

Evadne anonyx G. O. Sars,
1897 – the first record
of this Ponto-Caspian
cladoceran in the Gulf of
Gdańsk (Baltic Sea)*

doi:10.5697/oc.56-1.141
OCEANOLOGIA, 56 (1), 2014.
pp. 141–150.

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KEYWORDS

Evadne anonyx
Non-indigenous species
Gulf of Gdańsk
Baltic Sea

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Received 24 April 2013, revised 2 September 2013, accepted 9 October 2013.

Abstract

Evadne anonyx, a new invasive Ponto-Caspian species, was detected for the first time in the Gulf of Gdańsk in the summer of 2006. Seven years probably elapsed from the first record of *E. anonyx* in the Baltic Sea (Gulf of Finland) to the first one in the Gulf of Gdańsk. Although the species was found at 10 out of 13 stations in rather low densities (not exceeding 6 indiv. m⁻³), all the developmental stages of *E. anonyx* were present (juveniles as well as adults – parthenogenetic females, gamogenetic females and males) in the plankton material investigated.

1. Introduction

The introduction of alien species intensified during the second half of the 20th century. As a consequence, biological invasions on a global

* This research was conducted within the framework of project No. 4739/B/P01/2010/39 from the Polish National Sciences Centre.

scale are currently one of the greatest threats to terrestrial and aquatic ecosystems. These phenomena are dynamic in both time and space (Drake 2009).

Introductions of allochthonous species into the Baltic Sea have been observed for many years (Krylov et al. 1999, Laine et al. 2006, Orlova et al. 2006, Rodionova & Panov 2006, Antsulevich 2007, Bielecka & Mudrak 2010, Jaspers et al. 2011, Zaiko et al. 2011). Within the zooplankton, three new invasive species of Cladocera and one ctenophoran have been recorded in the last 25 years (Bielecka et al. 2000, Rodionova et al. 2005, Rodionova & Panov 2006, Janas & Zgrundo 2007). Cladocera make up a significant part of the Baltic zooplankton both in numbers and in biomass, especially in summer. Since the early 1990s, the list of cladocerans has been extended by the Ponto-Caspian crustaceans *Cercopagis pengoi*, *Cornigerius maeoticus* and *Evadne anonyx* (Ojaveer & Lumberg 1995, Krylov et al. 1999, Panov et al. 1999, Rodionova et al. 2005, Rodionova & Panov 2006). In the Polish coastal zone, and that includes the Gulf of Gdańsk, only *C. pengoi* has been recorded so far (Bielecka et al. 2000, Duriš et al. 2000, Bielecka et al. 2005, Olszewska 2006, Bielecka & Mudrak 2010).

Evadne anonyx is an endemic species from the Ponto-Caspian basin (Mordukhai-Boltovskoi 1995). Its author classified it among the Caspian Polyphemoidae, which make up the Podonidae group. This marine species, originating from the tertiary period, occurs in shallow water plankton (Mordukhai-Boltovskoi 1995). The environmental preferences of *E. anonyx* from the Caspian Sea were described by Aladin (1995), who stated that the salinity and temperature tolerance ranges for *E. anonyx* were from 4 to as much as 30 PSU and from 11.4 to 26.4°C respectively. That author found that this species, which used to be more widespread, was forced to abandon the Aral Sea because of increasing salinity, and the Sea of Azov and Black Sea because of growing contamination.

The first published report of *E. anonyx* in the Baltic Sea, from the Gulf of Finland, related to August 2004 (Litvinchuk 2005). According to Rodionova & Panov (2006), however, the first specimens of this species were found in the Primorsk oil terminal area in the Gulf of Finland four years earlier. This information was again corrected, this time by Pöllupüü et al. (2008), who found that *E. anonyx* had been observed in the central Gulf of Finland (Tallinn Bay) as early as 1999.

The aim of the present work was to report the first signs of the invasion of the Gulf of Gdańsk by *E. anonyx* G. O. Sars 1897 and to describe the extent of its range there in 2006.

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