

First substantiated record of sea lamprey *Petromyzon marinus* (Agnatha: Petromyzonidae) from the Syrian coast (Eastern Mediterranean Sea)

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Abstract

On 28 July 2020, a specimen of sea lamprey *Petromyzon marinus* Linnaeus, 1758 was captured north of Jable, from the Syrian coast. The specimen is described with morphometric measurements, while the species occurrence in the area and the Mediterranean Sea is discussed and commented. This new finding constitutes the first record of the species for the Syrian coast, and also its easternmost extension range in the Mediterranean Sea. Additionally, sea lamprey remains an occasional visitor in the Syrian waters and, consequently, the local occurrence of a viable population remains doubtful.

Keywords: Petromyzonidae, First record, Measurements, Extension range, Syria, Parasitism.

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Introduction

Sea lamprey, *Petromyzon marinus* Linnaeus, 1758 is widely distributed in the northwestern Atlantic Ocean from the western coast of Greenland, down to Florida into the Gulf of Mexico (Vladykov 1984; Jensen and Schwatrz 1994; Renaud 2011). Additionally, some populations are considered as permanent residents of freshwater Laurentian Great Lakes that it invaded in the late 1930s and, unfortunately, contributed to the collapse of some fisheries (Renaud 2011). *Petromyzon marinus* also occurs in the northeastern Atlantic, from Iceland, Great Britain and Ireland (Maitland 2000), France (Grellier 1996) to the Iberian Peninsula where the species has an economical interest (Mateus et al. 2012). South the Strait of Gibraltar, *P. marinus* was only reported off the Moroccan coast, however captures are very rare and occurred close to the mouth of some wadis (Collignon and Aloncle 1972). Conversely, the species did not occur southward off the western African coast (Fernholm 1990).

The occurrence of sea lamprey is well-documented throughout the western Mediterranean Sea (Vladykov 1984), and the Adriatic Sea (Lipej and Dulcic 2010; Tutman et al. 2020). *Petromyzon marinus* was recently found from the Mediterranean coast of Morocco (Claero et al. 2014). A single well-documented record of *P. marinus* from the Algerian coast was reported by Seurat and Dieuzeide (1931) while Bacha and Amara (2007) noted that the species is captured in the Wadi Soummam, located in northern Algeria. Kara (2012) reported the occurrence of the species in Algerian freshwaters, probably based on previous reports. Rafrafi-Nouira et al. (2015) listed the records of the species from the Tunisian waters, where it appears to be rather rare and sporadically caught.

Petromyzon marinus is recorded the western coast of Greece (Karachle and Machias 2014), the Aegean Sea (Economidis et al. 1999) and generally in the Turkish waters (Bilecenoğlu et al. 2010; Cevik et al. 2010; Çiçek et al. 2015; Turan et al. 2018). Since several decades, a monitoring regularly conducted throughout the Syrian waters allow capturing for the first time a specimen of this species which is described in the present note with some comments of its distribution in the area.

Material and Methods

On 28 July 2020, a specimen of sea lamprey *P. marinus* was caught by gillnet off Jableh city located on the

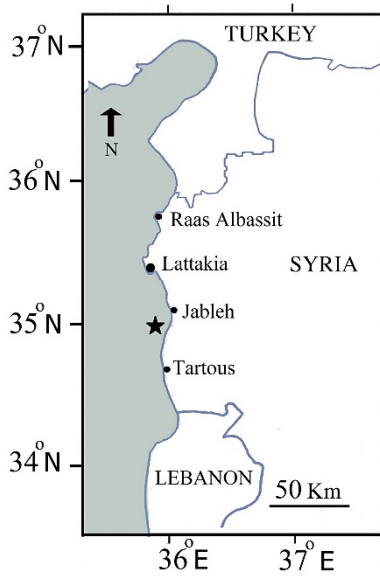


Figure 1. Map of the Syrian coast indicating (black star) the capture site of *Petromyzon marinus* (off Jableh City).



Figure 2. Specimen of *Petromyzon marinus* (ref. MSL-2020-23) captured off Jableh City, Syrian coast (scale bar = 50 mm).

Table 1. Absolute and relative values of selected morphometric measurements and total body weight of a specimen of *Petromyzon marinus* captured off Jableh City, Syrian coast.

Reference	MSL-2020-023	
Morphometric measurements	mm	%TL
Total length (TL)	350	100.0
Cloacal slit length	4.5	1.3
Tail length	4.2	1.2
Trunk length	177	50.0
Snout length	26.1	7.5
Preocular length	9.5	2.7
Eye length	2.5	0.7
Disc length	23.1	6.6
Branchial length	34.3	9.8
Interbranchial opening distance	3.9	1.1
Total body weight in gram	451	

northern coast of Syria, 35°25'15"N-35°34'20"E (Fig. 1). The capture occurred at a depth of 30 m, on sandy bottom partially covered with gravels and rocks, together with algae, teleost and crustacean species.

Morphometric measurements were carried out to the nearest millimetre (including percent in TL) following Renaud (2011). Total body weight was recorded to the nearest decigram (Table 1). The specimen was preserved in 10% buffered formalin, and deposited in the Ichthyological Collection of the Marine Sciences Laboratory, Faculty of Agriculture, Tishreen University, Lattakia, Syria, receiving the catalogue number MSL-2020-23 (Fig. 2).

Results and Discussion

The specimen was identified as *P. marinus* from: body snake-like, skeleton entirely cartilaginous, mouth arranged in a circular sucking-disc with horny teeth, seven external gill openings close to the head, dorsal fin with two lobes well separated, moderately well-developed marginal membrane, caudal fin shape and spade like; eye small with iris golden yellow; colour dorsally gray-bluish, more or less covered with dark-brownish notches irregularly arranged, belly silvery white.

Morphology, morphometric measurements, percentages of total length and colour are all in broad agreement with previous description of *P. marinus* such as Vladykov (1984) and Renaud (2011) confirm presence of the

species in the Syrian marine waters. However, this first new record, shows the rarity of *P. marinus* in the area, and, consequently does not constitute sufficient data to support that a viable population could be locally established. Conversely, the species could be included in the Syrian ichthyofauna.

This finding of *P. marinus* is also the first record of the species in the Levant Basin, the species was not previously recorded in close areas (Golani 2005; Bariche and Fricke 2019), and therefore constitutes the easternmost extension range of the species in the Mediterranean Sea. On the other hand, adults *P. marinus* are parasitic on mammals and large fishes (Renaud 2011), especially on sharks such as basking shark *Cetorhinus maximus* (Gunnerus, 1765) which occur in the Mediterranean Sea (Quéro 1984), and in the Syrian waters (Ali et al. 2012; Ali 2018). Renaud (2011) noted that feeding migrations in landlocked parasitic adults in the Laurentian Great Lakes can reach 628km, so it seems likely that larger distances could also be reached by *P. marinus* in open seas, inhabited by large fish species. Such patterns could explain the occasional occurrence of sea lampreys in the Syrian waters, in total agreement with observations carried out for the Tunisian waters (Rafrafi et al. 2015). The occurrence of *P. maximus* in both areas could not be considered as migrations of the species but rather brought *in situ* by large fishes or mammals.

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