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**On the establishment of two more alien mollusca (*Chama aspersa* Reeve, 1846 and *Chama asperella* Lamarck, 1819) in the eastern Mediterranean**

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**Abstract**

*The Indo-Pacific bivalvia Chama aspersa Reeve, 1846 and Chama asperella Lamarck, 1819 are recorded for the first time in Greek waters. These findings represent a considerable expansion in the eastern Mediterranean. Ship fouling is assumed as the most probable transportation means. However, natural dispersal via the Suez Canal is feasible as well.*

**Keywords:** Alien mollusca; *Chama aspersa*; *Chama asperella*; Greece.

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The family Chamidae is represented by seven species in the Mediterranean Sea (see CLEMAM website) including 3 aliens namely *Pseudochama corbieri* (Jonas 1846), *Chama pacifica Broderip* 1834 (ZENETOS *et al.*, 2004) and the recently published *Chama aspersa* Reeve 1846 (MIFSUD & OVALIS, 2007). A new alien species, *Chama asperella* Lamarck, 1819 was collected in 2003 from an off-shore gas production platform 27 m west of Ashqelon (MIENIS, 2004a) and was thus considered as questionable by ZENETOS *et al.* (2005a).

Up-to-date the only alien representative of the family in Greece was *Pseu-*

*dochama corbieri* (for details see ZENETOS *et al.*, 2005b). Recent research by free diving in several coastal localities of the south Aegean Sea has revealed the presence of two alien species of *Chama* namely *Chama aspersa* Reeve, 1846 and *Chama asperella* Lamarck, 1819. The specimens exhibit the same general morphology as described and figured in the literature (OLIVER, 1992). Representatives of both species are deposited in the shell collection of the Institute of Oceanography, of the Hellenic Centre for Marine Research.

*Chama aspersa* is a very common Indo-Pacific species. It was first recorded

in the Mediterranean by MIENIS (2004b) from three loose upper valves found on three different beaches between 2002 and 2004 along the coast of Israel. Later, MIENIS (2006) listed *Chama aspersa* as a well established species along the coast of Israel. Then it expanded its Mediterranean distribution northward to Turkey (Mersin Bay and Marmaris) where it was reported by MIFSUD & OVALIS (2007), on the basis of a few living specimens attached to rocks and to other bivalves such as *Spondylus gaederopus*. Presently, fifteen specimens of *Chama aspersa* were collected, from the rocky intertidal zone 2-3 m depth in Drosia Chalkidas, Evvoikos Gulf (approximately 38°21'N 23°55'E) by P. Ovalis in December 2007 (Fig. 1). The individuals collected ranged from 13 mm to 27 mm in height.

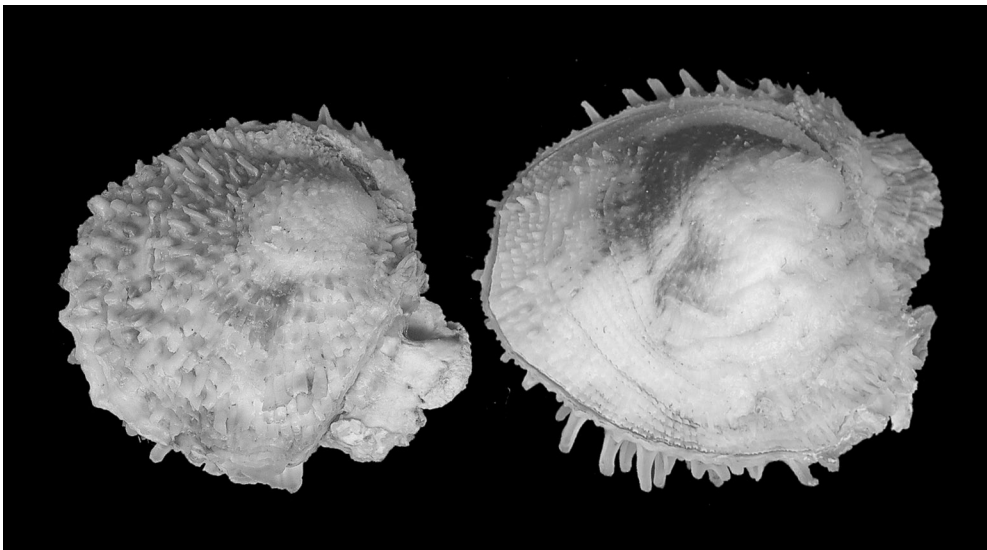
Six specimens of *Chama asperella* were collected from rocks at 4-6m depth in Flisvos marina, Saronikos Gulf (approximately 37°56'N 23°40'E) by P. Ovalis in September 2007 (Fig. 2). The individuals

collected ranged from 12.5-20 mm in height.

Later visits in the same areas revealed that the populations of both species are sustained and expanding.

It is presumed that both species have been transported via shipping, since the areas of their occurrence are in the vicinity of big ports (Mersin, Marmaris, Peiraias, Chalkida). However, both species are of Indo-Pacific origin, occurring in the Red Sea and exhibiting the distribution pattern of Lessepsian immigrants. In addition, *Chama asperella* was recently found as north as Abu Sultan, the Great Bitter Lake (HOFFMAN *et al.*, 2006). Thus, natural expansion of their Red Sea populations into the Mediterranean following the common route of Lessepsian immigrants cannot be ruled out.

The present findings increase the number of alien mollusca in Greek waters from 33 (ZENETOS *et al.*, 2005b; PANCUCCI-PAPADOPOULOU *et al.*,



**Fig. 1:** *Chama aspersa* (size: 20mm). Photo: P. OVALIS.

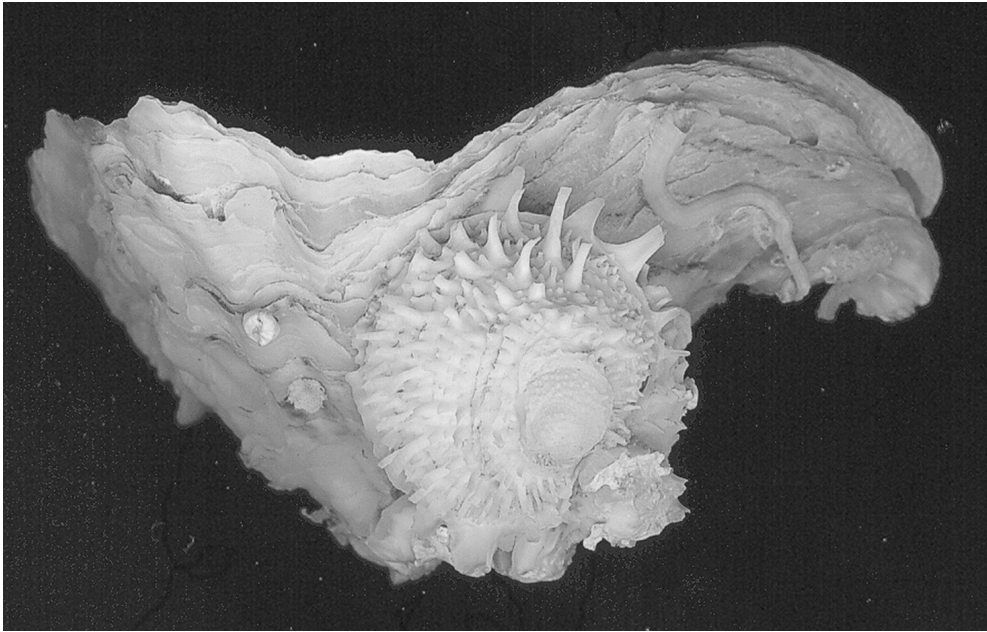


Fig. 2: *Chama asperella* (size 15mm). Photo: P. OVALIS.

2005; ELNAIS website) to 35. It is speculated that the increasing rate of introductions and establishment of new aliens may be due to Mediterranean waters becoming warmer.

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