New records of *Praethecacineta halacari* (Schulz) (Suctorea: Ciliophora) from Taiwan, Tanzania and Canada

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The present study reports on a range extension of the suctorian species *Praethecacineta halacari* to the region of He-Ping-Dao, north-east of Taiwan (West Pacific Ocean), Matemwe, the east coast of Unguja, Zanzibar, Tanzania (West Indian Ocean) and Nova Scotia, Canada (West Atlantic Ocean). *Praethecacineta halacari* is reported here for the first time from Taiwan, Tanzania and Canada. Earlier records include the Caspian Sea, Western Australia, Brazil, India, and various coastal sites in Europe.

Keywords: epibionts, suctorians, *Praethecacineta halacari*, range extension, Taiwan, Zanzibar, Canada

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**INTRODUCTION**

Several species of suctorian ciliates are common epibionts of benthic marine and interstitial invertebrates (Precht, 1935; Jankowski, 1981, 2007; Dovgal, 1996, 2002; Dovgal et al., 2008a, b; Ingole et al., 2009). A number of suctorian ciliates have been observed as epibionts on various halacarid mites (Dovgal et al., 2008a). In this paper, we report *Praethecacineta halacari* (Schulz, 1933) as an epibiont on halacarid mites from Taiwan, Tanzania and Canada. This ciliate species is reported here for the first time from these coastal waters.

**MATERIALS AND METHODS**

Halacarid mites were collected from He-Ping-Dao, north-east of Taiwan (West Pacific Ocean), Matemwe, the east coast of Unguja, Zanzibar, Tanzania (West Indian Ocean) and Nova Scotia, Canada (West Atlantic Ocean) (Figure 1). Standardized measurements were made using the computer program ScopePhoto 2.0 for processing digital images. All specimens are deposited in the collections of the Department of Fauna and Systematics of invertebrate animals of Schmalhausen Institute of Zoology, National Academy of Sciences, Ukraine.

**RESULTS AND DISCUSSION**

**SYSTEMATICS**

Class SUCTOREA Claparède & Lachmann, 1859

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Bulgaria and Ukraine (Black Sea); Norway, Kiel Bay of North Sea, Caspian Sea, Western Australia, Atlantic coast of Brazil, west coast of India (Schulz, 1933; Detcheva, 1992; Boshko & Dovgal, 2004; Gelmboldt & Dovgal, 2005; Pepato & Tiago, 2005; Dovgal et al., 2008a). Taiwan, Tanzania and Canada (present report).

**HOST SPECIFICITY**

*Praethecacineta halacari* has been found attached to a variety of halacarid mites; viz. *Copidognathus arabicus* Chatterjee & Chang, *C. brifaciensis* Bartsch, *C. brachystomus* Viets, *C. magnipalpus* (Police), *C. meridianus* Bartsch, *C. tupinamborum* Pepato & Tiago, *Copidognathus* spp., *Caspialacarus hyrcanus* Viets, and many unidentified species (Schulz, 1933; Detcheva, 1992; Boshko & Dovgal, 2004; Gelmboldt & Dovgal, 2005; Pepato & Tiago, 2005; Dovgal et al., 2008a). *Copidognathus ungujaensis* Chatterjee, De Troch & Chang is also reported here for the first time as a host of *P. halacari*. Chatterjee et al. (2006) noted that many specimens of *C. ungujaensis* were infested by suctorians, which have been identified here as *P. halacari*. 

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**Fig. 1.** Map showing the collection sites of *Praethecacineta halacari* reported in the present study.

**Fig. 2.** *Praethecacineta halacari* attached to *Copidognathus* sp. from Taiwan. Scale bar 20 μm.

**Fig. 3.** *Praethecacineta halacari* attached to *Copidognathus ungujaensis* Chatterjee, De Troch & Chang from Zanzibar, Tanzania. Scale bar 20 μm.

**Fig. 4.** *Praethecacineta halacari* attached to halacarid mite from Canada. Scale bar 20 μm.
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Table 1. Body dimensions of Praethecacineta halacari, measurements in μm.

<table>
<thead>
<tr>
<th>Characters</th>
<th>Taiwan specimens (present study)</th>
<th>Tanzanian specimens (present study)</th>
<th>Canadian specimens (present study)</th>
<th>Indian specimens after Dovgal et al., 2008a</th>
<th>Schulz, 1933</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lorica width</td>
<td>12–21</td>
<td>19–21</td>
<td>24–49</td>
<td>18–21</td>
<td>35–55</td>
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<tr>
<td>Cell body length</td>
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<td>22–29</td>
<td>16–48</td>
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<tr>
<td>Cell body width</td>
<td>12–25</td>
<td>12–18</td>
<td>15–47</td>
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<tr>
<td>Macronucleus diameter</td>
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<td>5–10</td>
<td>6–10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stalk length</td>
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<td>7–16</td>
<td>8–29</td>
<td>3–26</td>
<td>50–110</td>
</tr>
<tr>
<td>Tentacle length</td>
<td>3–6</td>
<td>1–14</td>
<td>3–10</td>
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