
Communications

Hemimysis anomala
G. O. Sars, 1907
(Crustacea, Mysidacea)
– first record in the
Gulf of Gdańsk*

OCEANOLOGIA, 47 (3), 2005.
pp. 405–408.

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Oceanology PAS.

KEYWORDS

Hemimysis anomala
Non-indigenous species
Southern Baltic

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Received 19 May 2005, revised 1 September 2005, accepted 5 September 2005.

Abstract

The present paper reports on the occurrence of *Hemimysis anomala* G. O. Sars, 1907 (Crustacea, Mysidacea) in the coastal waters of the Gulf of Gdańsk in the years 2002–2005.

Ponto-Caspian species make up a sizeable group among the non-native species in the Baltic Sea (Leppäkoski et al. 2002). Some of them were deliberately introduced as fish-food into freshwater basins in the former USSR, from where they were probably able to enter the Baltic. One such species is *Hemimysis anomala* G. O. Sars, 1907 (Photo 1), which is endemic to the Sea of Azov – Black Sea basin. Adults reach a length of 8.0–10.0 mm in the Black Sea and 6.7–8.5 mm in the Sea of Azov and in fresh waters (Bacescu 1969).

* The project was carried out within the framework of the MarBEF Network of Excellence ‘Marine Biodiversity and Ecosystem Functioning’ which is funded by the European Community’s Sixth Framework Programme (contract No GOCE-CT-2003-505446). This paper is contribution number MPS-05017 of MarBEF.

The complete text of the paper is available at <http://www.iopan.gda.pl/oceanologia/>



Photo 1. *Hemimysis anomala* from the Gulf of Gdańsk, September 2004 (length 4 mm)

During daylight hours in September 2004 and February 2005, a species of mysid shrimp species was sampled in the coastal zone of the Gulf of Gdańsk by a diver using a 1 mm mesh hand net. In September 2004 the water temperature was 17°C and the salinity 6.7 PSU, in February 2005 the respective parameters were 2°C and 7.5 PSU. A total of 80 individuals were collected. The mysid shrimps were identified as *H. anomala* by the following features: the body was ivory in colour or translucent with characteristic red pigment spots (Bacescu 1969) (Photo 1). The characteristic, blunt-ended telson has 13–17 lateral spines on either side, the flat apex of the telson has 12–15 apical teeth, and the endouropod has 6–7 spines. The large eyes are spherical, the antennal scales are of an elongated oval shape, more than half the outer margin is covered with feathery bristles; there are no spines.

Although *H. anomala* was first identified in the Gulf of Gdańsk in 2004, analysis of archival films indicates that this species was already present there in the spring of 2002. In 2003–2004 *H. anomala* was sighted in shoals of several hundred individuals at four localities at depths from 2 to 7 m (Fig. 1). Interestingly, these animals inhabit the same sites in the Gulf of Gdańsk and over the past two years have always been recorded in the same localities. During the daytime these animals were observed to remain in shoals, with individual animals moving around within the shoal; on reaching its edge, they turned around rapidly and swam back towards the centre.

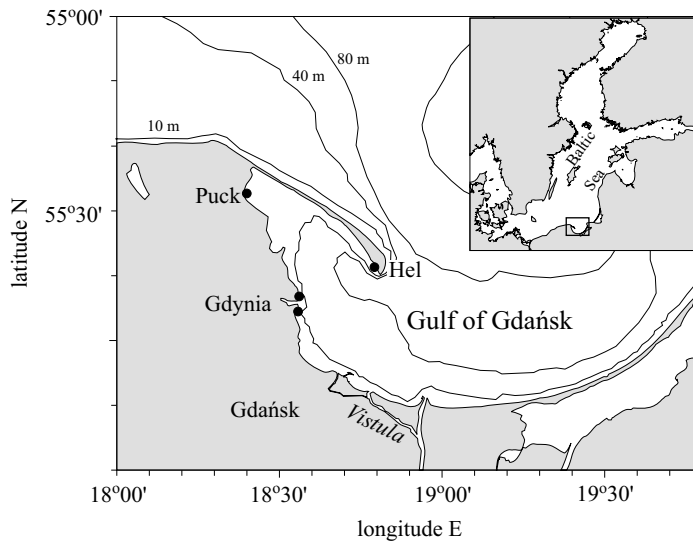


Fig. 1. Distribution of *Hemimysis anomala* in the Gulf of Gdańsk in the years 2002–2005

The distribution of *H. anomala* in the Baltic is poorly understood – it prefers a hard substrate and keeps well hidden during the day. This mysid was first recorded in the Curonian Lagoon in 1962 (Gasiunas 1964). It was also sighted off the coasts of Finland in 1992 (Salemaa & Hietalahti 1993) and off Sweden in 1995 and 2003 (Kautsky 1996, Lundberg & Svensson 2004). In 2002 it was found in the Odra Estuary (Poland) (P. Gruszka, personal communication), where it had probably arrived via rivers and canals. It will have spread into the inland waters of the Netherlands and Germany by the same means (Ketelaars et al. 1999, Nehring 2002).

A nekto-benthic invertebrate, it inhabits rocky areas in the Black Sea and the Sea of Azov as well as clayey hollows in the lower reaches of the river Don. During the daytime *H. anomala* is a bottom-haunting creature but in the evening it rises to the pelagic zone (Ketelaars et al. 1999). In the Gulf of Gdańsk *H. anomala* lives in hollows among stones, boulders or under peat overhangs (Puck).

Thanks to certain characteristic features, *H. anomala* is readily able to colonise new waters. A euryhaline organism, with a salinity tolerance ranging from 0.5 to 18 PSU (Bacescu 1969), it is a voracious predator and an omnivorous feeder (Ketelaars et al. 1999). This mysid shrimp is thought to be a likely future immigrant to other brackish waters in Europe and North America (Ricciardi & Rasmussen 1998, Verslycke et al. 2000).

References

- Bacescu M., 1969, *Order Mysidacea*, [in:] *Opredelitel fauny Chernogo i Azovskogo morey (Key to Black Sea and Sea of Azov fauna)*, Nauk. Dumka, Kiyev, 363–381, (in Russian).
- Gasiunas I., 1964, *Acclimatisation of forage crustaceans in the Kaunas waterpower plant reservoir and possibility of their migration into other waters of Lithuania*, Trudy Akad. Nauk Litov. SSR Ser. B 1 (30), 79–85, (in Russian).
- Kautsky H., 1996, *Vegetationsklädda bottnar*, [in:] *Östersjö '95. Årsrapport från den marina miljöövervakningen. Jun. 1996*, Stockholms Marina Forskningscentrum, Stockholms Univ., 29–31.
- Ketelaars H. A. M., Lambregts-van de Clundert F. E., Carpentier C. J., Wagenvoort A. J., Hoogenboezem W., 1999, *Ecological effects of the mass occurrence of the Ponto-Caspian invader, Hemimysis anomala G. O. Sars, 1907 (Crustacea: Mysidacea), in a freshwater storage reservoir in the Netherlands, with notes on the autoecology and new records*, Hydrobiologia, 394 (1), 233–248.
- Leppäkoski E., Gollasch S., Gruszka P., Ojaveer H., Olenin S., Panov V., 2002, *The Baltic: a sea of invaders*, Can. J. Fish. Aquat. Sci., 59 (7), 1175–1188.
- Lundberg S., Svensson J. E., 2004, *Röd immigrant från öster*, Fauna & Flora, 99 (1), 38–40.
- Nehring S., 2002, *Biological invasions into German waters: an evaluation of the importance of different human-mediated vectors for nonindigenous macrozoobenthic species*, [in:] *Invasive aquatic species of Europe. Distribution impacts and management*, E. Leppäkoski, S. Gollasch & S. Olenin (eds.), Kluwer Acad. Publ., Dordrecht, 373–383.
- Ricciardi A., Rasmussen J. B., 1998, *Predicting the identity and impact of future biological invaders: a priority for aquatic resource management*, Can. J. Fish. Aquat. Sci., 55 (7), 1759–1765.
- Salemaa H., Hietalahti V., 1993, *Hemimysis anomala G. O. Sars (Crustacea: Mysidacea) – Immigration of a Pontocaspian mysid into the Baltic Sea*, Ann. Zool. Fenn., 30 (4), 271–276.
- Verslycke T., Janssen C., Lock K., Mees J., 2000, *First occurrence of the Pontocaspian invader: Hemimysis anomala (Sars, 1907) in Belgium (Crustacea: Mysidacea)*, Belg. J. Zool., 130 (2), 157–158.