

**A LAG OF 44 YEARS: PRESENCE OF *EPINEPHELUS LANCEOLATUS*
(ACTINOPTERYGII: PERCIFORMES: EPINEPHELIDAE) FROM THE PERSIAN GULF***

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Abstract. An old stuffed specimen of the giant grouper, *Epinephelus lanceolatus* (Bloch, 1790) (2000 mm TL), was recovered during the relocation of the artefacts of the Basrah Natural History Museum, University of Basrah, Iraq recently. The specimen was collected 44 years ago in 1974 by a gillnet in the Shatt al-Arab Estuary, Basrah, Iraq. So far, this species is known to have no records from the Persian Gulf area. The present report is important in recording *E. lanceolatus* from the estuary of the Shatt al-Arab River and is considered new for both the Iraqi and the Persian Gulf waters. Our finding brings to light an amazing example of invasion lag.

Keywords: Arabian Gulf, Persian Gulf, Basrah City, Iraq, Serranidae, range extension, biogeography

INTRODUCTION

A lag phase is not an unusual phenomenon in invasion biology (Heger and Trepl 2003, Binggeli 2001). The utmost attention related to lags has been given to the population dynamics of invaders, rather than the lags that are possible during any stage of the invasion course, including in the arrival of species, the effects of already recognized invaders, or even our management of the increasing invasion disaster (Crooks 2005).

There should be first a means for any invader species to appear in the new environment such as a ballast tank, canal, or airplane wheel well. Later, it must be documented. Detection of the invading species at the time of the entry into the new environment has happened only in a limited number of cases (Crooks 2005), but in most cases some time will lapse between the initial invasion and subsequent discovery of the invader, as there is a strong bias for spotting invaders only after they become well distributed irritants (Crooks and Soulé 1999). These lags in detection are critical as they affect the ability to estimate the prevalence of other types of lags.

Smith and Craig (2007) have resurrected the family Epinephelidae to contain 165 species in 16 genera. Groupers in this family are biologically and ecologically diversified. They are commercially important reef fishes (Craig et al. 2012).

Epinephelus lanceolatus (Bloch, 1790) is a marine and brackish water species living in association with reef at depth range of 1–200 m (Bacchet et al. 2005), but usually down to 50 m (Myers 1999). This species has been reported from the Indo-Pacific region from the Red Sea to Algoa Bay, South Africa and eastward to the Hawaiian and Pitcairn islands, north to southern Japan, south to Australia (Lieske and Myers 1993). The record of this species from the southern coasts of Oman depends on underwater observation and no specimen was collected (Randall 1995). Craig et al. (2012) have mentioned the absence of this species from the Persian Gulf. However, in the photo section of the page of this species in the FishBase (Froese and Pauly 2019), there is one photo of this species has been collected from Iranian waters, but no mention was given about its locality.

The aims of the presently reported study are: (1) to record for the first time the giant grouper from both the Shatt al-Arab Estuary, Basrah, Iraq and the Persian Gulf; (2) to unveil the presence of an old specimen which has been collected 44 years from the Iraqi waters.

MATERIAL AND METHODS

A stuffed and mounted large specimen (2000 mm TL) of *E. lanceolatus* was found in the storage of the Basrah Natural History Museum (BNHM), University of Basrah,

* The Persian Gulf is otherwise known as the Arabian Gulf or the Gulf of Iran.

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Iraq during the relocation of the museum to its new building and now on display in the marine hall of the museum. The specimen was captured over 44 years in 1974, by a gill net deployed between 18 and 25 m depth, in the Shatt al-Arab Estuary, Basrah (29°56'49.03"N, 048°34'27.20"E). Meristic counts were made and measurements were taken using a tape measure and recorded to the nearest 0.1 cm, according to the methods of Hubbs and Lagler (2004) and shown in Table 1. Identification followed Randall and Heemstra (1991) and Craig et al. (2012).

Table 1

Morphometric and meristic characters of *Epinephelus lanceolatus* collected from the estuary of Shatt al-Arab River, Basrah, Iraq

Character	Morphometric		Meristic
	[mm]	[%TL]	
Total length	2000		
Standard length	1790	89.5	
Head length	750		41.9
Preorbital length	240		13.4
Eye diameter	60		3.4
Postorbital length	480		26.8
Predorsal fin length	780		43.6
Postdorsal fin length	1610		89.9
Prepectoral fin length	780		43.6
Pectoral fin length	30		1.7
Preanal fin length	1640		91.6
Postanal fin length	1680		93.9
Caudal peduncle depth	258		14.4
Caudal peduncle length	102		5.7
Body depth	600		33.5
Number of dorsal fin spines			11
Number of dorsal fin rays			15
Number of pectoral fin rays			19
Number of anal fin spines			3
Number of anal fin rays			8
Number of lateral line scales			92

SL = standard length, TL = total length.

RESULTS

The stuffed specimen of *E. lanceolatus* has the following set of characters and fits the description given by Randall and Heemstra (1991): body deep and firm; small eye; rounded preopercle and finely serrate; maxilla reaching well behind eye; more than 3 rows of teeth at sides of lower jaw; dorsal fin spines increasing in length posteriorly, significantly shorter than the soft-rays; caudal fin supposed to be rounded; caudal fin having worn; cycloid scales on body. The specimen has been painted with dark artificial colour, which mask the original colouration of this species, except for the pectoral and caudal fin they look lighter indicating their yellowish original colour.

DISCUSSION

Randall and Heemstra (1991) showed that the giant grouper differs from its congeners in a set of characters. It differs from *Epinephelus malabaricus* (Bloch et Schneider,

1801) in having the last dorsal fin spine the longest; lateral line tubes branched; midlateral body scales cycloid. In addition to these characters, it differs from *Epinephelus tauvina* (Forsskål, 1775) in having head and body not covered with small dark orange-red to brown spots.

The presently reported specimen of *E. lanceolatus* was an interesting finding, because even though the staff of the (BNHM) were knowledgeable of current common species of groupers in the Iraqi waters, but they do not know about the importance of this record to science. The specimen was kept in the storage and spared the damage that happened to the other museum artefacts during the periods of political unsettlement. The museum is lucky in having the original information of the date of collection and locality. Due to the bad preservation, the specimen appeared to have a notch on its dorsal profile just anterior to the spinous part of the dorsal fin.

Besides the noxious nature of the specimen, the presently reported finding provides clear evidence that at least one giant grouper individual was present in the Persian Gulf waters 44 years in 1974 and such finding will certainly lead to change the distribution of this species in the main data bases such as the FishBase and GBIF.

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