Communications

The first record of
Paratenuisentis ambiguus
(Acanthocephala, Tenuisentidae) in Poland

JOLANTA MOROZIŃSKA-GOGOL

Department of Aquatic Ecology,
Pomeranian Academy,
Arciszewskiego 22B, PL–76–200 Słupsk;
e-mail: morgo@onet.eu

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Abstract

Paratenuisentis ambiguus, an acanthocephalan originating from North America, is
an alien species parasitising the European eel Anguilla anguilla. It was first recorded
in Lake Łebsko, on the central coast of Poland. The report gives morphometric
measurements of male and female P. ambiguus from this locality. Because of the
spread of the intermediate host Gammarus tigrinus and the appearance of new
adults in eels along the southern Baltic Coast, P. ambiguus is evidently able to
complete its life cycle in Baltic coastal waters.

Paratenuisentis ambiguus Van Cleave, 1921, is a specialist parasite of
the American eel Anguilla rostrata (Lesueur, 1817) along the east coast
of North America from Labrador to Florida (Samuel & Bullock 1981).
This acanthocephalan was introduced into Europe with its sole intermediate
host, the euryhaline amphipod Gammarus tigrinus Sexton, 1939 (Bullock
waters off the east coast of North America, G. tigrinus appeared in the River
Weser, Germany, in 1957, and these acanthocephalans have been recorded in
German inland waters since 1987 (Gollasch & Nehring 2006). Taraschewski

The complete text of the paper is available at http://www.iopan.gda.pl/oceanologia/
et al. (1987) reported the first appearance of *P. ambiguus* in its definitive host outside the USA. Since this time, too, acanthocephalans have been recorded in the European eel *Anguilla anguilla* (Linnaeus, 1758), notably in the River Weser since 1987, in the Rhine in Germany a few years later (Taraschewski et al. 1987, Sures et al. 1999, Sures & Streit 2001), and in the Russian part of the Vistula Lagoon since 2004 (Rodjuk & Shelekova 2006).

*P. ambiguus* has been recorded in eels from Lake Łebsko (central Polish coast) since 2002. During parasitological studies from 2001 to 2006, 88 eels were investigated and a total of 169 specimens of *P. ambiguus* were collected. Both males and females of this acanthocephalan were found (Figure 1). Table 1 lists the measurements of *P. ambiguus* from Lake Łebsko.

**Figure 1.** *Paratenuisentis ambiguus* (examined under a Nikon Eclipse E400): male and female from the European eel *Anguilla anguilla* from Lake Łebsko (proboscis (a); male, central section with testes (b); male, posterior (c); female, posterior (d))
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Table 1. Morphometric data of *Paratenuisentis ambiguus* from Lake Łebsko. Measurements in µm, but length in mm; mean values in parentheses

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>length</td>
<td>4.9–11 (7.8)</td>
<td>4.6–6.9 (5.9)</td>
</tr>
<tr>
<td>maximum width</td>
<td>559–820 (639)</td>
<td>494–754 (616)</td>
</tr>
<tr>
<td>length of external praesoma</td>
<td>659–839 (746)</td>
<td>507–702 (628)</td>
</tr>
<tr>
<td>maximum width of external praesoma</td>
<td>146–209 (168)</td>
<td>130–165 (149)</td>
</tr>
<tr>
<td>number of proboscis hooks per row</td>
<td>13–16 (14.4)</td>
<td>13–16 (14.3)</td>
</tr>
<tr>
<td>number of rows</td>
<td>16–22 (18.8)</td>
<td>14–18 (15.8)</td>
</tr>
<tr>
<td>length of receptacle</td>
<td>573–1076 (827)</td>
<td>471–964 (745)</td>
</tr>
<tr>
<td>length of long lemniscus</td>
<td>1231–2333 (1643)</td>
<td>1545–2070 (1820)</td>
</tr>
<tr>
<td>length of short lemniscus</td>
<td>1130–1975 (1447)</td>
<td>1315–1788 (1612)</td>
</tr>
<tr>
<td>length of vagina</td>
<td>119–216 (165)</td>
<td></td>
</tr>
<tr>
<td>length of uterus</td>
<td>198–358 (277)</td>
<td></td>
</tr>
<tr>
<td>length of uterine bell</td>
<td>195–358 (286)</td>
<td></td>
</tr>
<tr>
<td>length of anterior testis</td>
<td></td>
<td>312–492 (448)</td>
</tr>
<tr>
<td>length of posterior testis</td>
<td></td>
<td>387–892 (597)</td>
</tr>
<tr>
<td>number of cement gland nuclei</td>
<td></td>
<td>28–41</td>
</tr>
<tr>
<td>length of cement reservoir</td>
<td></td>
<td>134–276 (206)</td>
</tr>
</tbody>
</table>

A detailed description with figures and a comparison of European with American specimens were given by Taraschewski et al. (1987). The collected parasites corresponded to the specimens described from the River Weser by Taraschewski et al. (1987) and from North America by Bullock & Samuel (1975).

The first observations of *P. ambiguus* in eels from Lake Łebsko and the Russian part of the Vistula Lagoon were preceded by the occurrence of *G. tigrinus*. This gammarid lives in fresh and brackish waters; in coastal waters, however, its distribution is restricted to shallow lagoons, bays and estuaries. Its rapid spread along the Baltic coast has been recorded in Germany since 1975 (Zander et al. 1994, Zettler 2001, Gollasch & Nehring 2006), in the Szczecin Lagoon and Odra mouth since the 1990s (Gruszka 1995, 1999, Wawrzyniak-Wydrowska & Gruszka 2005), and the Gulf of Gdańsk (Bochenek et al. 2004), Puck Bay (Gruszka 2002, Szaniawska et al. 2003), the Vistula Lagoon (Jażdżewski & Konopacka 2000, Ezhova et al. 2005), the Gulf of Riga, the Finnish coast, the Gulf of Finland and the Curonian Lagoon (Daunys & Zettler 2006) since 2004. Because of the spread of the intermediate host and the appearance of new adults in eels along the southern Baltic Coast, it is clear that *P. ambiguus* can complete its life cycle in Baltic coastal waters.
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