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NEW RECORD OF *RANGIA CUNEATA* (MOLLUSCA: BIVALVIA: MACTRIDAE) ON SOUTHERN COAST OF BALTIC SEA (N POLAND)

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Abstract.
In February 2021 a valve of Rangia cuneata *– a clam native to North America, was found in a new location on the Polish coast in Ustka Bay. After first records of this clam in Europe in 2005 in Belgium and then in 2010 in the Baltic Sea (Russian part of the Vistula Lagoon), an increasing number of new observations have been reported since. This indicates an effective dispersal of this alien species in the Baltic waters.*

Key words: Rangia cuneata; *alien species; Baltic coast; Poland; new record*

Alien species have posed many problems in recent decades, especially in nature conservation, and it affects almost all biomes, including marine and freshwater ecosystems (Bonk et al. 2018). Recently, we have been able to observe the occurrence and spread of a new clam species in the Baltic Sea – Atlantic rangia *Rangia cuneata*. This clam is native to the subtropical climate of the Gulf of Mexico with brackish waters of 0-18 PSU salinity, found in estuaries, lagoons and harbours (Piechocki & Wawrzyniak-Wydrowska 2016; Faillettaz et al. 2020). It lives in shallow places (< 6m) on sandy, sandy-silty, silty and loamy seabed (Piechocki & Wawrzyniak-Wydrowska 2016). This bivalve was first recorded in Europe in 2005 in Antwerp, Belgium (Verween et al. 2006). Until today the species has also been reported in other coastal regions of Europe (Faillettaz et al. 2020). It spreads also in the Baltic Sea – first recorded in the Russian part of the Vistula Lagoon (the southern Baltic Sea) in 2010 (Ezhova 2012), where it has established a functioning population (Rudinskaya & Gusev 2012; Warzocha et al. 2016). In 2011 it was detected in the Polish part of the Vistula Lagoon (Warzocha & Drgas 2013). The number of new records in the Baltic Sea continues to rise (e.g. Bock et al. 2015; Möller & Kotta 2017). Since 2014, it has also been recorded on the Polish coast in the Vistula estuary in the Gulf of Gdańsk (Janas et al. 2014; Bonk 2019, Fig. 1).

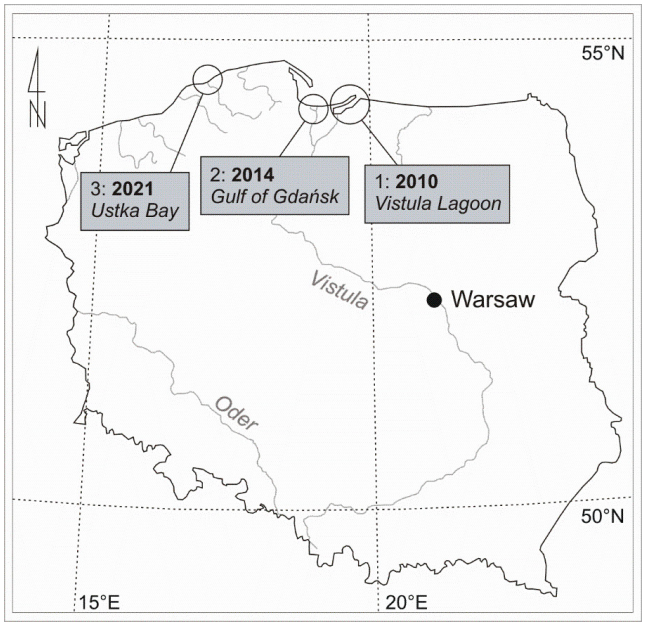

Fig. 1. The records of *Rangia cuneata* on the Polish coast. 1. Ezhova (2012), 2. Janas et al. (2014), 3. This study.

In February 2021, a valve of *R. cuneata* (Fig. 2) was found on the seashore in the Ustka Bay near the town of Ustka (Fig. 1). Despite further search in ca. 3 km to the west and east of this site, no more records were found. Also, a previous search of clam shells in June 2020 failed to record this species at this site. The seabed was not penetrated, thus no living individuals were observed. The possibility of long distance transport of the shell with water seems low (however we

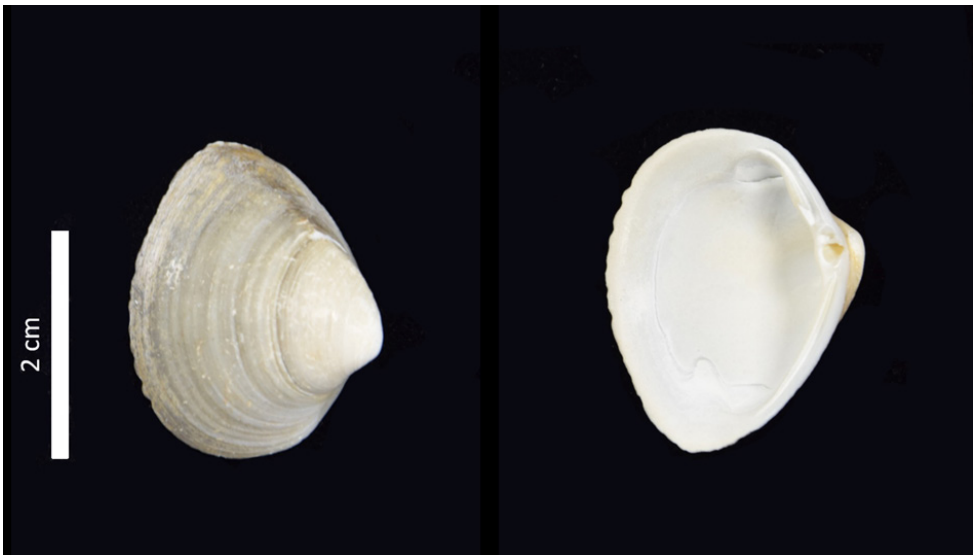

Fig. 2. The valve of *Rangia cuneata* from Ustka Bay: 1 – lateral view, 2 – inside view. Photo: B. Wiatrowska.

could not exclude such a scenario) since the shell was not scrubbed by sand and ligamentum and the colours of the shell were well preserved (Fig. 2).

R. cuneata prefers brackish waters especially in river estuaries with water rich in suspended detritus and phytoplankton (Piechocki & Wawrzyniak-Wydrowska 2016). According to these data, it is possible that in the future *R. cuneata* may establish many subpopulations along the southern Baltic coast, given there are many local rivers that flow into the Baltic Sea and provide suitable habitat conditions with brackish waters (Fig. 1). However, there are some suppositions that under specific circumstances population development may be limited by climate and salinity – harsh winters and low ions content (Tuszer-Kunc et al. 2020). A drastic reduction in the abundance reported from the Vistula Lagoon after a relatively long winter of 2012/2013 suggests that winter oxygen deficiency associated with ice cover may also be critical for population development (Warzocha et al. 2016). This species, however, has only recently appeared in the Baltic Sea and more data concerning its ecology and invasive potential in the Baltic waters are needed, including any information on new records of the species.

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