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SHORT NOTE

First record of the Pontocaspian invader *Hypania invalida* (Grube, 1860) (Polychaeta: Ampharetidae) in the River Meuse (Belgium)

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Hypania invalida (Grube, 1860) is known as a pontocaspian species (1) whose origin, distribution and migration upstream the river Danube have been described by several authors (2, 3, 4, 5, 6). The building of dams on the river Danube has favoured high densities at Ybbs-Persenbeug and Jochenstein, Austria (7), at Gabcikovo-Nagymaros, border between Slovakia and Hungary (8, 9, 10) and at Portile de Fier, Rumania (11). Recently, after the opening of the canal Danube – Main in September 1992, *H. invalida* escaped from the Danube basin and invaded the Main, the Rhine and the Moselle basins (6, 7, 12) and reached the Netherlands in 1995 (13). *H. invalida* has now invaded the river Meuse, and was first recorded in 2000 in its Belgian section.

Macrozoobenthos sampling is part of a routine monitoring network for the study of the biodiversity and for the assessment of biological quality of watercourses in Wallonia (Belgium). In the River Meuse this monitoring started in 1991. Intensive sampling methods were used at five stations in the 2000 campaign (from August 22nd to September 15th): 1 Heer, 2 Lustin, 3 Gives, 4 Chokier and 5 Lixhe (from upstream to downstream respectively, Fig. 1).

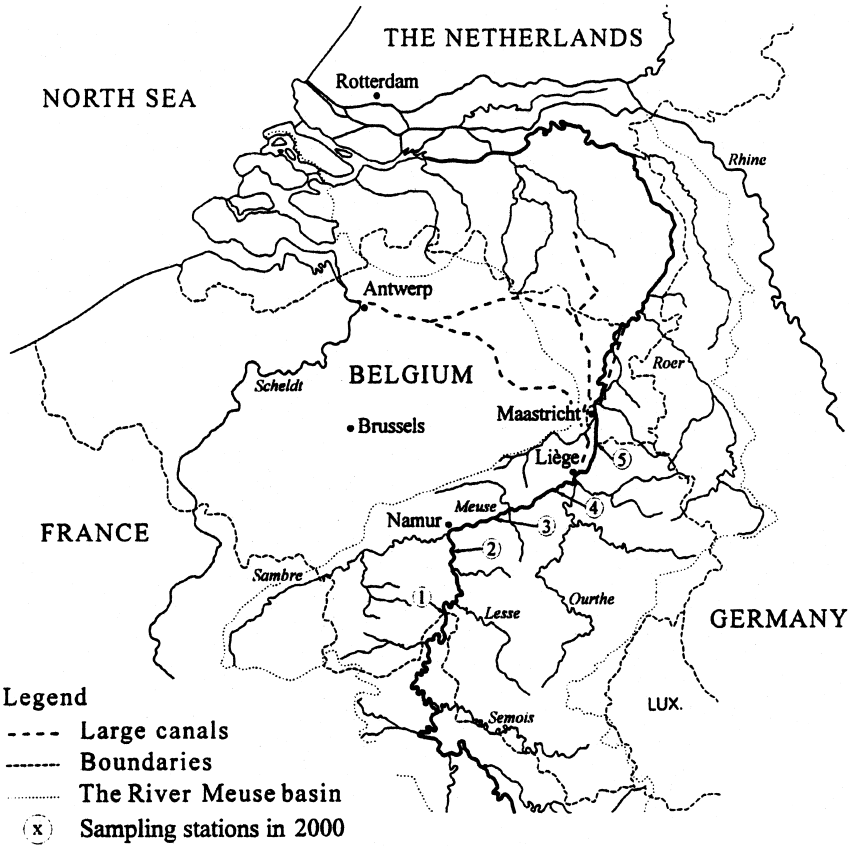

Fig. 1. – Location of the sampling sites (1 = Heer, 2 = Lustin, 3= Gives, 4 = Chokier and 5 = Lixhe).

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The presence of an island at Heer (Ile d'Androssart) and at Gives (Ile des Chanoines) allows the sampling in a channel closed to ships and well protected from navigation. Chokier and Lustin to a smaller extend are subjected to disturbances caused by navigation (heavy waves, bottom disturbed by propellers). Lixhe station is located 500 m downstream from a hydroelectric power station in shallow, non navigable waters. The banks were sampled with a handnet (500 µm mesh size on a metal frame 30 x 26 cm) and with three artificial substrates (strong nylon net bags – mesh size 1 cm – filled with 5 litres of 4 to 8 cm pebbles, submerged at a depth of about 1 m and left in place for 34 days). The main channel was sampled at a depth of 4 m with a triangular dredge (side size 30 cm, 500 µm mesh size) and by scuba diving (10 litres material collected under water with a small spade in a 500 µm mesh size handnet). Local conditions did not allow either dredging in station 5 or diving in stations 4 and 5.

Hypania invalida (Grube, 1860) (Fig.2), identified according to "Die Tierwelt Deutschlands" (14), was collected in three stations: Heer, Gives and Chokier. The length of the largest specimen was 13.9 mm after fixation. Only one specimen was collected at Heer, close to the French border, by scuba diving. The other techniques did not provide any polychaetes. Close to the bank, the oxygen concentration was 6.4 mg l^{-1}, pH 8.22, conductivity 443 µS cm^{-1} and temperature 19.5 °C. At Gives, about 20 specimens were collected by dredging, ten within the artificial substrates and about 250 by scuba diving. The oxygen concentration was 6.5 mg l^{-1}, pH 8.10, conductivity 495 µS cm^{-1} and temperature 20.8 °C. The bottom of the river at both Heer and Gives was sampled at a depth of 4 m on gravel and stones covered with a few mm to a few cm of sludge. At Chokier, one artificial substrate yielded one specimen. The oxygen concentration was 6.4 mg l^{-1}, pH 8.08, conductivity 586 µS cm^{-1} and temperature 24.2 °C.

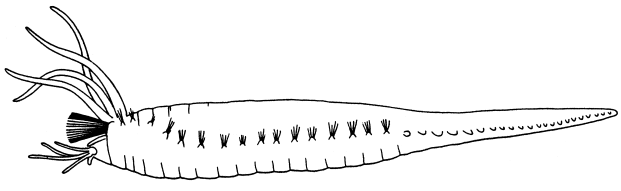

Fig. 2. – Aspect of *Hypania invalida* with partly visible tentacles (most individuals after fixation have their tentacles retracted in the mouth). Total length = 12 mm.

H. invalida is considered as an active filter feeding species (3, 15) but can also work as a deposit feeder (3). It is a eurytopic species, which has been found from hyporhithron to hypopotamon (15). It is one of the characteristic species of the eupotamon (vs parapotamon) and avoids the plesiopotamon (8, 16). It lives within a muddy tube on various substrates with a preference for gravel to silt deposits (3, 4, 5, 16, 17). Its populations can quickly build up to high densities (>10000 ind m^{-2}) in favourable conditions i.e. after the building of a dam (11, 17). Such conditions are met in the Meuse adapted for navigation in Wallonia.

Hypania invalida is one among the recent invaders that were collected in the Walloon Meuse (Belgium) during the same campaign: others were *Corbicula fluminea* (Müller, 1774) (since 1994 in Lanaye close to the Dutch border; in stations 1, 3 and 4 in 2000), *Hemimysis anomala* (Sars, 1907) (stations 1, 2 and 3), *Dikerogammarus* sp, *Echinogammarus* sp and *Corophium curvispinum* (Sars) (stations 1, 2, 3 and 4).). *C. curvispinum* co-occurred with *H. invalida*. The co-occurrence of these two species was also noticed in Bulgaria and Rumania (4, 5).

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