

Halicyclops korodiensis Onabamiro (Crustacea, Copepoda) in the estuary of the Warri River, Nigeria, West Africa

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Abstract

Halicyclops korodiensis Onabamiro was recorded in plankton samples of the brackish waters of the Warri River, Nigeria, West Africa. It is redescribed and figured.

Introduction

In 1952, Onabamiro described four new taxa of *Cyclops* sensu lato (Crustacea, Copepoda) from Nigeria, including the brackish water species *Halicyclops korodiensis*, cotypes and the syntype of which are kept in the British Museum (Natural History), London.

During an ecological and faunistic survey of the Copepoda species of the Warri River, we rediscovered this species.

The Warri River, situated within latitude 5°25'N and longitude 5°30'E, is a detritic river, draining a number of mangrove swamps from the Niger Delta, and it has tributaries interconnected with some affluents of the lower Niger River (Fig. 1).

Specimens were collected from the brackish estuary of the river at two locations, Ode-Itsekiri (5°30'N, 5°43'E) and Warri-Bomadi junction (5°26'N, 5°38'E). These locations have a salinity range of 0.2–2.0‰ and a conductivity range of 479–1385 $\mu\text{s cm}^{-1}$.

Redescription

Female

Length, from anterior end of cephalothorax to posterior tips of the furcal rami (not including the

furcal end-setae 0.44 ± 0.2 mm, $n = 6$).

Colour: dull brown.

Cephalothorax, slightly broader than long, with a length:width ratio of 0.97:1.00.

Genital somite, slightly broader than long, with a length:width ratio of 0.95:1.00.

The posterior margins of the abdominal somites are toothed or ornamented with spines.

Furcal rami (Fig. 3), almost as broad as long, with a length:width ratio of 1.00:0.96. Lateral seta (Fig. 4) inserted a little in front of the external seta. External seta 2.5 times longer than internal seta, and 1.4 times longer than dorsal seta. Internal median seta 2.9 times longer than external median seta.

Spine formula of the apical segments of the exopodites 3:4:4:3.

En₃P₄ (Fig. 11) bearing two reduced setae, with the upper seta 0.95 mm in length.

En₃P₁ (Fig. 8) with 4 well developed setae. The uniting lamella of P₁ (Fig. 8) has rounded prominences with fine setules on top, and a spine arrangement at the inside.

P₅ (Fig. 3) and its armature elements with the seta much longer than the spines (3.2 times longer than the middle spine, 2.5 times longer than the inner spine, and 1.9 times longer than the outer spine).

P₆ (Fig. 3) with 2 reduced spines (or 'thorns'), and a relatively long seta as compared to that found

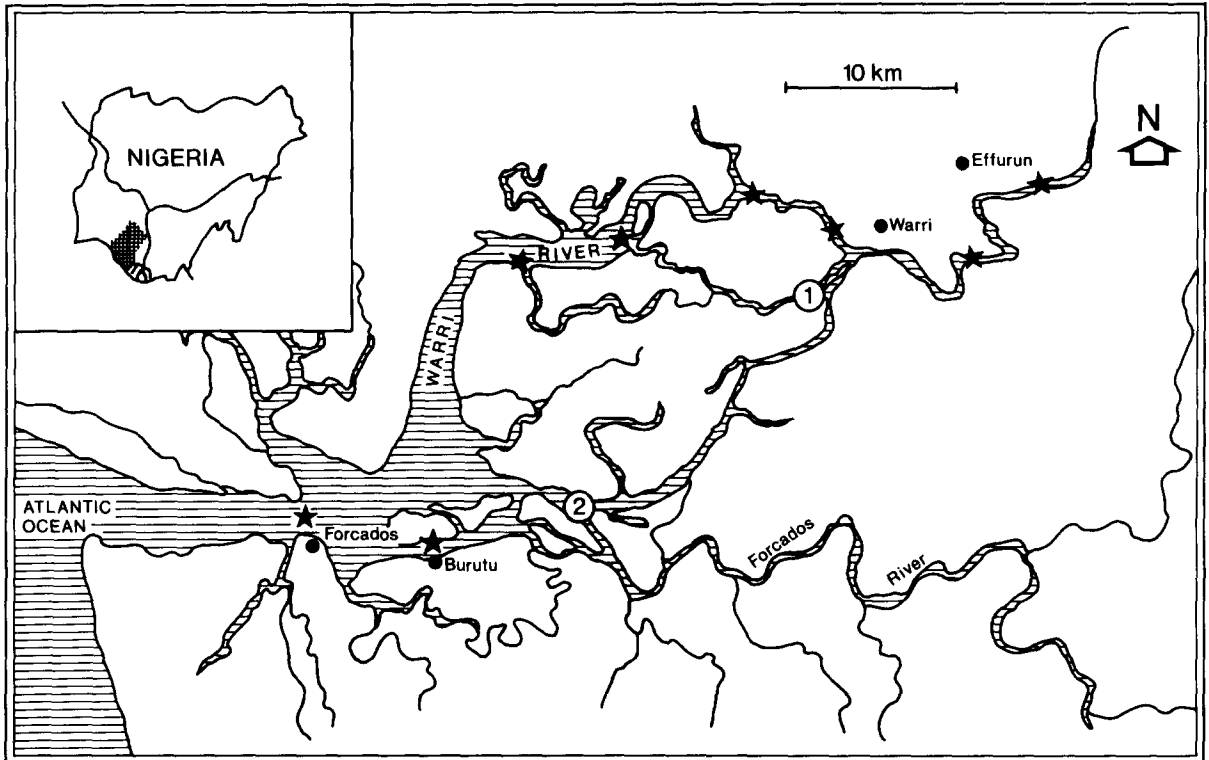


Fig. 1: Map of Warri River showing two *Halicyclops* locations and other sampling stations. 1. Ode-Itsekiri, 2. Warri Bomadi junction.

in the females of some other *Halicyclops* species.

A_1 (Fig. 5) 6-segmented, with the segments having the following proportional lengths (starting with the basal segment); 17, 23, 9, 35, 12, 23.

A_2 (Fig. 6) 3-segmented, with spine pattern on the basal and apical segments.

Mouthparts: maxillary gnathobase (Fig. 17) with two large spines and well-toothed margins. Maxillary palp (Fig. 15) with 4 well developed setae on its lateral tip. Mandible (Fig. 16) with 5 strong spines on the mandibular gnathobase.

Male

Length, from anterior end of cephalothorax to posterior tips of the furcal rami (not including the furcal end setae), 0.38 ± 0.01 mm, $n = 5$.

Colour: dull brown.

Body form and proportions are similar to that of the female, but the urosome has 6 somites and Enp_3P_4 has well developed setae.

A_1 (Fig. 19) is geniculate with 13 segments, 2 of whose suture lines are incomplete.

P_5 (Fig. 18) lacks the additional inner seta usually found in males of *Halicyclops* species.

P_6 (Fig. 18) is a broad plate at the close of the genital aperture, which bears one inner spine and two outer setae.

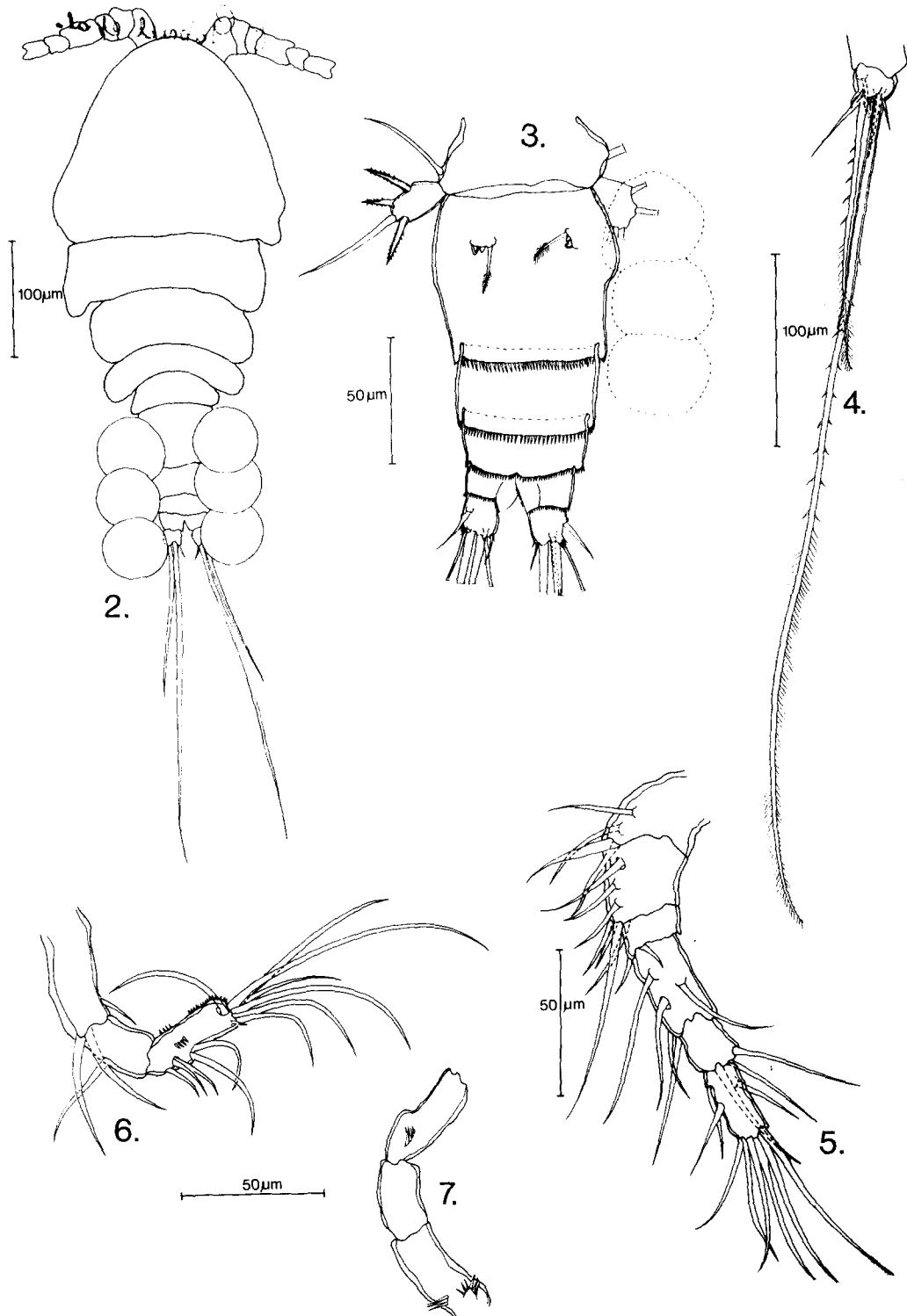
Mouthparts similar to those of the female.

Status

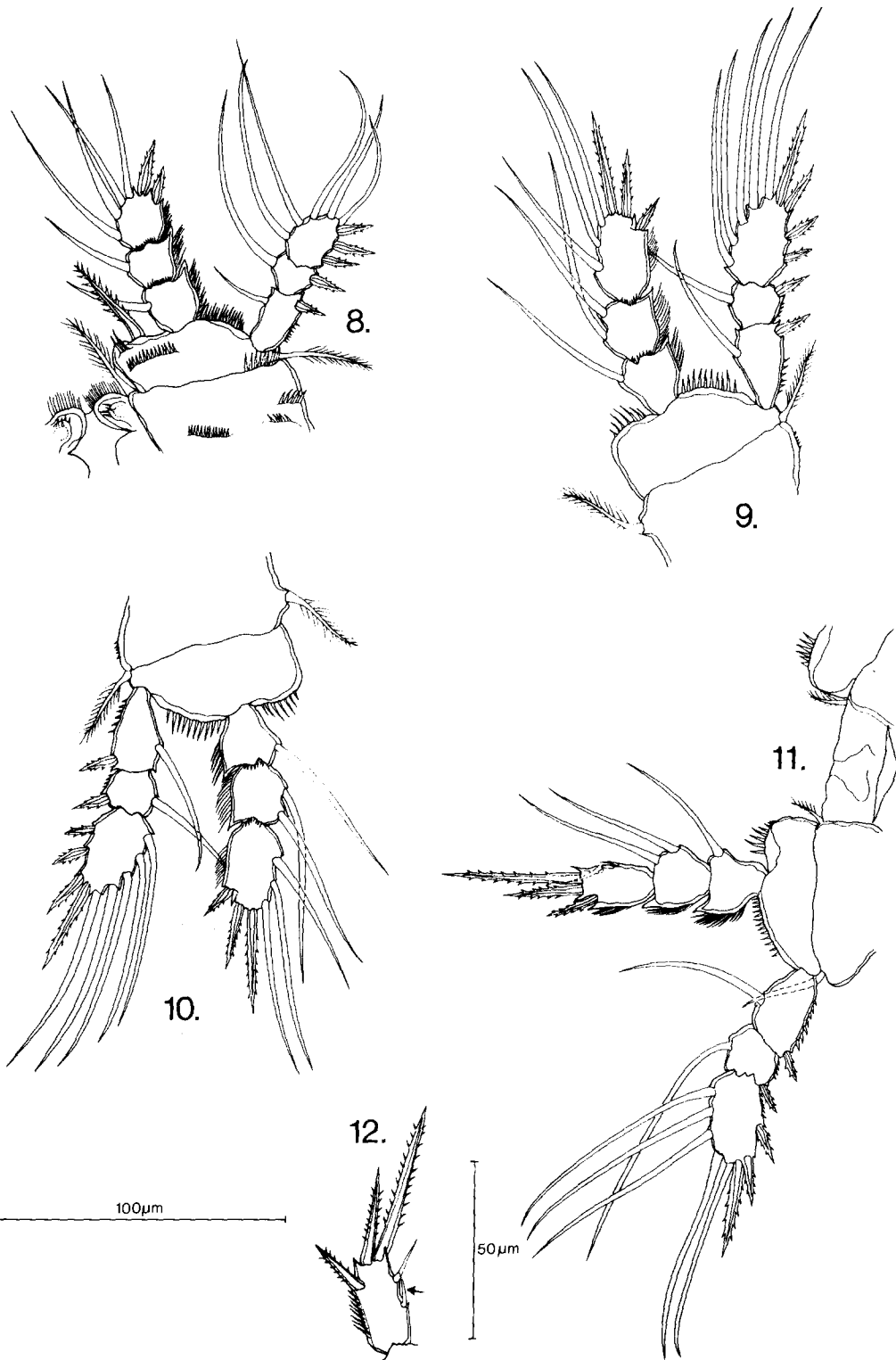
The Warri River estuary species of *Halicyclops* was first thought to belong to a new taxon, since it differs from the original description by Onabamiro (loc. cit.) in the following respects:

1. There are 2 reduced setae on the Enp_3P_4 (Fig. 11), as against 1 in *H. korodiensis*, original description.

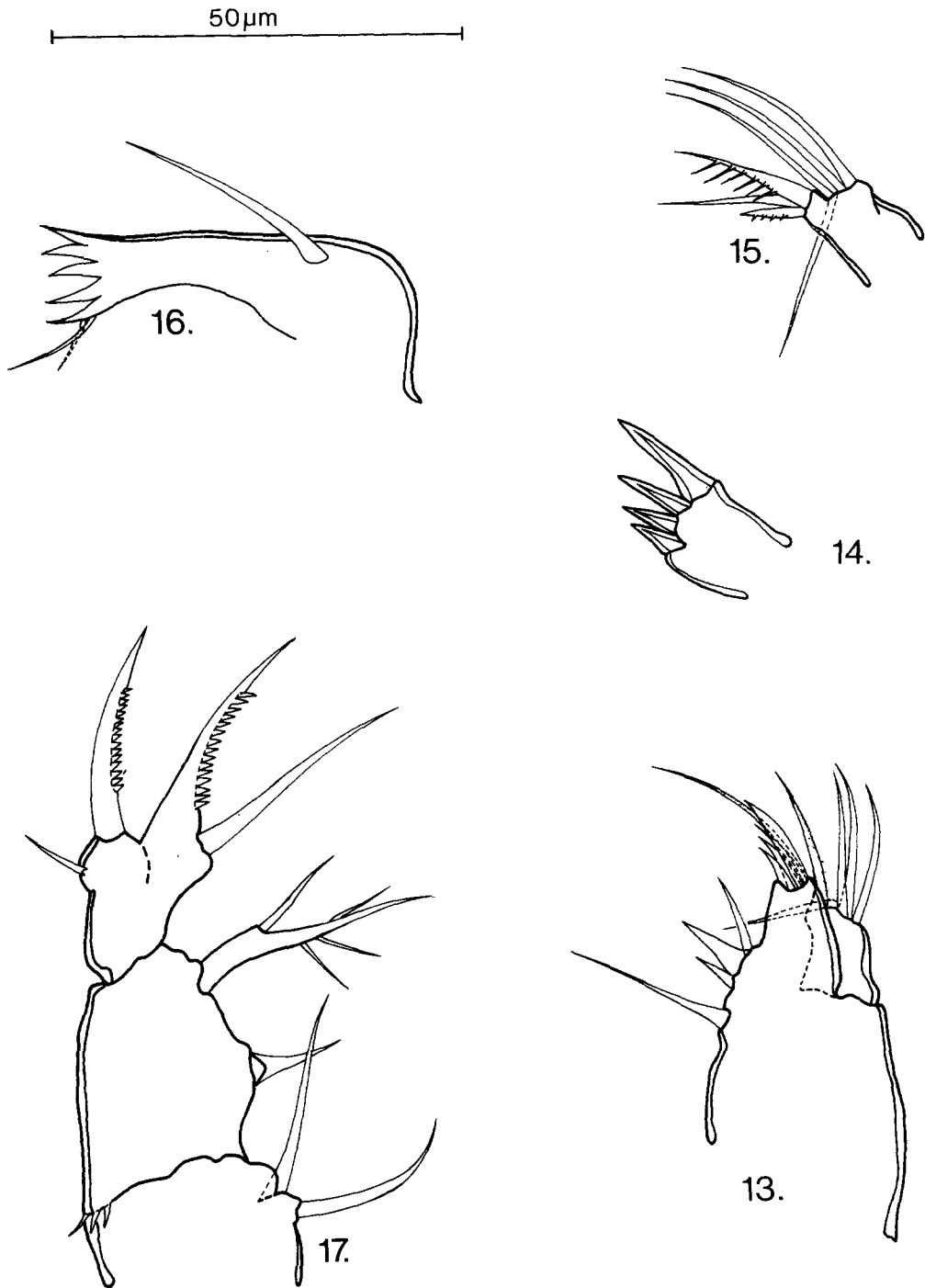
2. There are 4 well developed setae on the Enp_3P_1 (Fig. 8), as against 5 in *H. korodiensis*, original description.



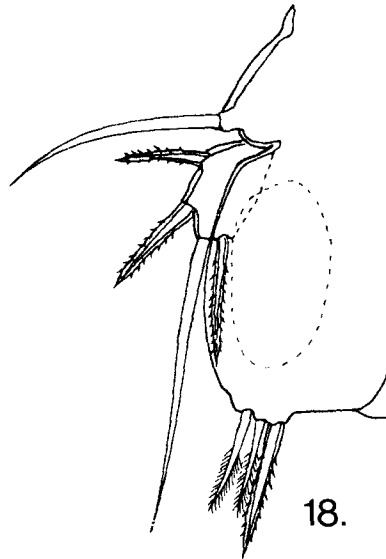
Figs 2–7: 2. Habitus female, 3. Furca, 4. Furcal setae, 5. A₁ female, 6. A₂ Top view, 7. Lower view.



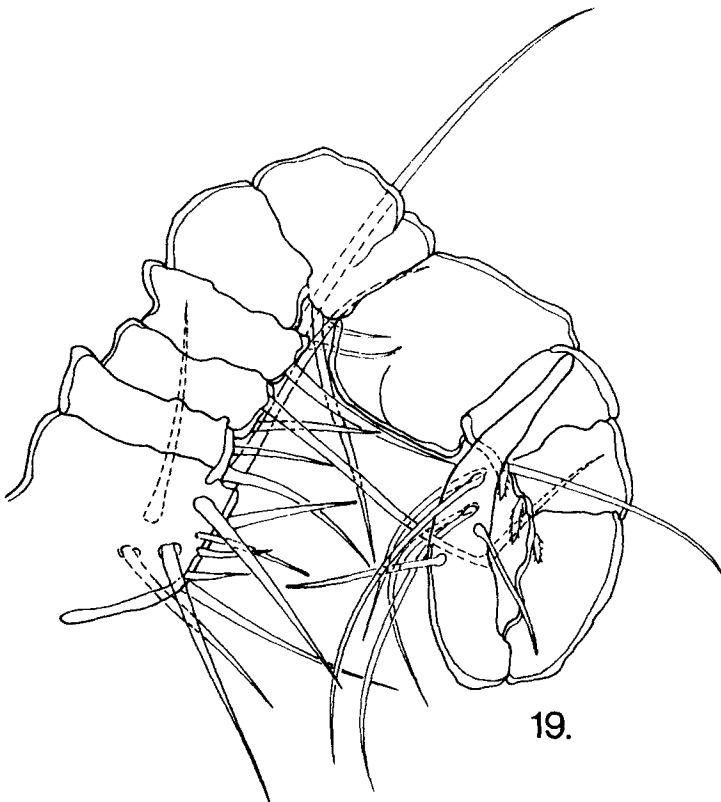
Figs 8-12: 8. P₁, 9. P₂, 10. P₃, 11. P₄, 12. Enp₃P₄.



Figs 13–17: Mouthparts: 13. Maxillule, 14. Maxillary gnathobase, 15. Maxillary palp, 16. Mandible, 17. Maxilla.



50µm



50µm

Figs 18-19: 18. Male P₅ & P₆, 19. Male A₁.

However, Dr. G. A. Boxshall (British Museum) kindly re-examined the cotype and dissected some additional syntypic specimens. He found that both aforementioned characters had been ill-observed by the original describer, and in fact correspond exactly with our observations. The description of *H. korodiensis* should therefore be amended accordingly.

Note

Dr. C. A. Boxshall informs us that, in cooperation with the late Mrs. E. Etta, he also found *H. korodiensis* in the River Bossy in Nigeria, while, finally we also found specimens in samples from the brackish Ebrie lagoon, Ivory Coast (collected by L. Saint-Jean).

The species thus appears to be fairly common and widespread in estuarine and lagunal environments along the West African Coast.

Acknowledgement

We are grateful to Dr. G. A. Boxshall (British Museum, nat. hist.) for his help with the status of the type specimens of *H. korodiensis*.

References

- Onabamiro, S. D., 1952. Four new species of *Cyclops* sensu lat. (Crustacea: Copepoda) from Nigeria. Proc. zool. Soc. Lond. 122: 253–266.