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Hypania invalida (GRUBE 1860) (Polychaeta: Ampharetidae) in the Lower Rhine - new to the Dutch fauna

[*Hypania invalida* (GRUBE 1860) (Polychaeta: Ampharetidae) im Niederrhein - neu für die holländische Fauna]

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With 1 figure

Schlagwörter: Hypania, Polychaeta, Neozoen, Niederrhein, Rhein, Niederlande, Fluß, Erstfund, Faunistik, Verbreitung, Ökologie

First record of the pontocaspian species 1995 in the River Rhine near the Dutch-German border, invaded via the Main-Donau-Canal.

Erstfund der pontokaspischen Art 1995 im Niederrhein nahe der holländisch-deutschen Grenze, eingewandert über den Main-Donau-Kanal

1 Introduction

As a result of water quality improvement, many macroinvertebrates have returned into the Dutch part of the River Rhine during the last two decades (BIJ DE VAATE 1994). One of the most spectacular examples is the return of the indigenous mayfly *Ephoron virgo* in 1991 (BIJ DE VAATE & al. 1992). On warm summer evenings their mass flight resembles a snow shower, hence the name "summer snow" (WWF 1993). Besides a gradual recolonization of the river Rhine with indigenous species, a remarkable colonization of this river takes place by species from the River Danube via the Main-Donau-Canal. Danubial species recently observed in the Dutch part of the River Rhine are: *Corophium curvispinum* (VAN DEN BRINK & al. 1989); *Chaetogammarus ischnus* (VAN DEN BRINK & al. 1993); *Dikerogammarus villosus* (BIJ DE VAATE & KLINK 1995). In the German part or in one of the tributaties of the River Rhine, the River Main, also the Danubial species *Dikerogammarus haemobaphes* (SCHLEUTER & al. 1994) and *Jaera istri* (SCHLEUTER & SCHLEUTER 1995) were found. In 1995 another Danubial macroinvertebrate species reached the Dutch part of the River Rhine: the polychaete worm *Hypania invalida*.

2 Methods

Macroinvertebrates in the River Rhine have been sampled six times a year (in the period April-October) with a standardized artificial substrate consisting of glass marbles (DE PAUW & al.1994). The substrate was placed on the river bottom and sampled after a colonization period of four weeks. Stones in the littoral zone were collected with a polyp grab and sampled by brushing off the attached material. Each sample was rinsed on a 500 μm mesh sieve before preservation. *Hypania invalida* was identified with an identification key published by HARTMANN-SCHRÖDER (1971, p. 466).

3 Results

On July 27, 1995 one specimen and on August 24, 1995 five specimens of *Hypania invalida* were collected from the artificial substrate. One specimen was collected on August 23, 1995 from a natural substrate, stones in the littoral zone. All specimens were collected in the River Rhine at Tolkamer near the German-Dutch border (fig. 1). *H. invalida* was accompanied by large numbers of the danubial amphipods *Corophium curvispinum* and *Dikerogammarus villosus*.

4 Distribution

H. invalida is one of only six European freshwater polycheates (GERLACH 1978). The species is mentioned from the rivers Wolga, Dnjepr, Bug, Dnjestr, Danube and from the Black Sea and the Caspian Sea (HARTMANN-SCHRÖDER 1971). In the River Wolga the species had expanded upstream from the upper delta region (BEHNING 1928) to the Kuibyshev reservoir (DZYUBAN & SLOBODCHIKOV 1980). In the River Danube *H. invalida* seems to have extended its territory recently in upstream direction. In the sixties the species was collected for the first time in the German part of that river (KOTHE 1968).

5 Ecology

H. invalida is considered to be a filterfeeder. The worm builds a living tube consisting of fine sediment by mucilagenous secretion (MANOLELI 1975, 1977). In the River Wolga, *H. invalida* prefers a bottom consisting of a sand/silt mixture and is accompanied by *Dreissena polymorpha*, *Limnodrilus newaensis*, *Jaera nordmanni*, *Schizorhynchus scabriusculus* and *Metamysis strauchi* (BEHNING 1928). In the area of theKuibyshev reservoir *H. invalida* reaches densities of 20 specimens/m² on the sandy river bottoms with current velocity of 0.2-1.5 m to 1400 specimens/m² on the muddy shores (DZYUBAN & SLOBODCHIKOV 1980). In the Romanian part of the River Danube, populations of *H. invalida* increased in the newly formed Iron Gate reservoir after construction of the Iron Gate dam in 1968 (POPESCU-MARINESCU 1992). In the River Tisza, a large tri-

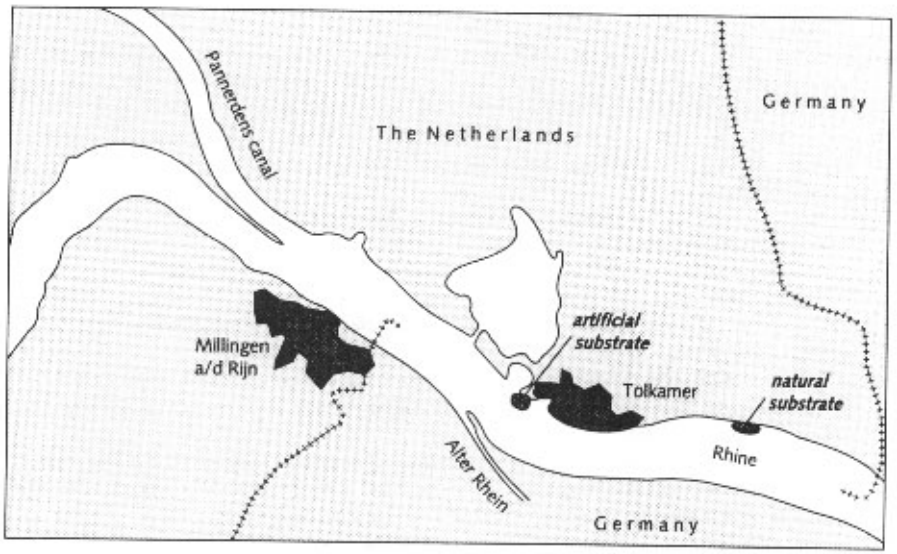

Fig. 1: Locations (in italics) were *H. invalida* was found

butary of the River Danube, *Hypania* inhabits the so called *Palingenia longicauda* biotope (CSOKNYA & FERENCZ 1975). This biotope of the largest European mayfly (Ephemeroptera) consists of eroding clay banks. From literature and from the Dutch finding places it could be concluded that *H. invalida* is not restricted to a specific biotope. The species can live on different places, under lotic and lentic conditions as well.

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