

## On the occurrence of *Pinctada radiata* (Mollusca: Bivalvia: Pteriidae), an alien species in Croatian waters

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Two specimens of lessepsian bivalve *Pinctada radiata* were encountered in a benthic study conducted at a depth of 59 m on a silty-sand bottom in the northern Adriatic Sea, Croatia, in April 2006. This is the first record of the species in the Croatian part of Adriatic Sea.

**Key words:** *Pinctada radiata*, Adriatic Sea, Croatia, new record

### INTRODUCTION

The family Pteriidae (Bivalvia: Pterioida), which includes the group of species known as “pearl oysters” comprises three genera, namely *Pteria* Scopoli, 1777, *Pinctada* Röding, 1798 and *Electroma* Stoliczka, 1871 (CLEMAM, 2008). This family is represented by three species (*Pteria hirundo* (Linné, 1758); *Pinctada radiata* (Leach, 1814) and *Electroma vexillum* (Reeve, 1857)) in the Mediterranean according to CLEMAM, while ZENETOS *et al.*, (2003, 2005) have included two more species, namely *Pinctada margaritifera* (Linné, 1758) and *Pteria occa* (Reeve, 1957). All of these species except *P. hirundo* are alien species that have been introduced to the Mediterranean either via the Suez Canal (*P. radiata*, *P. occa*), by aquaculture activities (*P. margaritifera*, *P. radiata*) or via shipping (*E. vexillum*) (GOFAS & ZENETOS, 2003; ZENETOS *et al.*, 2003; ÇEVİK *et al.*, 2005). *Pinctada radiata* had been first recorded in 1874 as *Meleagrina* sp. from Egypt

(MONTEROSATO DI, 1878) with the species seeming to have become well established in extent throughout the eastern Mediterranean (ZENETOS *et al.*, 2003) including Sicily (DE NATALE, 1982). Accidental occurrences have been recorded in France (ZIBROWIUS, 1979) and Italy (VIO & DE MIN, 1996). New data for the locality of *P. radiata* in the Adriatic Sea are provided in this study in which the species is reported for the first time in Croatian waters.

### MATERIAL AND METHODS

Benthic samplings were performed in the northern part of the Adriatic Sea, off Pula (Fig. 1), Croatia, by means of Van Veen grab at three stations (IKA 1: 44°21.792' N, 13°29.475' E; IKA 2: 44°21.824' N, 13°25.990' E and IKA 3: 44°21.815' N, 13°22.519' E), having depths of 59 m and silty-sand bottoms, on 22 April 2006 in order to determine the present status of macrofauna near pipeline construction in the

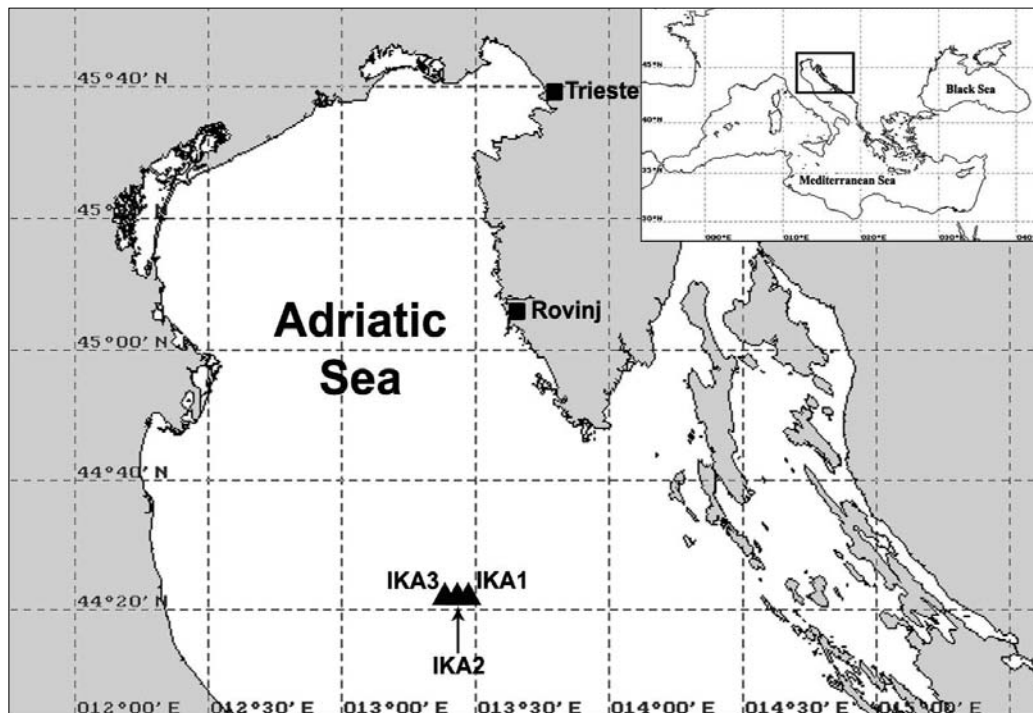


Fig. 1. Map of the study area showing the location of the three stations (IKA1, IKA2 and IKA3)

area. Four replicates were taken and the samples were washed through a 1 mm mesh size sieve, fixed with neutralized 4% sea-water solution of formaldehyde and subsequently preserved in 70% ethanol in the laboratory. The specimens were deposited in the reference collection of the Center for Marine Research, Rovinj (CMR) and the Museum of the Faculty of Fisheries, Ege University, Izmir (EFSM).

## RESULTS AND DISCUSSION

Within the frame of this study conducted at three stations in the northern part of the Adriatic Sea, two juvenile specimens of *P. radiata* (2.8 and 2.5 mm in shell length) were encountered. The species was only found at the IKA 1 station that had a depth of 59 m and silty-sand bottom. While *P. radiata* is most commonly found on sublittoral bottoms, from depths of 5 to 25 m (POUTIERS, 1998), it may be found down to depths of 190 m (GUIDICE, 1986).

*P. radiata* has a widespread distribution in the Indo-West Pacific including East Africa,

Madagascar, the Red Sea and the Persian Gulf, Melanesia and Hawaii, and as far north as Japan and as far south as northern Victoria (POUTIERS, 1998). The mode of introduction of *P. radiata* into the Mediterranean is twofold (ZENETOS *et al.*, 2003); its distribution implies that it has progressively penetrated through the Suez Canal but there is also documentation that it was intentionally imported for marine farming (SERBETIS, 1963). On the other hand accidental occurrences of *P. radiata* have been recorded in Toulon, France where the species was scraped off the ship hull of a French navy ship (ZIBROWIUS, 1979), and in Trieste, Italy (VIO & DE MIN, 1996) as live individuals attached to an oil platform originating in the Strait of Sicily. Furthermore, *P. radiata* have also been reported as epibionts on the loggerhead sea turtle *Caretta caretta* (Chelonia, Cheloniidae) and according to OLIVERIO *et al.* (1992), this record indicates the introduction of specimens to the Mediterranean Sea or, more easily, spreading in the basin, may be due in some cases to phoresy.

This is the second record of the species in the Adriatic Sea after VIO & DE MIN (1996) who reported the species in Trieste Bay which is about 90 nautical miles north of the sampling area of the present study. The presence of the species in the area could be result in marine transportation. The finding of juvenile animals suggests that the species is established in the

area. Further, this is also the first report of *P. radiata* along the Croatian coast.

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## O pojavi *Pinctada radiata* (Mollusca: Bivalvia: Pteriidae) u hrvatskim vodama Jadrana

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### SAŽETAK

Dva primjerka školjkaša *Pinctada radiata*, lesepsijskog migranta, su nađena prilikom bentoskog istraživanja u sjevernom Jadranu na dubini od 59 m na siltoznom pijesku, u travnju 2006. Ovo je novi nalaz spomenute vrste u hrvatskim vodama Jadrana.

**Ključne riječi:** *Pinctada radiata*, Jadransko more, Hrvatska, novi nalaz