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Short communication

First Record of Pope's ponyfish *Equulites popei* (Whitley, 1932), (Osteichthyes: Leiognathidae) in the Syrian Marine Waters (Eastern Mediterranean)

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Abstract
The eastern Mediterranean has received many alien fish species, mainly due to climate changes and human activities. The Lessepsian species *Equulites popei* (Whitley, 1932) had been previously recorded in the northern and southern parts of the eastern Mediterranean. It was first classified as *Equulites elongatus*. Later on, and based on DNA analysis. *E. elongatus* has been split in three different species, and *E. popei is* one of them. The Mediterranean specimens belong to *E popei*. This paper confirms that *E. popei* is present in the Syrian marine waters for the first time. This record fills the gap in the species distribution between north and south of the eastern Mediterranean.

Keywords: Alien Species, Levantine Basin, Mediterranean Sea, the Syrian coast

Introduction
The Mediterranean Sea has received numerous alien species (Katsanevakis *et al.* 2014), that benefited from the environmental conditions' alteration due to climate changes and human activities ((Katsanevakis *et al.* 2016, Mannino *et al*. 2017, Queiroz and Pooley 2018, Giovos *et al*. 2019). Leiognathidae family includes ten genera containing 51 species (Froese and Pauly 2019) that spread in the tropical and subtropical marine waters. They are characterized by small to medium-size (rarely exceeding 16 cm) and protractile mouth forming, when extended, a tube directed either upwards (Secutor species), forward (Gazza species) or forward-downward (Leiognathus species) (Carpenter and Niem 1999). *Equulites popei* (Whitley, 1932), of the family Leiognathidae, had been recorded in the eastern Mediterranean (e.g. Golani *et al.* 2011, Gerovasileiou *et al.* 2017) but was classified as *Equulites elongates*. Later on, and based on DNA analysis, the species *E. elongatus* has been split in three different species. The Mediterranean specimens belong to *E popei, which* was a junior synonym of *E. elongatus* until Suzuki and Kimura (2017) revealed that they are separate species. In addition, members of both species have a deep and sharp incision on the posterior margin of the adipose eyelid, but those of *E.popei* have (0-2) dark marks and (0-5) dark spots on the dorsal side of the body, while those of *E.elongatus* have (1-9) ring

marks and (0-14) dark spots (Suzuki and Kimura 2017). These two species also differ from each other in their distribution range: *E. elongatus* spreads in northern Australia, Indonesia, and Myanmar, while *E. popei* spreads on the east coast of Africa, the Red Sea, Philippines, north to Japan, Thailand, and south to Malaysia (Froese and Pauly 2019). Taking into account the subsequent taxonomic correction, the Lessepsian *E. popei* had been recorded in the south-eastern Mediterranean (e.g. Golani *et al.* 2011), and then in the north-eastern Mediterranean (e.g., Yokeş 2015); it was not reported before in the Syrian marine water (Ali 2018). This study confirms, for the first time, that *E. popei* also exists in the Syrian marine waters, the central part of the eastern Mediterranean.

Material and methods

On 10 January 2020, a field trip was performed in the marine waters facing Banyas city, Syria (N35°31'5.97" E35°42'48.57"; Fig.1) to collect fish samples using a gillnet (18mm mesh size, 3m height, 200m length: with duplicates), with the assistance of fishing boat (9.5m, 19HP). The specimen was identified according to Carpenter and Niem 1999, Suzuki and Kimura 2017, and Psomadakis *et al.* 2019. The morphometric measurements (length to the nearest mm, weight to the nearest g) and meristic counts were recorded. It was then photographed, preserved in 7% formaldehyde, and placed at the Biological Laboratory of the High Institute of Marine Research (Tishreen University - Lattakia, Syria) as a reference sample (Reference No: HIMR-MBL, BF, 20203-N).

Results and Discussion

A single specimen of the Pope's ponyfish *E. popei* was caught at ~30-40 m water depth off Banyas coast. It has an elongated and compressed body, with big eyes, a short snout and a mouth moving downward. The body's ventral side is pearly white, while the dorsal side is silvery with two dark marks and five dark spots on the dorsal side of the body (Fig.2-A). It has a deep sharp incision on the posterior margin of the adipose eyelid (Fig.2-B). The meristic formula is: D,VIII+16; A,III+14; P,12; V,I+5; C,15. These features of *E.popei* agree with Carpenter and Niem 1999, Suzuki and Kimura 2017, and Psomadakis *et al.* 2019. The morphometric measurements are shown in Table (1).

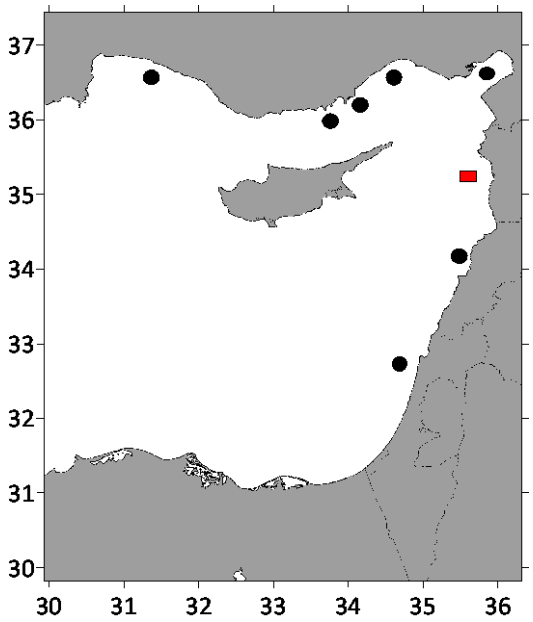

Figure 1. *E.popei* distribution in the eastern Mediterranean (black spots mark the previous distribution areas; the red rectangle marks the present specimen location)

Table 1. Morphometric characteristics of *E.popei* caught from Banyas coast, Syria

Features	Morphometric measurement (mm or g)
Total length	108
Standard length (SL)	92
Head length	25 (27.2%SL)
Eye diameter	8 (8.7%SL)
Body depth	27 (29.3%SL)
Dorsal fin length	50 (54.3%SL)
Pectoral fin length	10 (10.9%SL)
Pelvic fin length	13 (14.1%SL)
Anal fin length	36 (39.1%SL)
Caudal fin length	20 (21.7%SL)
Pre-dorsal length	34 (37%SL)
Pre-pectoral length	26 (28.3%SL)
Pre-pelvic length	26 (28.3%SL)
Pre-anal length	41 (44.6%SL)
Total weight	14

E.popei is a tropical species, existing in the Indo-West Pacific: from the Red Sea to northern Australia, Indonesia, and Myanmar (Froese and Pauly 2019). Previously, Lessepsian individuals had been recorded in the southeast of the Mediterranean Sea (Golani *et al.* 2011, Gerovasileiou *et al.* 2017) and then in the northeast of Mediterranean Sea (Irmak *et al*. 2015, Yokeş 2015, Sakinan *et al.* 2017, Ergüden *et al.* 2019, Mavruk *et al*. 2019). . This species was not recorded before in the Syrian coast, because it is hardly seen in the landings due to fishermen ignorance to this non-commercial species and to the narrow shape, which allows the fish to escape through the openings of the commercial fishing nets (Alshawy *et al.* 2019a, Ibrahim *et al.* 2020). Recording of *E. popei* in the Syrian marine waters fills the gap of its distribution along the eastern part of the Mediterranean Sea (Fig.1).

Figure 2. *E. popei*; A- Specimen caught on 10-1-2020 from Banyas coast, Syria. B- Deep and sharp the incision on the posterior margin of the adipose eyelid.

Conclusion

E. popei is a Lessepsian species recorded for the first time in the Syrian marine waters. This record fills the gap of the species distribution along the eastern Mediterranean. It provides further evidence that the environmental changes due to human activities and climate changes made the Mediterranean waters more able to accommodate the tropical species on account of the native ones (Katsanevakis *et al.* 2016, Mannino *et al*. 2017).

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