

Alien amphipods on the Turkish Coasts

Anfípodos invasores de las costas de Turquía

K. BAKIR¹, M. SEZGIN^{2*} & T. KATAĞAN¹

¹ Ege University, Fisheries Faculty, Marine Biology and Ecology Department, TR35100 Bornova, Izmir, Turkey.

² Sinop University, Fisheries Faculty, Marine Biology and Ecology Department, TR57000 Sinop, Turkey.

* Corresponding author: msezgin@sinop.edu.tr

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ABSTRACT

Alien species compose a small component of the Mediterranean amphipod fauna. Until now 10 exotic amphipods are reported in the Mediterranean Sea. 5 of them known from the Turkish coasts. *Maera hamigera* and *Stenothoe gallensis* is known from Aegean and Mediterranean coasts, *Elasmopus pecteniscrus* and *Gammaropsis togoensis* reported from the Mediterranean coast among the photophilic algae in 2007 and an Atlantic species *Parhyale explorator* determined on gravel and mussel beds in 2008. The individuals of this alien species make up a small percentage of the total fauna where they found but established populations are in stable condition.

RESUMEN

Las especies invasoras constituyen un componente minoritario de la fauna de anfípodos del Mediterráneo. Hasta el momento, se han citado 10 anfípodos exóticos en el Mediterráneo, 5 de ellos conocidos en las costas turcas. *Maera hamigera* y *Stenothoe gallensis* se han encontrado en las costas mediterráneas y del mar Egeo, *Elasmopus pecteniscrus* y *Gammaropsis togoensis* se han citado en el Mediterráneo entre algas fotófilas en 2007 y la especie atlántica *Parhyale*

explorator ha sido encontrada en grava y mejillones en 2008. Los individuos de estas especies constituyen un pequeño porcentaje del total de la fauna pero sus poblaciones son estables.

INTRODUCTION

Globalization, increased ship traffic and aquaculture activities facilitated the distribution of the larvae and adult individuals worldwide. 558 metazoan species identified as alien in the Mediterranean Sea in 2008. In this species first and second place are taken by Mollusca and Arthropoda respectively (Galil, 2008). Although amphipods are a large order in the Arthropoda, the exotic components consist of a small number of species. Reproductive biology of the amphipods plays a major role in their distribution. Because amphipods have lower dispersion ability as compared with other crustacean species, which have the planktonic larval stages. The number of the exotic amphipod species remain very low (10 species) and endemic species is high (180 species) in the Mediterranean Sea (Bellan-Santini & Ruffo, 2003; Bakir *et al.*, 2008).

RESULTS AND DISCUSSION

Up to today, five alien amphipods (*Gammaropsis togoensis* (Schellenberg, 1925), *Maera hamigera* Haswell, 1880, *Stenothoe gallensis* Walker, 1904, *Elasmopus pecteniscrus* (Bate, 1862), *Parhyale explorator* Arresti, 1989) have been reported from the Turkish coasts (Table I).

Table I.—Synoptic table that showing locality, coordinates and founding date of each species.
Tabla I.—Tabla resumen de la localidad, coordenadas y datos de recolección de cada especie.

Species	Locality	Geographic coordinates	Date of founding
<i>Gammaropsis togoensis</i>	Iskenderun Bay	36°35'13"N 36°11'48"E	2005
<i>Maera hamigera</i>	Bodrum	37°01'46"N 27°33'39"E	1976
<i>Stenothoe gallensis</i>	Fethiye	36°62'03"N 29°09'03"E	1976
<i>Elasmopus pecteniscrus</i>	Iskenderun Bay	36°35'13" N 36°11'48" E	2005
<i>Parhyale explorator</i>	Iskenderun Bay	36°45'40" N 36°11'58" E	2005

Gammaropsis togoensis has been reported in mediolittoral among *Padina pavonica*, *Jania rubens*, *Corallina mediterranea*, *Brachidontes pharaonis* and among the fouling organisms on the pile of piers and tires in the harbours by Bakır (2010) only in the Mediterranean coasts of Turkey (İskenderun Bay) (Fig. 1).



Fig. 1.—Distribution of *Gammaropsis togoensis* along the Turkish coast.

Fig. 1.—Distribución de *Gammaropsis togoensis* en la costa de Turquía.

Maera hamigera has been found at 0-150 m depths among *Cystoseira* sp., *Padina pavonica*, *Bryopsis*, *Halimeda*, *Caulerpa*, madreporarians, *Mytilus galloprovincialis* (Kocatas & Katagan, 1978; Bellan-Santini *et al.*, 1982; Cinar *et al.*, 2008) in Aegean (Bodrum) and Mediterranean coasts (Manavgat) of Turkey (Fig. 2).

Stenothoe gallensis has been recorded in the upper littoral in algae (*Jania rubens*, *Cystoseira* sp., *Ulva* sp., *Sargassum* sp.) *Brachidontes pharaonis*, *Mytilus galloprovincialis* with good water movement and in the fouling organisms on the pile of piers and tires; rarely in depths greater than 4m (Bellan-Santini *et al.*, 1993; Bakır, 2010; Cinar *et al.*, 2008; Kocatas & Katagan, 1978) in Aegean (Karaburun-İzmir) and Mediterranean coasts (Fethiye, Antalya, İskenderun Bay) of Turkey (Fig. 3).

Elasmopus pecteniscrus has been found 0-50 m, among *Padina pavonica*, *Cystoseira* sp., *Posidonia oceanica*, *Brachidontes pharaonis* or shell bottom



Fig. 2.—Distribution of *Maera hamigera* along the Turkish coast.

Fig. 2.—Distribución de *Maera hamigera* en la costa de Turquía.



Fig. 3.—Distribution of *Stenothoe gallensis* along the Turkish coast.

Fig. 3.—Distribución de *Stenothoe gallensis* en la costa de Turquía.

(Bellan-Santini *et al.*, 1982; Bakir, 2010) only in the Mediterranean coasts (İskenderun Bay, Mersin, Antalya) of Turkey (Fig. 4).

Parhyale explorator has been reported in mediolittoral on the sand and gravel of the semi closed beach and among *Brachidontes pharaonis* (Ar-esti, 1989; Bakir, 2010) only in the Mediterranean coasts (İskenderun Bay, Antalya, Kaş-Fethiye) of Turkey (Fig. 5).



Fig. 4.—Distribution of *Elasmopus pecteniscrus* along the Turkish coast.

Fig. 4.—Distribución de *Elasmopus pecteniscrus* en la costa de Turquía.



Fig. 5.—Distribution of *Parhyale explorator* along the Turkish coast.

Fig. 5.—Distribución de *Parhyale explorator* en la costa de Turquía.

In the future, because of the Turkey coasts have a long distance and containing various biotopes, with more comprehensive studies should be done especially in the Mediterranean coast of Turkey, new exotic amphipod species can be determined.

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