FIRST RECORD OF A SETTLED STOMATOPOD *PLATYSQUILLA EUSEBIA* IN THE NORTH SEA (MALACOSTRACA: STOMATOPODA)

Wilma Lewis & Adriaan Gittenberger

This paper describes the discovery of a settled juvenile specimen of the stomatopod *Platysquilla eusebia* on the Dutch part of the Dogger Bank in the central North Sea. This is the northernmost record in Europe. The species is native to the Mediterranean and to the Atlantic coast from Portugal up to France. Further investigations have to show if the species already forms populations this far north. As the planktonic stages of *P. eusebia* have already been recorded in prior years, the establishment of the species should not be a problem, providing the circumstances are favourable.

INTRODUCTION

Imares regularly conducts benthic surveys in the southern North Sea. Most specimens that are found in the samples taken during these surveys, are identified at the Imares laboratory after the survey. If necessary specialists were consulted. In this paper we describe the discovery of a stomatopod during a survey in 2005.

METHODS

During a habitat mapping expedition in the Southern Bight of the North Sea in 2005, 15 samples were taken with a Hamon grab (sampling surface 0.09 m^2, depth >10 cm) at an average depth of 42 meter. On board each sample was washed on a 1 mm mesh sieve and stored in a container in a 4% formaline/seawater solution. In the laboratory, the samples were washed again on a 0.5 mm mesh sieve, sorted, analysed and stored in 70% ethanol. During the analysis of a sample taken on the Dutch Dogger Bank (lat. 55.402943, long. 3.811921) (fig. 2), a stomatopod was found (fig. 1). It had not been encountered during any prior Imares surveys and could not be identified with standard taxonomical literature for species that occur in The Netherlands. Therefore the help of stomatopod specialist Jessica Taylor of Unicomarine and Shane Ahyong, the taxonomic editor of Stomatopods for WORMS (World Register of Marine Species: www.marinespecies.org), was

Figure 1. The stomatopod *Platysquilla eusebia*. Photo Wilma Lewis.
Figuur 1. De bidsprinkhaankreeft *Platysquilla eusebia*. Foto Wilma Lewis.

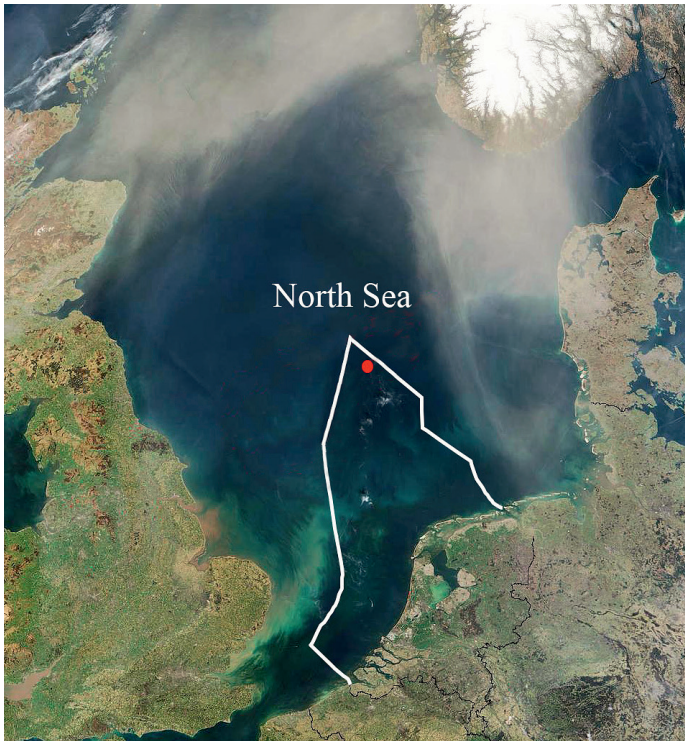


Figure 2. The Dutch Continental Shelf (white line) indicating the location (red dot) where *Platysquilla eusebia* was found.
Figuur 2. Het Nederlandse continentale gedeelte van de Noordzee (witte lijn) waarop de locatie (rode stip) staat aangegeven waar *Platysquilla eusebia* werd aangetroffen.

called in. The specimen is stored in the Imares Benthos Reference Collection at Den Helder, the Netherlands.

RESULTS

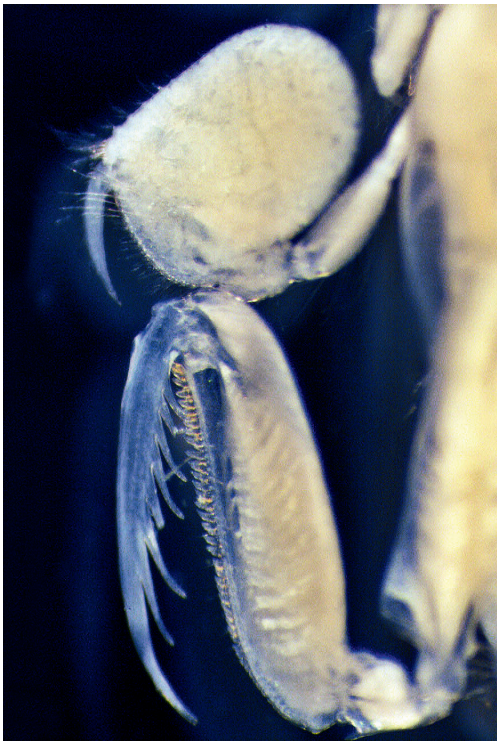
Jessica Taylor identified the juvenile stomatopod as *Platysquilla eusebia* (Risso, 1816). It is the first record of a settled specimen in the North Sea (pers. comm. Shane Ahyong).

It was found in the central part of the North Sea on the Dogger Bank. The substrate at the site consisted of fine sand with a relatively low mud and organic matter content.
The median grain size (D50) was 214.79 µm and only 0.3% of the sediment had a grain size of < 63 µm. The local community was relatively rich and was characterized mainly by the amphipod *Bathyporeia elegans* (Watkin, 1938) and the polychaete *Spiophanes bombyx* (Claparède, 1870).

Larvae of *P. eusebia* are up to 15 mm in length. The specimen that was recorded measured only 16 mm in length and was therefore identified as a juvenile. Adults are known to have a maximum length of 70 mm. The specimen furthermore had eight spines on the dactylus of the raptorial claw (fig. 3), slightly less than the 12-15 of the adult. Diagnostic characters that confirm the identification of *P. eusebia* are the telson with its rounded, posterior edge that is adorned with a series of small spines (fig. 4), and the sixth abdominal segment that does not have any spines on its dorsal posterior edge, but does have two spines on its ventral posterior edge (Mauchline 1984).

DISCUSSION

The recorded stomatopod probably lived in a burrow in the sand of the Dogger Bank, where it hunted for small animals like shrimps and worms. To do this, it uses its raptorial claws that are covered with sharp spines to spear unexpected



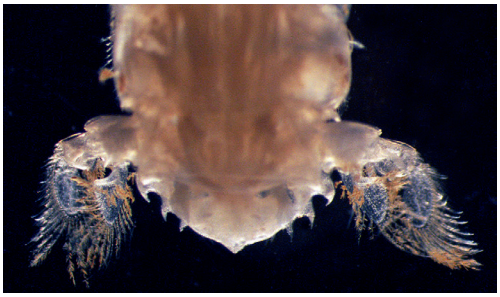


Figure 3. First two appendages of *Platysquilla eusebia* including the raptorial claw (below) covered with spines with which it 'spears' its prey.
Figuur 3. Voorste twee klauwen van *Platysquilla eusebia*. De dieren gebruiken de vangklauw (onderste) met vele lange stekels om prooien te doorboren.

Figure 4. Telson of *Platysquilla eusebia*.
Figuur 4. Telson van *Platysquilla eusebia*.

prey that happen to wander along its burrow. The present record in 2005 is the first record of a settled specimen in the North Sea and thereby the northernmost record in Europe. As no other specimens have been recorded during the surveys in the North Sea since 2005, it remains unclear whether a population of the species has established itself. At present many changes occur in marine benthic communities because of climate change and human activies like ballast water discharge. Recently new tools like DNA profiling contribute to the discovery of new species in the North Sea.

In the case of the stomatopod *P. eusebia*, the record of the juvenile proves that specimens of this species can settle in the sediments of the North Sea. The rise of water temperature over the years may have made this possible. When water temperatures keep on rising, this southern European species may therefore further extend its range north into the North Sea. The establishment of the species is not hampered by the absence of planktonic larvae. These appear to be widespread in northern areas. They occur in British waters up to western Ireland where also three nearly adult specimens were recorded (Ceidigh 1970), but also in the southern North Sea, where they are found since the 1960's, for example off the Dutch coast in 1966 at the lightship Texel (Baan & Holthuis 1966).

ACKNOWLEDGEMENTS

We would like to thank Jessica Taylor and Shane Ahyong for their invaluable help with the identification of the stomatopod.

LITERATURE

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SAMENVATTING

Eerste waarneming van een gevestigd exemplaar van de bidsprinkhaankreeft *Platysquilla eusebia* in the Noordzee (Malacostraca: Stomatopoda)

Dit artikel beschrijft de eerste vondst van een gevestigd exemplaar van de bidsprinkhaankreeft *Platysquilla eusebia* op de Doggersbank, op het Nederlandse continentale gedeelte van de Noordzee. Het betreft een soort die inheems is voor de Middellandse Zee en de Atlantische kust vanaf Portugal tot en met Frankrijk. De planktonische stadia van *P. eusebia* lijken wijd verbreid in de Noordzee en dit vormt dus geen belemmering voor vestiging van de soort. Nader onderzoek zal moeten uitwijzen in hoeverre *P. eusebia* al populaties vormt in de Noordzee.

W. Lewis
Imares, Wageningen UR, Institute for Marine Resources and Ecosystem Studies,
Department Experimental Ecology
P.O. Box 57
1780 AB Den Helder, The Netherlands
wilma.lewis@quicknet.nl

A. Gittenberger
Naturalis Biodiversity Center
Institute of Biology Leiden (IBL) & Institute of Environmental Sciences (CML), Leiden University
ANEMOON Foundation
GiMaRis
J.H. Oortweg 21
NL-2333 CH Leiden, The Netherlands
Gittenberger@ GiMaRis.com