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# The First Occurrence of the Pen Shell *Pinna nobilis* (Linnaeus, 1758) in the Samandağ coast, the northeastern Mediterranean

# Kuzeydoğu Akdeniz Samandağ Sahillerinde Delici Midye *Pinna nobilis* (Linnaeus, 1758)'in İlk Kaydı

Türk Denizcilik ve Deniz Bilimleri Dergisi

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## ABSTRACT

The pen shell *Pinna nobilis* is distributed in the northwest area of the Mediterranean and the Aegean Sea. In this study, on September 9, 2020, one specimen of *Pinna nobilis* was observed during scuba diving at 16 m depth from Samandag coast (36.259444° N, 35.810111° E) in the northeastern Mediterranean. In this region, the presence of *P. nobilis* has never been previously recorded, and this new record confirms the presence of a new location in the northeastern Mediterranean Sea.

**Keywords:** Bivalve, *Pinna nobilis,* pen shell, new location

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## ÖZET

Delici midye *Pinna nobilis* Akdeniz'in kuzeybatı bölgesinde ve Ege Denizi'nde dağılım göstermektedir. Bu çalışmada, 9 Eylül 2020 tarihinde, kuzeydoğu Akdeniz'deki Samandağ sahilinde (36.259444° K, 35.810111° D) 16 m derinlikte aletli dalış sırasında bir adet *Pinna nobilis* gözlenmiştir. Bu bölgede *P. nobilis*'in varlığı daha önce kaydedilmemiştir. Bu yeni kayıt, Kuzeydoğu Akdeniz'de yeni bir konumun varlığını bildirmektedir.

**Anahtar Kelimeler:** Bivalve, *Pinna nobilis,* delici midye, yeni dağılım alanı

## 1. INTRODUCTION

The pen shell or fan mussel *Pinna nobilis* (Linnaeus, 1758) is an endemic and common distributed bivalve mollusc of the Mediterranean Sea (Vázquez-Luis *et al.,* 2017; Zotou *et al.,* 2020) which plays a crucial environmental role, providing habitat to several species, decreasing turbidity and filtering water (Öndes *et al.,* 2020). *P. nobilis* is mostly reported in the northwest area of the Mediterranean and Aegean Sea (Marrocco *et al.,* 2018). In the eastern Mediterranean Sea, only records were made from Cyprus and Israel coast (Aguilar *et al.,* 2018; Marrocco *et al.,* 2019). The pen shell was recorded in Mersin from the eastern Mediterranean coast of Turkey (Buzzurro and Greppi, 1996). In recent years, it has also been reported in the Dardanelles Strait (Acarlı *et al.,* 2021) and the Sea of Marmara (Çınar *et al.,* 2021). However, for the last few decades, populations of *P. nobilis* have greatly declined due to a highly contagious protozoan disease and habitat disruption, climate change, resulting in reduction and loss of seagrass and increased anthropogenic activities such as extreme fishing and illegal trawling (Vazquez-Luis *et al.,* 2017; Turan *et al.* 2016; Kersting *et al.,* 2019; Özalp and Kersting, 2020). The threat resulting in mass mortality of *P. nobilis* populations was first reported in 2017 from Spain (Darriba, 2017) because of the protozoan species *Haplosporidium pinnae* (Künili *et al.,* 2021).

*P. nobilis* is a protected species under the European Council Habitats Directive 92/43/EEC (Directive, 1992), Bern Convention and Barcelona Convention (Annex II). The species has recently been listed as globally critical endangered (CR) in the IUCN Red List (Kersting *et al.,* 2019).

In this study, we reported the first occurrence of *P. nobilis* from the Samandağ coast, the northeastern Mediterranean. In this region, the presence of *P. nobilis* has never been previously reported, and this new record confirms the presence of a new location in the northeastern Mediterranean Sea.

## 2.MATERIAL AND METHODS

On September 9, 2020, one dead specimen of the *P. nobilis* (Figure 1B) was observed by a diver at a depth of 16 m from Samandağ coast (36.259444° N, 35.810111° E) and the habitat structure was determined as rocky (80%) and sandy (20%) (Figure 2). After the collection, the specimen was identified and photographed in the boat and laboratuary.

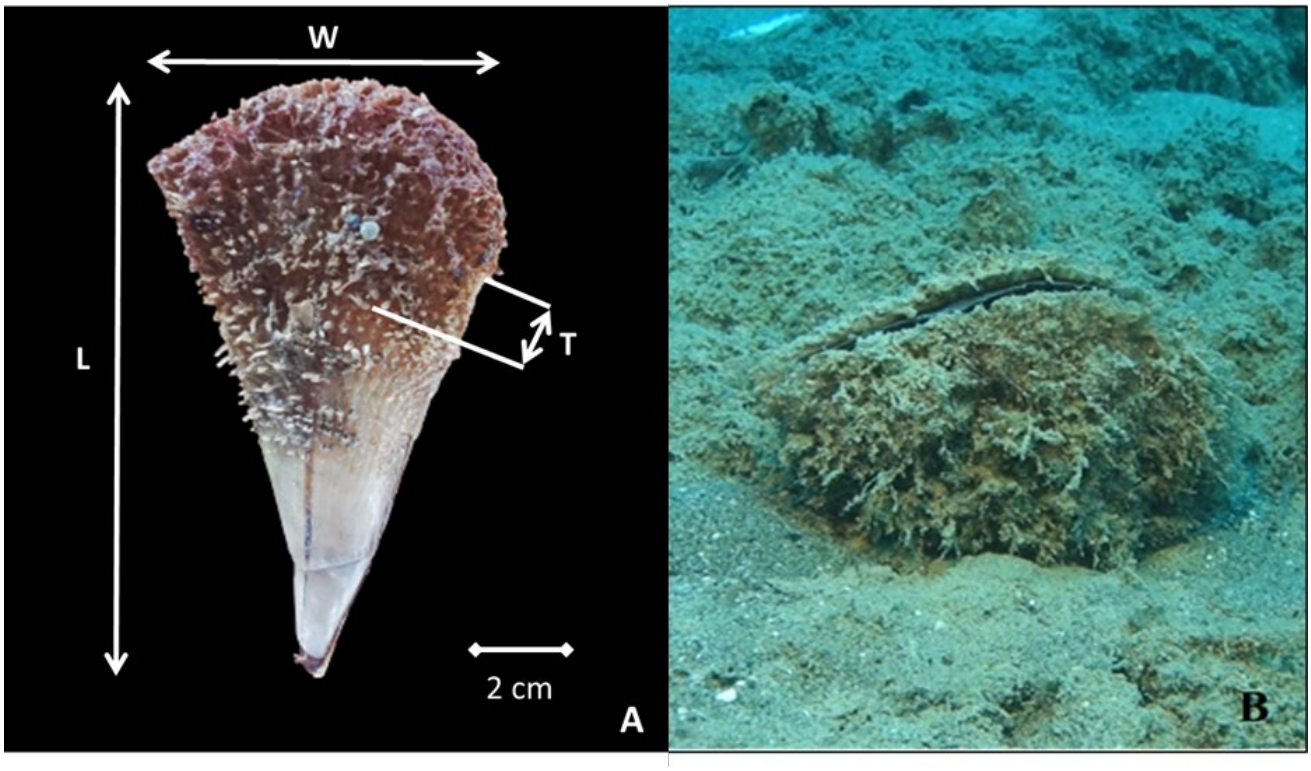


**Figure 1.** A: Sampled pen shell *P. nobilis* (L: length, W: weight, T: thickness) B: Underwater photos of *P. nobilis* from the Samandağ coast (Photographed by C.Turan).

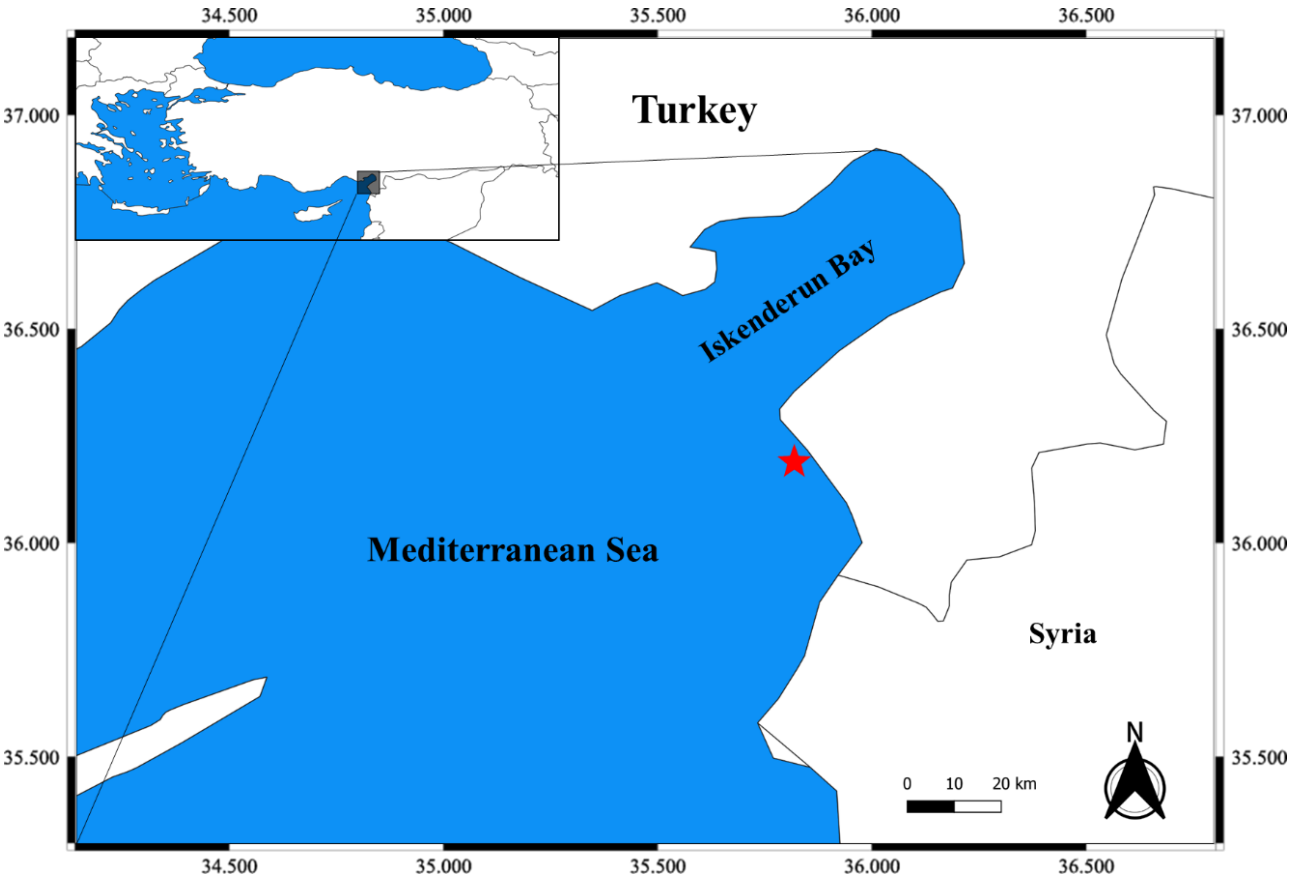


**Figure 2.** Map showing the sampling locality (red star) of *Pinna nobilis*

## 3. RESULTS AND DISCUSSIONS

In the present study, the measurements of the sampled *P. nobilis* were 13.8 cm length (L), 7.8 cm width (W) and 2.8 cm thickness (T) (Figure 1A). All measurements were made according to Haberle *et al.* (2020).

*P. nobilis* usually inhabit with seagrass *Posidonia oceanica* and *Cymodocea nodosa* (Zavodnik *et al.,* 1991) and its spreading was overlapped by the presence of *P. oceanica* (Richardson *et al.,* 1999). However, *P. oceanica* and *C. nodosa* were not found in the sampling area. On the other hand, a few *Caulerpa prolifera* was observed near the sampling regions. Coppa *et al.* (2013) reported that the higher efficiency for filtering *P. nobilis* is connected to hydrodynamic. The water flow is reduced by seagrass, which the efficiency of the filtering of the fan shells could be reduced (Koch *et al.,* 2007). Generally, the distribution of all benthic species is related to the habitat of the sea bottom (Galuppo *et al.,* 2007). The presence of *P. nobilis* could provide a positive effect hydro-dynamism of water on the Samandağ coast. Moreover, *P. nobilis* is supplying a very effective indicator of changes in the marine ecosystem, which knowledge for biotic response to anthropogenic impact (Marrocco *et al.,* 2019). *P. nobilis* is exposed to many abiotic and biotic sources of worryingly exhaust the populations in the Mediterranean Sea (Marrocco *et al.,* 2018), therefore, this new record significantly important in confirming the presence of a new location for its distribution and existance in the northeastern Mediterranean Sea.

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## DISCLOSURE STATEMENT

The author(s) declare there is no conflict of interest.

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