

New records of *Praethecacineteta 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 Praethecacineteta 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). Praethecacineteta 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, *Praethecacineteta 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 *Praethecacineteta 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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Subclass EXOGENIA Collin, 1912
Order METACINETIDA Jankowski, 1978
Family PRAETHECACINETIDAE Dovgal, 1996
Praethecacineteta halacari (Schulz, 1933) (Figures 2–4)

MATERIAL EXAMINED

Taiwan: 2 individuals were attached to *Copidognathus* sp. from He-Ping-Dao, north-east of Taiwan, 25°09'45"N 121°45'46"E, West Pacific Ocean, among intertidal coralline algae in exposed rocky shores, 6 March 2007, Col. B.K.K. Chan.

Tanzania: 2 individuals were attached to *Copidognathus ungujaensis* Chatterjee, De Troch & Chang from Matemwe, the east coast of Unguja, 05°52'S 39°21'E, Zanzibar, Tanzania (West Indian Ocean) among coral rubble of *Fungia*, 17 August 2004, Col. M. Raes and H. Gheerardyn.

Canada: 8 individuals were attached to one halacarid mite from Nova Scotia, 44°38'15"N 63°55'13"W, St Margaret's Bay, Canada (north-western Atlantic) in intertidal algae of the genus *Enteromorpha* on a rocky coast, September 2007, Col. DV Subba Rao.

DIAGNOSIS

Marine suctorians with stylothecca. Cell body weakly laterally flattened, entirely filling the lorica and attached to its posterior margin. Apical part of the body narrowed. Tentacles placed at upper cell surface. Macronucleus spherical posteriorly located; single contractile vacuole. Stylothecca smooth, without ribbing. Reproduction by semi-circumvaginate exogemmlic budding with formation of laterally placed ciliate swimmers.

Body dimensions: body dimensions of *P. halacari* collected from Taiwan, Tanzania, Canada and India are given in Table 1.

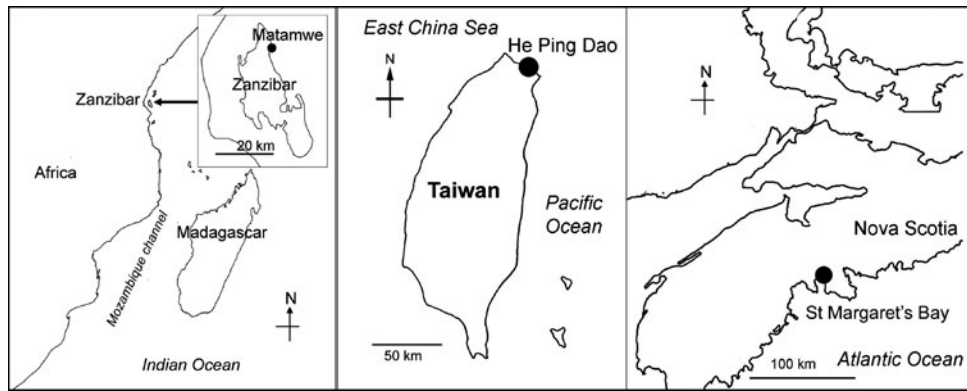


Fig. 1. Map showing the collection sites of *Praethecacineta halacari* reported in the present study.



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



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

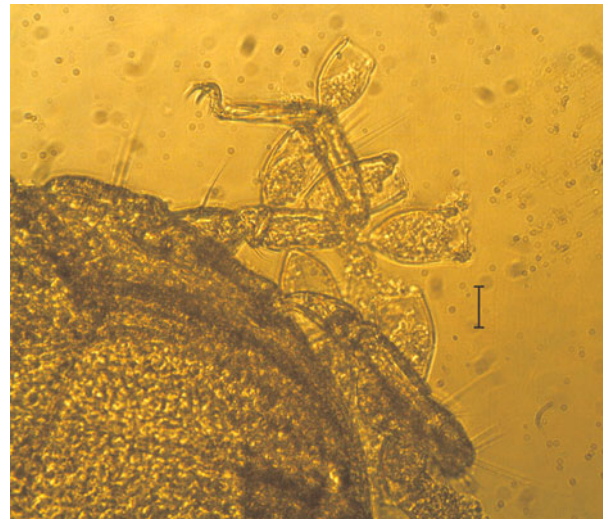


Fig. 4. *Praethecacineta halacari* attached to halacarid mite from Canada. Scale bar 20 μ m.

DISTRIBUTION

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. brifacius* Bartsch, *C. brachystomus* Viets, *C. magnipalpus* (Police), *C. meridianus* Bartsch, *C. tupinamborum* Pepato & Tiago, *Copidognathus* spp., *Caspihalacarus hyrcanus* Viets, and many unidentified species (Schulz, 1933; Detcheva, 1992; Boshko & Dovgal, 2004; Gelmboldt & Dovgal, 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. unguensis* were infested by suctorians, which have been identified here as *P. halacari*.

Table 1. Body dimensions of *Praethecacineta halacari*, measurements in μm .

| Characters | Taiwan specimens (present study) | Tanzanian specimens (present study) | Canadian specimens (present study) | Indian specimens after Dovgal <i>et al.</i> , 2008a | Schulz, 1933 |
|-----------------------|-------------------------------------|--|---------------------------------------|--|--------------|
| Lorica length | 24–38 | 30–35 | 16–55 | 31–38 | 85–110 |
| Lorica width | 12–21 | 19–21 | 24–49 | 18–21 | 35–55 |
| Cell body length | 24–26 | 22–29 | 16–48 | | |
| Cell body width | 12–25 | 12–18 | 15–47 | | |
| Macronucleus diameter | 7–9 | 5–10 | 6–10 | | |
| Stalk length | 17–18 | 7–16 | 8–29 | 3–26 | 50–110 |
| Tentacle length | 3–6 | 1–14 | 3–10 | | |

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