Zeidae, distribution géographique, Mer d'Arabie.

The phylogeny of the genera and families of Zeiform fishes has been extensively reviewed by Tyler *et al.* (2003). At the present time, six families of Zeiformes are recognized: Cyttidae, Parazenidae, Zenionidae, Grammi-colepididae, Oreosomatidae and Zeidae, with a total of 32-33 species (Nelson, 2006; Eschmeyer, Fong, 2011; Froese, Pauly, 2011).

Quoting from Santini *et al.* (2006) and Froese, Pauly (2011), the family Zeidae is composed of six species included into two genera: the genus *Zeus* Linnaeus, 1758 and the genus *Zenopsis* Gill, 1863. The genus *Zeus* includes two species, *Zeus faber* Linnaeus, 1758 and *Zeus capensis* Valenciennes, 1835, while the genus *Zenopsis* numbers four species: *Zenopsis nebulosus* (Schlegel, 1847), *Zenopsis conchifer* (Lowe, 1852), *Zenopsis oblongus* Parin, 1989 and *Zenopsis stabilispinosa* Nakabo, Bray and Yamada, 2006.

To date, in the Arabian Sea, Omani coasts included, only one species of the family Zeidae, *Zenopsis conchifer*, is known, while another zeiform occurs, *Cyttopsis rosea* (Lowe, 1843) (Parazenidae) (Fischer, Bianchi, 1984; Manilo, Bogorodsky, 2003).

In this work, the occurrence in Omani waters of a second member of the family Zeidae, the John Dory *Zeus faber*, is reported for the first time.

Zeus faber is an edible species, generally solitary, found close to the bottom at depths from 5 to 400 m (Quéro, 1986; Vrgo *et al.*, 2006). It has a worldwide distribution, which embraces the eastern Atlantic from Norway to South Africa, the western Pacific in southern Japan, Korea, Australia, New Zealand, East and South China seas, the Indian Ocean, the whole of the Mediterranean Sea and the Black Sea (Fischer, Bianchi, 1984; Quéro, 1986; Bauchot, 1987; Yoneda *et al.*, 2002; Froese, Pauly, 2011). The species is not listed among the Red Sea ichthyofauna (Golani, Bogorodsky, 2010).

In August 2008 one specimen of *Z. faber* (350 mm in total length, 402 g in weight) was collected from bottom trawl catch (depth 350 m, sandy-rocky substrate) during a survey conducted between latitudes 17° 28.86' N and 21° 54.85' N and longitudes 55° 17.14' E and 59° 45.82' E in the Arabian Sea coasts of Oman by the RV «Al-Mustaqila» (**Figure 1**). In May 2009, a second specimen (348 mm in total length, 398 g in weight) was obtained from Salalah fish market at the Omani coasts of the Arabian Sea (fishing boats operate offshore of the City Salalah whose fish market is the largest in the southern coasts of Oman). The specimens of *Z. faber* were identified following Quéro *et al.* (1981) and Quéro (1986) (**Figure 2**). Measurements were carried out to the nearest 0.1 mm by a caliper, and meristic counts were made

under the reflected light of a stereomicroscope. The morphometric measurements and meristic counts were performed according to Fischer, Bianchi (1981) and Smith, Heemstra (1986). Results in comparison with other publications (Eryilmaz, 2001; Ben Souissi *et al.*, 2004) are given in **Table I**. Samples are deposited in the fish collection of the Marine Science and Fisheries Centre, Ministry of Agriculture and Fisheries Wealth, Muscat, Sultanate of Oman; catalogue numbers: OMMSTC 1079 and 1080, respectively.

The meristic data, the body shape and the coloration agree with Quéro (1986), Bauchot (1987), Eryilmaz (2001) and Froese, Pauly (2011). The meristic data differs slightly from that of Ben Souissi *et al.* (2004) probably because of the limited number of specimens measured.

The size of the two specimens of *Z. faber* obtained in the present study (348-350 mm in total length) lies within the common range from 100 to 500 mm reported worldwide (Quéro *et al.*, 1981; Fischer, Bianchi, 1984; Bauchot, 1987; Moutopoulos, Stergiou, 2002; Yoneda *et al.*, 2002; Morey *et al.*, 2003; Vrgo *et al.*, 2006; Froese, Pauly, 2011).

From the distribution mentioned above and taking into account that the presence of *Z. faber* was never recorded before in the literature concerning the fish fauna of the Omani coasts of the Arabian Sea (White, Barwani, 1971; Randall, 1994, 1995; Al-Abdessalaam, 1995), the first documentation of its occurrence in the study area indicates a significant range extension of its previously known distribution.

It is premature to assess whether the present population is represented only by a few visitors exploring the new area or whether it is a well-established population hitherto undetected, probably due to a lack of ichthyological expeditions and fishery surveys.

Thus, there is a need to investigate further the frequency of occurrence and to study the biological characteristics of this species in order to determine whether it has established a sustainable population in its new region.

Figure 1
 Sampling location
 of *Zeus faber*.

Localisation
 des signalements
 de *Zeus faber*.



Figure 2
 A freshly caught specimen
 of *Zeus faber* from Oman
 (total length 350 mm)
 (OMMSFC 1079).

Un spécimen de *Zeus faber*
 fraîchement pêché sur les
 côtes d'Oman (longueur
 totale 350 mm) (OMMSFC
 1079).



Table I
 Morphometric measures
 and meristic characters of
 the two specimens of *Zeus*
faber from Oman.
 Mesures morphométriques
 et caractères meristiques
 des deux spécimens de
Zeus faber d'Oman.

	Present study 2 specimens		Ben Souissi <i>et al.</i> (2004) 1 specimen		Eryilmaz (2001) 2 specimens
	mm	%	mm	%	mm
Morphometric characters					
Total length LT	348-350		300	-	
Standard length LS	280-284	81-80 L _T	224	74.7 L _T	95-260
Head length LH	110-112	32-39.2 L _S	95	42.4 L _S	-
Interorbital distance	14-15	12.7-13.4 L _H	12	12.6 L _H	-
Preorbital length	58-60	52.7-54 L _H	40	42.1 L _H	-
Postorbital length	39-40	35.5-36 L _H	-	-	-
Orbital length	29-32	26.4-29 L _H	21	22.1 L _H	-
Predorsal length	128-130	45.7-46 L _S	87	38.8 L _S	-
Postdorsal length	253-255	90-90.4 L _S	-	-	-
Prepectoral length	102-108	36.4-38.0 L _S	79	35.3 L _S	-
Pectoral fin length	41-43	14.6-15 L _S	42	18.8 L _S	-
Preanal fin length	156-158	56-55.7 L _S	127	56.7 L _S	-
Postanal fin length	152-155	54.3-54.6 L _S	-	-	-
Anal fin length	52-53	18.6-18.7 L _S	49	21.9 L _S	-
Preanus length	118-120	42-42.1 L _S	-	-	-
Caudal peduncle length	23-25	8.2-9 L _S	-	-	-
Body depth at pectoral fin	142-144	50.7-51 L _S	-	-	-
Body depth at anal fin	163-166	58-58.2 L _S	-	-	-
Meristic characters					
Dorsal fin spines	X-X		X		X
Dorsal fin rays	23-24		23		23-24
Pelvic fin spines	I-I		1		1
Pelvic fin rays	7-7		7		7
Anal fin spines	IV-IV		IV		IV
Anal fin rays	22-22		22		20
Pectoral fin spines	0		0		
Pectoral fin rays	13-13		13		
Gill rakers	20-20		20		

Bibliography

- Al-Abdessalaam T.Z.S.**, 1995 - *Marine species of Sultanate of Oman*. Ministry of Agriculture and Fisheries, Sultanate of Oman, 412 pp.
- Bauchot M.L.**, 1987 - Poissons osseux. In: *Fiches FAO d'identification des espèces pour les besoins de la pêche. (Révision 1). Méditerranée et Mer Noire. Zone de pêche 37. Vol. 2: Vertébrés*. W. Fischer, M.L. Bauchot, M. Schneider (eds), FAO, Rome, pp : 891-1422.
- Ben Souissi J., H. Méjri, J. Zaouali, A. El-Abed, O. Guélorget, C. Capapé**, 2004 - On the record of John Dory, *Zeus faber* Linnaeus, 1758 (Osteichthyes: Zeidae) in a perimediterranean lagoon: The Tunis Southern lagoon (Northern Tunisia). *Annales, Ser. Hist. nat.* **14** (2): 219-224.
- Eryilmaz L.S.**, 2001 - A Study on the Bony Fishes Caught in the South of the Sea of Marmara by Bottom Trawling and their Morphologies. *Turk. J. Zool.*, **25** : 323-342.
- Eschmeyer W.N., J.D. Fong**, 2011 - Species of Fishes by family/subfamily. On-line version dated 14 July 2011. <http://research.calacademy.org/research/ichthyology/catalog/SpeciesByFamily.asp>
- Fischer W., G. Bianchi** (eds), 1984 - *FAO species identification sheets for fishery purposes. Western Indian Ocean. Fishing Area 51*. Food and Agricultural Organization of the United Nations, Rome, Vols I-VI : pag. var.
- Froese R., D. Pauly** (eds), 2011 - *FishBase. World Wide Web electronic publication. version (08/2011)*. www.fishbase.org.
- Golani D., S.V. Bogorodsky**, 2010 - The Fishes of the Red Sea - Reappraisal and Updated Checklist. *Zootaxa*, **2463** : 1-135.
- Manilo L.G., S.V. Bogorodsky**, 2003 - Taxonomic composition, diversity and distribution of coastal fishes of the Arabian Sea. *J. Ichthyol.*, **43** (Suppl. 1): 75-149.
- Morey G., J. Moranta, E. Massutí, A. Grau, M. Linde, F. Riera, B. Morales-Nin**, 2003 - Weight-length relationships of littoral to lower slope fishes from the western Mediterranean. *Fish. Res.*, **62** : 89-96.
- Moutopoulos D.K., K.I. Stergiou**, 2002 - Length-weight and length-length relationships of fish species from the Aegean Sea (Greece). *J. appl. Ichthyol.*, **18** : 200-203.
- Nelson J.S.**, 2006 - *Fishes of the world*. (4rd edn), New Jersey, John Wiley & Sons, 601 pp.
- Quéro J.C.**, 1986 - Zeidae. In : *Fishes of the North-eastern Atlantic and the Mediterranean Volume II*. P.J.P. Whitehead, M.L. Bauchot, J.C. Hureau, J. Nielsen, E. Tortonese (eds), UNESCO, Paris, pp : 769-772.
- Quéro J.C., J.J. Vayne, C. Karrer**, 1981 - Zeidae. In : *Fiches FAO d'identification des espèces pour les besoins de la pêche. Atlantique centre-est; zone de pêche 34, 47*. W. Fischer, G. Bianchi, W.B. Scott (eds), FAO, Rome, Vols I-VII : pag. var.
- Randall J.E.**, 1994 - Twenty two new records of fishes from the Red Sea. *Fauna Saudi Arabia*, **14** : 259-275.
- Randall J.E.**, 1995 - *Coastal fishes of Oman*. Crawford House Pub, Bathurst, Australia, 439 pp.
- Santini F., J.C. Tyler, F. Alexandre, A.F. Bannikov, D.S. Baciú**, 2006 - A phylogeny of extant and fossil buckler dory fishes, family Zeidae (Zeiformes, Acanthomorpha). *Cybium*, **30** : 99-107.
- Smith M.M., P.C. Heemstra** (eds), 1986 - *Smith's Sea Fishes*. Springer-Verlag, Berlin, 1047 pp.
- Tyler J.C., B. O'Toole, R. Winterbottom**, 2003 - Phylogeny of the genera and families of Zeiform fishes, with comments on their relationships with tetraodontiforms and caproids. *Smithson. Contrib. Zool.*, **618** : 1-110.
- Vrgo N., S. Krstulović Šifner, V. Dadić, S. Jukić-Peladić**, 2006 - Demographic structure and distribution of John Dory, *Zeus faber* L. 1758, in the Adriatic Sea. *J. appl. Ichthyol.*, **22** : 205-208.
- White A.W., M.A. Barwani**, 1971 - *Common sea fishes of the Arabian Gulf and Gulf of Oman*. Trucial States Council, Dubai, 170 pp.
- Yoneda M., S. Yamasaki, K. Yamamoto, H. Horikawa, M. Matsuyama**, 2002 - Age and growth of John Dory, *Zeus faber* (Linnaeus, 1758) in the East China Sea. *ICES J. mar. Sci.*, **59** : 749-756.

Received August 2011

Accepted November 2011

Published electronically December 2011

www.marinelife-revue.fr