©Erik Mauch Verlag, Dinkelscherben, Deutschland, Download unter www.biologiezentrum.at

Lauterbornia 40: 53-56, D-86424 Dinkelscherben, 2001-02-28

Dendrocoelum romanodanubiale in the Rhine delta: first records from The Netherlands

Abraham bij de Vaate and Myra B. A. Swarte

With 2 figures and 1 table

Schlagwörter: Dendrocoelum, Tricladida, Turbellaria, Rhein, Rheindelta, Niederlande, Erstfund
Keywords: Dendrocoelum, Tricladida, Turbellaria, Rhine delta, The Netherlands, first record

The Ponto-Caspian species *Dendrocoelum romanodanubiale* (CODREANU 1949) now has reached the Rhine delta via the Upper Danube and the Main-Danube Canal.

1 Introduction

The triclad *Dendrocoelum romanodanubiale* (CODREANU 1949) is one of the Ponto-Caspian macroinvertebrate species that recently colonised the Rhine basin via the Main-Danube Canal. Before its migration through that canal range extension was observed in the River Danube in the 1990's. The species was found for the first time in the upper Danube (in Germany) in 1994 (WEINZIERL & SEITZ 1994). In August 1997 and July 1998 *D. romanodanubiale* was found in the River Rhine (SCHÖLL & BEHRING 1998) and its tributary the River Main (SCHLEUTER & SCHLEUTER 1998) respectively. Further colonisation of the River Rhine was expected, but it took about three years before the species was found in the Rhine delta.

2 Methods

Macroinvertebrates in the Lower Rhine (location 1, Fig. 1) have been sampled on a regularly basis six times a year with a standardised artificial substrate, consisting of glass marbles (DE PAUW & al. 1994). The substrate was placed on the river bottom and sampled after a colonisation period of four weeks. Stones in the littoral zone in the Rhine delta (locations 2-10, Fig. 1) were collected with a polyp grab and sampled by brushing off the attached material. Each sample was rinsed on a 0,5 mm mesh sieve before preservation with ethanol. *D. romanodanubiale* (fig. 2) was identified with a description according to SCHÖLL & BEHRING (1998).

©Erik Mauch Verlag, Dinkelscherben, Deutschland, Download unter www.biologiezentrum.at

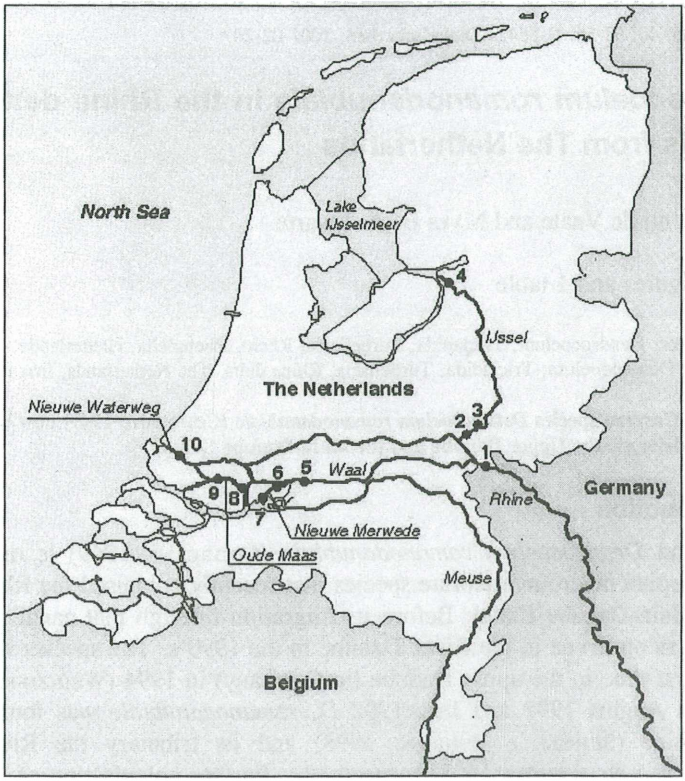

Fig. 1: Locations in the Lower Rhine and the Rhine delta where *D. romanodanubiale* was found in the period September-October 1999

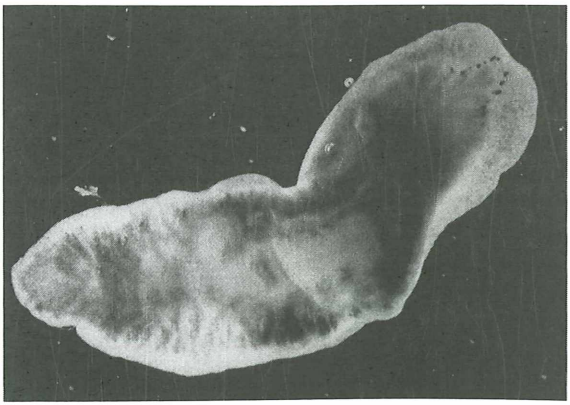

Fig. 2: Habitus of *Dendrocoelum romanodanubiale*

©Erik Mauch Verlag, Dinkelscherben, Deutschland, Download unter www.biologiezentrum.at

3 Results and discussion

D. romanodanubiale was found in several macroinvertebrate samples taken in the Lower Rhine and Rhine delta (Tab. 1, Fig. 1) in the framework of the national biological monitoring programme (GILDE & al. 1999).

Tab. 1: Number of *D. romanodanubiale* found in samples taken in the period September-October 1999 in the Lower Rhine and the Rhine delta

Location	River km	Number
Rhine (1)	863	1
IJssel (2)	885	313
IJssel (3)	896	79
IJssel (4)	1001	10
Waal (5)	951	1
Nieuwe Merwede (6)	964	8
Nieuwe Merwede (7)	970	1
Oude Maas (8)	983	2
Oude Maas (9)	990	3
Nieuwe Waterweg (10)	1020	1

The observations of the species in September and October 1999 were the first in The Netherlands. After its record from the middle section of the river in 1997 (SCHÖLL & BEHRING 1998), colonisation in downstream direction could be expected. Other Ponto-Caspian macroinvertebrate species, that recently entered the Rhine basin via the Main-Danube Canal showed comparable migration patterns: e.g. the gammarid *Dikerogammarus haemobaphes* (SCHLEUTER & al. 1994; SCHÖLL & al. 1995, TITIZER 1996), the mysid *Limnomysis benedeni* (WITTMANN 1995, REINHOLD & TITTIZER 1998, KELLEHER & al. 1999, KETELAAR & al. 1999), the amphipod *Jaera istri* (SCHLEUTER & SCHLEUTER 1995, SCHÖLL & BANNING 1996, TITTIZER 1996a), and the polychaete *Hypania invalida* (KOTHÉ 1968, TITTIZER 1996b, KLINK & BIJ DE VAATE 1996; SCHMIDT & al., 1998). As the result of water management in the Main-Danube Canal and shipping activity other Ponto-Caspian species are expected to colonise the Rhine basin in the near future.

References

GILDE, L. J., K. H. PRINS & C. A. M. VAN HELMOND (1999): Monitoring zoete Rijkswateren.- Report no. 99.004, Institute for Inland Water Management & Waste Water Treatment, Lelystad

KELLEHER, B., G. VAN DER VELDE, K. J. WITTMAN, M. A. FAASSE & A. BIJ DE VAATE (1999): Current status of the freshwater Mysidae in the Netherlands with records of Limnomysis

©Erik Mauch Verlag, Dinkelscherben, Deutschland, Download unter www.biologiezentrum.at

benedeni (Czerniavsky 1882), a Ponto-Caspic species in Dutch Lower Rhine branches.- Bulletin. Zoologisch museum, Universiteit van Amsterdam 16(13): 89-94, Amsterdam

KETELAARS, H. A. M., F. E. LAMBREGTS-VAN DE CLUNDERT, C. J. CARPENTIER, A. J. WAGENVOORT & W. HOOGENBOEZEM (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 its autoecology and new records.- Hydrobiologia 394: 233-248, Dordrecht

KLINK, A. & A. BIJ DE VAATE (1996): Hypania invalida (Grube, 1860) (Polychaeta: Ampharetidae) a freshwater polychaeta in the Lower Rhine, new to the Dutch fauna.- Lauterbornia 25: 57-60, Dinkelscherben

KOTHÉ, P. (1968): Hypania invalida (Polychaeta sedentaria) and Jaera istri (Isopoda) erstmals in der deutschen Donau.- Archiv für Hydrobiologie Supplement 34: 88-114, Stuttgart

REINHOLD, M. & T. TITTIZER (1998): Limnomysis benedeni Czerniavsky 1882 (Crustacea: Mysidacea), ein weiteres pontokaspisches Neozoon im Main-Donau-Kanal.- Lauterbornia 33: 37-40, Dinkelscherben

SCHLEUTER, A. & M. SCHLEUTER (1998): Dendrocoelum romanodanubiale (Turbellaria, Tricladida) und Hemimysis anomala (Crustacea: Mysidacea) zwei weitere Neozoen im Main.- Lauterbornia 33: 125-127, Dinkelscherben

SCHLEUTER, M. & A. SCHLEUTER (1995): Jaera istri (Veuille) (Janiridae, Isopoda) aus der Donau erreicht über den Main-Donau-Kanal den Main.- Lauterbornia 21: 177-178, Dinkelscherben

SCHLEUTER, M., A. SCHLEUTER, S. POTEL & M. BANNING (1994): Dikerogammarus haemobaphes (Eichwald 1841) (Gammaridae) aus der Donau erreicht über den Main-Donau-Kanal den Main.- Lauterbornia 19: 155-159, Dinkelscherben

SCHMIDT, W-D., I. KAISER & I. SCHULLER (1998): Zwei Neuankömlinge aus der Donau - Hypania invalida (Polychaeta) und Jaera istri (Isopoda) - haben den ganzen Main besiedelt.- Lauterbornia 33: 121-123, Dinkelscherben

SCHÖLL, F. & M. BANNING (1996): Erstnachweis von Jaera istri (Veuille) (Janiridae, Isopoda im Rhein.- Lauterbornia 25: 61-62, Dinkelscherben

SCHÖLL, F., & E. BEHRING (1998): Erstnachweis von Dendrocoelum romanodanubiale (Codreanu 1949) (Turbularia, Tricladida) im Rhein.- Lauterbornia 33: 9-10, Dinkelscherben

SCHÖLL, F., C. BECKER & T. TITTIZER (1995): Das Makrozoobenthos des schiffbaren Rheins von Basel bis Emmerich 1986-1995.- Lauterbornia 21: 115-137, Dinkelscherben

Tittizer, T. (1996a): Vorkommen und Ausbreitung aquatischer Neozoen (Makrozoobenthos) in den Bundeswasserstrassen.- In: GEBHARDT H., R. KINZELBACH & S. SCHMIDT-FISCHER (eds.): Gebietsfremde Tierarten. Auswirkungen auf einheimischen Arten, Lebensgemeinschaften und Biotope. Situationsanalyse: 49-86, Landsberg

TITTIZER, T. (1996b): Main-Danube canal now a short cut for fauna.- Danube Watch 2(3): 7-8, Wien

WEINZIERL, A. & G. SEITZ (1994): Dendrocoelum romanodanubiale (Condreanu 1949) in der oberen Donau (Turbellaria, Tricladida).- Lauterbornia 15: 23-25, Dinkelscherben

WITTMANN, K. J. (1995): Zur Einwanderung potamophiler Malacostraca in die obere Donau: Limnomysis benedeni (Mysidacea), Corophium curvispinum (Amphipoda) und Atyaephyra desmaresti (Decapoda).- Lauterbornia 20: 77-85, Dinkelscherben

Authors' adress: Abraham bij de Vaate and Myra B. A. Swarte, Institute for Inland Water Management & Waste Water Treatment, P.O. Box 17, NL-8200 AA Lelystad, The Netherlands (E-mail: b.bdvaate@riza.rws.minvenw.nl and m.swarte@riza.rws.minvenw.nl respectively)

Received: 2000-10-17

ZOBODAT - www.zobodat.at

Zoologisch-Botanische Datenbank/Zoological-Botanical Database

Digitale Literatur/Digital Literature

Zeitschrift/Journal: Lauterbornia

Jahr/Year: 2001

Band/Volume: 2001_40

Autor(en)/Author(s): bij de Vaate Abraham, Swarte Myra B. A.

Artikel/Article: Dendrocoelum romanodanubiale in the Rhine delta: first records from the Netherlands. 53-56