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SHORT COMMUNICATION

The first record of *Synanceia verrucosa* Bloch & Schneider, 1801 and *Pagrus auriga* Valenciennes, 1843 from Cyprus

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Abstract

On May 14, 2020, a stonefish (*Synanceia verrucosa* Bloch & Schneider, 1801) was caught using a speargun in Kumyalı in the north of Cyprus Island. The fish was photographed and reported. On November 19, 2020, red-banded seabream (*Pagrus auriga* Valenciennes, 1843) was caught with a speargun near Girne (Kyrenia) Harbour. The fish is stored in the laboratory of the Eastern Mediterranean University, Department of Biological Sciences. These records are the first from the waters of Cyprus. The record of stonefish is an issue to be considered since its spines are quite poisonous.

Keywords: Stonefish, alien species, venomous fish, migration, red-banded seabream, Mediterranean

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Cyprus is an island located south to Turkey in the eastern Mediterranean Sea (Figure 1). The population settled on the island is around 1.1 million (TRNC Statistical Institute 2019; Statistical Service 2019). The tourism sector on the island is generally hotel-oriented. With its mild climate and relatively clean sea, it attracts tourists to the beaches. In the region where sea and beach activities are intense, it is important whether invasive species coming by sea are harmful or not. Cyprus is the closest island to the Suez Canal in the eastern Mediterranean. Since the opening of the Canal, many alien species have migrated to the Mediterranean and via specific routes to Cyprus (Katsanevakis 2009). The most commonly observed species are: *Siganus* sp. (Norman 1929), *Fistularia*

commersonii (Wirtz and Debelius 2003), *Sargocentron rubrum* (Fodera 1961), *Lagocephalus sceleratus* (DFMR 2006), *Torquigener flavimaculosus* (Michailidis 2010), *Pterois* sp. (Bariche *et al.* 2013), *Parupeneus forsskali* (Iglésias and Frotté 2015), *Synodus saurus* (Torcu *et al.* 2001), and *Stephanolepis diaspros* (Hornell 1935).

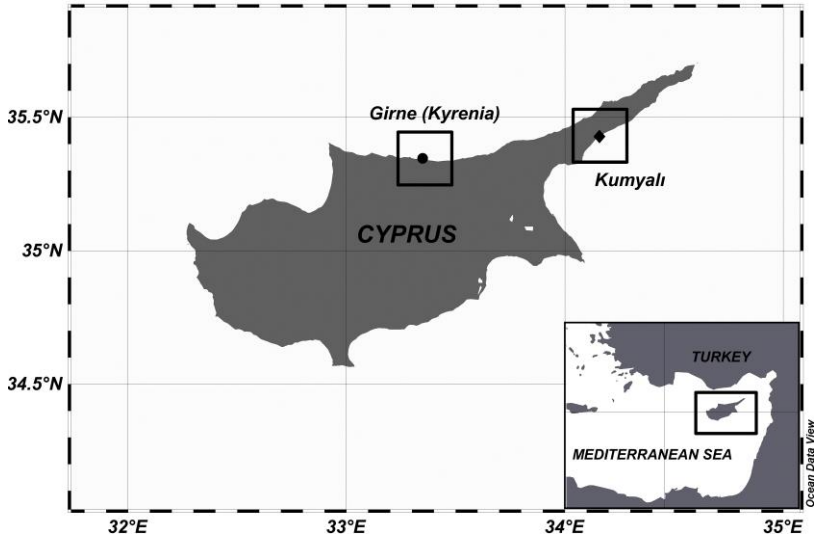

Figure 1. Approximate catch locations of *Pagrus auriga* ● and *Synanceia verrucosa* ♦

Stonefish, *Synanceia verrucosa*, is a venomous fish species belonging to the Synanceiidae family (Carpenter and Niem 1999; Carpenter and De Angelis, 2016). There are many studies on alien species in Cyprus, but there is no data on this species' existence (Katsanevakis *et al.* 2009, Iglésias and Frotté 2015). Stonefish mainly inhabits shallow rocky areas up to 20 m in depth. They are very well adapted to rocky areas with their body structure. They also can bury themselves in the sand to camouflage.

On May 14, 2020, an individual of *S. verrucosa* (Figure 2) was caught with a speargun during a lionfish (*Pterois* sp.) targetted hunting near Kumyalı Fisher Shelter (Figure 1). The fish was photographed by the harpooners and reported to the authors. The species was identified from its photograph according to Bauchot and Hureau (1990), considering its size, characteristic coloration and distribution. Its body was partially covered with red-brown algae. The caudal, pectoral, and ventral fins were large and had many spines. Body and head were almost the same widths, head was straight. The mouth is in the form of a half-moon and directed to the dorsum of the body. The upper jaw was located in line with the head. The eyes were located at the top of the head. These characteristics also agreed with the description given in Edelist *et al.* (2011). The sample had a total length of approximately 25 cm and a weight of 700 g. Besides, the species' presence in the

Red Sea (Ormond 1987) and other records in the Mediterranean also indicate *S. verrucosa* (Edelist *et al.* 2011; Bilecenoglu 2012; Crocetta *et al.* 2015; İbrahim *et al.* 2019)

Figure 2. A specimen of *Synanceia verrucosa* reported in the present study

On November 19, 2020, another fish was reported to us from the Girne region. The reported fish was caught with a speargun at around 2 m in depth near the Girne Harbor (Figure 1) and was immediately delivered to us. Fish identification and morphometric measurements were made according to Froese and Pauly (2019). It was determined that the fish belongs to the species *Pagrus auriga* (Figure 3). According to Pajuelo *et al.* (2006), our specimen was a juvenile with a 158 mm TL.

Figure 3. A specimen of *Pagrus auriga* reported in this study

Synanceia verrucosa is known to be a non-migratory fish, which has a wide distribution in the Red Sea. The first occurrence of this species in the Mediterranean was in 2011 at Israel (Edelist *et al.* 2011). It was subsequently reported in Iskenderun in 2012 (Bilecenoglu 2012), Lebanon in 2014 (Crocetta *et al.* 2015), and Syria in 2019 (İbrahim *et al.* 2019), respectively. This study is the first sighting of this species for Cyprus and the fifth report in the Mediterranean Sea.

Morphometric measurements of the specimen are shown in Table 1. Proportions (%) of the specimen agreed with the values given in Froese and Pauly (2019).

Table 1. Basic morphometric characteristics of *Pagrus auriga* specimen

Character	Length (mm)	%	
Total length	158	100	
Standard length	132	83.5	
Fork length	143	90.5	
Pre-anal length	82	51.9	**TL %**
Pre-dorsal length	43	27.2	
Pre-pelvic length	47	29.7	
Pre-pectoral length	46	29.1	
Body depth	59	37.3	
Head length	44	27.8	
Snout length	17	38.6	**HL %**
Eye diameter	14	31.8	
Pre-orbital length	16	36.4	

Pagrus auriga is a fish species found in many habitat types, mostly in rocky areas. They can be seen from shallow depths to 170 m (Bauchot and Hureau 1986, 1990). There is no occurrence record in the literature in Cyprus.

Pagrus auriga is widely distributed in the south-west and northwest of the Mediterranean (Matallanas *et al.* 1993). This species is also common in the Aegean Sea, while it can also be seen in the northeastern Mediterranean and the southern coasts of the Mediterranean (Fishbase 2020). According to Keskin *et al.* (2011), the frequency of occurrence of *P. auriga* in the Levantine Sea was found to be much less than other Sparidae species. The presence of *P. auriga* in Cyprus will contribute to both the literature regarding the distributional range in the Eastern Mediterranean and the Cyprus marine fish checklists. Also, morphometric measurements in Table 1 are given to contribute to the database for future studies.

This study also aimed to give a warning against possible danger while recording *S. verrucosa* from the region because it carries a serious neurotoxin in spines surrounding their skin, thus it is more important to raise the local population's awareness. Several cases of stonefish sting were reported in the past. In a recently published study, three cases of stinging were reported (Ghanem *et al.* 2019;

Maillaud *et al.* 2020). *Synanceia verrucosa* has a complex venom composition with hemolytic (Ueda *et al.* 2006) and neurotoxic effects (Breton *et al.* 2002). Due to the neurotoxic effect of the venom, severe respiratory failure was experienced in all three cases. In two cases, the improvement was seen after days in intensive care. Unfortunately, in one case, death was reported due to a prior history of asthma (Maillaud *et al.* 2020). In another study, an accidental sting was reported from Bahrain. A fisher was accidentally stung by a stonefish. He thought that it was a coral and held the fish by hand. Fortunately, after prolonged intensive care, the fisher survived (Ghanem *et al.* 2019). Although there has been no case of *S. verrucosa* sting on the island of Cyprus until now, the fact that its habitat is in shallow waters increases the possibility of encounters. Especially during scuba diving and spearfishing, it is crucial to inform the relevant authorities to prevent possible envenomation cases. Besides, health institutions must be updated in terms of appropriate treatment methods to appropriately and quickly treat potential cases. Considering the morphological characteristics of the fish, it is understood that it can be camouflaged in the rocky area with a perfect adaptation. The fact that harpooners, divers and swimmers do not contact the seafloor in any way is very useful in preventing accidental stings. In a possible stung case, it is advised to go to the nearest health institution. If possible, pour hot water not more than 45°C on the wound. When the poison has a protein structure (Shiomi *et al.* 1993), hot water application helps to deteriorate the protein structure and reduce the poison's effect.

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Kıbrıs'tan *Synanceia verrucosa* Bloch & Schneider, 1801 ve *Pagrus auriga* Valenciennes, 1843'ün ilk kaydı

Öz

Kıbrıs'ın kuzeyinde bulunan Kumyalı bölgesinde 14 Mayıs 2020 tarihinde zıpkınla bir taş balığı (*Synanceia verrucosa* Bloch & Schneider, 1801) yakalandı. Balık denizden çıkarıldıktan sonra fotoğrafı çekildi ve bize bildirildi. 19 Kasım 2020'de ise Girne Limanı yakınlarında bir adet çizgili mercan (*Pagrus auriga* Valenciennes, 1843) zıpkınla yakalandı. Örnek Doğu Akdeniz Üniversitesi Biyolojik Bilimler Bölümü laboratuvarında saklanmaktadır. Bu kayıtlar Kıbrıs Adası suları için bir ilktir. Taş balığının kaydı, balığın dikenleri oldukça zehirli olduğu için dikkate alınması gereken bir konudur.

Anahtar kelimeler: Taş balığı, yabancı türler, zehirli balık, göç, çizgili mercan, Akdeniz

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