

***Pontogammarus robustoides* (Sars, 1894), a new non-indigenous amphipod in the Netherlands (Crustacea: Amphipoda)**

Sebastian Moedt and Ton van Haaren

With 5 figures

Keywords: Pontogammaru, Amphipoda, Crustacea, neozoans, Dordrecht, the Netherlands, non-indigenous, first record, faunistics

Schlagwörter: Pontogammarus, Amphipoda, Crustacea, Neozoen, Dordrecht, Niederlande, Erstfund, Faunistik

On June 20, 2017 a single adult male of the non-indigenous Amphipod *Pontogammarus robustoides* was found near Dordrecht in a closed creek. This is the first record of this species in The Netherlands. The previously most western record was from the Mittellandkanal at Rügen, Germany from 1998 (Martens et al. 1999).

1 Introduction

The Netherlands is subject to many non-indigenous species from the Pont-Caspian area. Since the opening of the Main-Danube canal in September 1992, several species reached the Rhine-meuse delta: *Hypania invalida* (Polychaeta), *Jaera sarsi* (Isopoda), *Limnomysis benedeni* and *Hemimysis anomala* (Mysida) and many Amphipoda species like *Chelicorophium curvispinum*, *Dikerogammarus haemobaphes*, *D. villosus*, *Echinogammarus ischnus* and recently *Obesogammarus obesus* (Boonstra et al 2016). Here we report on another species of Amphipoda for the Netherlands, native for the Ponto-caspian region.

2 Material and location

De Viersprong, de Elzen, Eiland van Dordrecht, Zuid-Holland province, Lat 51.760 Lon 4.690; 51°45'36"N, 4°41'23"E (Fig. 1); 20-07-2017; n=1 ♂, appr. 1m BSL, leg. det. S. Moedt.

In 2017, 150 macro-invertebrate samples were taken using a pond net in the province of South-Holland (in Dutch: Zuid-Holland) as a part of a monitoring project commissioned by the water authority board 'Hollandse Delta'. The results are being used for water quality assessments following the Water framework directive. On 20-06-2017 a sample was taken in the waterbody named 'De Viersprong' in the area 'de Elzen', just south of the city of Dordrecht. A pumping station is separating this waterbody from the Dordtse Biesbosch. 'De Viersprong' is a stagnant creek of about 85 m wide and of shallow depth. At the sampling site the bank is slightly sloping and has a rich shoreline vegetation, submerse vegetation and *Nuphar lutea*.

3 Identification

P. robustoides can easily be recognized using the keys in Carausu (1955), van Haaren (2015) and Eggers & Martens (2001) (Fig.2).

The antennae are short and sturdy (Fig. 3) and the third segment of the second antenna (AII) has a typical bulge on its ventral side. Furthermore, the inner branch of the third uropod is very short and is less than 30 % of the outer branch, which is distinctly longer than the pedunculus. On the second urosome segment there is a transversal row of 6 spines. The basis of pereopod 7 has a large and rounded postero-distal lobe and a fringe of long hairs

on its posterior edge as well as a fringe of hairs on the middle of the basis (Fig. 4). In *Dikerogammarus haemobaphes* and *Obesogammarus crassus* this hair fringe on the posterior edge is missing. *Obesogammarus obesus* has a shorter outer branch of the third uropod, being about as long as the pedunculus.



Fig. 1: De viersprong on the isle of Dordrecht (North side, photographed in a westerly direction)



Fig. 2: *Pontogammarus robustoides*. Habitus



Fig. 3: Anterior part of *Pontogammarus robustoides*, showing the short and sturdy antenna and the bulge at the ventral side of the third segment of All

Fig. 4: Detail of pereopode 7 with distinct rounded postero-distal lobe and a posterior hair fringe

4 Distribution (Fig. 5)

The original distribution is in the large rivers in the Ponto-Caspian region (e.g. Volga, Don, Dnjepr, Dnjestr and Danube), and several fresh and brackish lakes and lagoons in the Black Sea area (Grabowski et al. 2007). Over 1960-1961, several amphipod and mysid shrimp species from the Ponto-Caspian area were introduced into the Kaunas reservoir (along the Nemunas river) in Lithuania, to enhance fish production. With the same purpose, specimens from the reservoir were transported to Northern Lithuania, Latvia (in 1964), Estonia and the St. Petersburg area. (Grudule et al. 2007).



Fig. 5: Range extension of *P. robustoides* from the Ponto-Caspian region and eastern Europe. The shaded area roughly reflects its known distribution previous to the introductions into the Baltic region

From this area, the species was able to spread in western and southern direction. In the 1980's the species reached the Oder estuary in western Poland and in 1994 the Peene river in Germany (Jazdzewska & Jazdzewski 2008). Soon after that, the species was found in several water courses in Mecklenburg-Vorpommern (1996-1997, 2014-2015) and in 1998 also the Mittellandkanal (Zettler 1998, Martens et al. 1999, Messner & Zettler 2016). We could not find any report in western Europe since the one in 1998, so this record from Dordrecht is the first in western Europe since 20 years. It is impossible to tell how this species was able to reach this location in the Biesbosch area. One can speculate how the species extended his range from the Mittellandkanal (via Ems-Vechtcanal?) but as the distance is too big and intermediate observations are missing.

Acknowledgments

We would like to thank Michael Zettler for his confirmation of the species identification, Aquon and the water authority board 'Hollandse Delta' for their permission to use this record.

References

- Boonstra, H, R. Wiggers & M. Swarte (2016): First record of the Ponto-Caspian amphipod *Obesogammarus obesus* (Sars, 1894) (Amphipoda: Pontogammaridae) from the Netherlands.- *BioInvasions Records* 5(3): 155-158, Helsinki
- Carausu, S., E. Dobreanu & C. Manolache (1955): Crustacea: Amphipoda forme salmastre si de apa dulce.- *Fauna republicii populare romine volumul 4, fascicula 4*, 408 pp., Bucuresti
- Eggers, T.O. & A. Martens, A. (2001): Bestimmungsschlüssel der Süßwasser-Amphipoda (Crustacea) Deutschlands.- *Lauterbornia* 42: 1-68, Dinkelscherben
- Grabowski, M., K. Jazdzewski & A. Konopacka (2007): Alien Crustacea in Polish waters – Amphipoda.- *Aquatic Invasions* 2(1):25-38, St. Petersburg
- Grudule, N., E. Parele & K. Arbaciauskas 2007. Distribution of Ponto-Caspian Amphipod *Pontogammarus robustoides* in Latvian waters. *Acta Zoologica Lituanica* 17(1): 28-32, Vilnius
- Haaren van, T. (2015): Amphipoda van Nederlandse oppervlakte- en grondwateren. *Macrofaunanieuws* 121: 2-17
- Jazdzewska, A. & K. Jazdzewski (2008): *Pontogammarus robustoides* (G. O. Sars, 1894) (Crustacea, Amphipoda), a new Pont-Caspian invader in great Masurian lakes (NE Poland).- *Fragmenta Faunistica* 51(1): 1-7, Warszawa
- Martens, A., T. O. Eggers & K. Grabow (1999): Erste Funde von *Pontogammarus robustoides* (Sars) im Mittellandkanal (Crustacea: Amphipoda).- *Lauterbornia* 35: 39-42, Dinkelscherben
- Messner, U. & M. L. Zettler 2016. Die aktuelle Verbreitung von Amphipoda (Crustacea) im Verlauf der Oberen Havel.- *Lauterbornia* 81: 57-69, Dinkelscherben
- Zettler, M. (1998): Zur Verbreitung der Malacostraca (Crustacea) in den Binnen- und Küstengewässern von Mecklenburg-Vorpommern.- *Lauterbornia* 32: 49-65, Dinkelscherben

Address of the authors: Sebastiaan Moedt and Ton van Haaren, Eurofins AquaSense, H.J.E. Wenckebachweg 120, 1114 AD Amsterdam-Duivendrecht, Nederland
email: SebastiaanMoedt@eurofins.com, TonvanHaaren@eurofins.com

Received: 2018-03-08

Accepted: 2018-04-26