

TWO REMARKABLE NEMATODES OF THE AFRICAN SNAKE FISH, *ERPETOICHTHYS CALABARICUS*, FROM NIGERIA

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INTRODUCTION

The family Polypteridae (bichirs), confined to the freshwaters of tropical Africa, contains nine species of *Polypterus* Lacepède, 1803 and only one species of *Erpetoichthys* Smith, 1865. Bichirs are popular aquarium fishes, and among them, *E. calabaricus* (snake fish or reedfish) is imported in particularly large quantities from the natural habitats of Nigeria. Whereas the species of *Polypterus* are already known to harbour 5 nematode species of 4 families (see Conclusion), the parasite fauna of *E. calabaricus* has not yet been studied. Presented in this study are the first records of two nematode species in this host.

MATERIALS and METHODS

Fish hosts (n = 2) of *Erpetoichthys calabaricus* (Fig. 1) were obtained from a pet store in the Czech Republic where they had been directly imported from Nigeria.

Eight specimens of nematodes were removed from the intestine of the fish, fixed in 4 % formaldehyde and cleared with glycerine for light microscopy examination.

A light microscope equipped with differential interference contrast (Nomarski DIC) and digital image analysis (Micro Image 4) were used for the morphometrical study.

Drawings were made, using an Olympus microscope drawing attachment.

RESULTS

Batrachocamallanus siluranae Jackson et Tinsley, 1995

Description (one female specimen): Small, yellowish nematode; body length 3.50 mm, maximum width 0.17mm. Cuticle thick, with marked transverse striations. Orange-brown buccal capsule barrel-shaped; its inner surface smooth, outer surface with sclerotised granules different in size (Fig. 3). Oesophagus divided; anterior muscular portion claviform, about the same length as the glandular one. Deirids somewhat posterior to nerve ring. Vulva preequatorial, situated at 44 % of body length (Figs. 2C,4). Tail terminating in a crown of 5 mucrons (Fig 2D).

Remarks

Representatives of *Batrachocamallanus* Jackson et Tinsley, 1995 (Spirurida: Camallanidae) have so far only been described in aquatic clawed toads (*Xenopus* sp.) from Africa. The finding of a member of the genus in the freshwater polypterid fish may indicate an accidental infection acquired by *E. calabaricus* while feeding infected copepods, probable intermediate hosts of the parasite. Considering the subadult stage of the presented nematode specimen, *E. calabaricus* may well serve as a paradesinitive host of *B. siluranae*.

***Gendria polypteri* Vassiliadès et Chevalier, 1973**

Description (3 male, 4 female specimens): Small-sized, whitish to yellowish nematodes; cuticle with very fine transverse striations. Head surrounded by a distinct cephalic vesicle (Figs. 5A, 6). Oesophagus undivided, consisting of cylindrical anterior muscular portion and longer posterior muscular-glandular portion (Fig. 5A).

Male: Body length 2.78 – 2.92 mm, maximum width 0.15 – 0.17 mm. Precloacal sucker well developed; twelve paired and one unpaired caudal papillae present; caudal alae absent (Fig. 5E). Spicules equal, 0.12 – 0.15 mm long (Fig. 5F).

Female: Body length 2.50 – 3.67 mm. Vulva postequatorial, situated at 57.20 - 71.42 % of body length; vulvar lips slightly elevated; uteri opposed.

Remarks

The genus *Gendria* Baylis, 1930 (Ascaridida, Quimperidae) includes six species parasitizing freshwater fishes and amphibians. Three species occur in hosts with African distribution, two of them are parasitic in fishes only: *G. Tilapiae* Baylis, 1930 in *Tilapia galilaea* (Cichlidae) and *G. polypteri* in *Polypterus senegalus* (Polypteridae). The morphology of specimens from *E. calabaricus* is more or less identical with that described for *G. polypteri* by Vassiliadès et Chevalier (1973).

CONCLUSION

Fishes of Polypteridae are so far known to host 5 nematode species: *Camallanus polypteri* Kabré et Petter, 1997 from the Nile bichir (*P. bichir* Lacepède, 1803); *Amplicaeum* sp. (larva, type I) and *Spirocamallanus spiralis* (Baylis, 1923) from the saddled bichir (*P. endlicheri* Heckel, 1847); and *Amplicaeum* sp. (larva, type I), *Gendria polypteri* Vassiliadès et Chevalier, 1973 and *Rhabdochona congolensis* Campana-Rouget, 1961 from the grey bichir (*P. senegalus* Cuvier, 1829).

The present finding of *G. polypteri* in *Erpetoichthys calabaricus* represents a new host record as well as the first record of this parasite from Nigeria.

As to the finding of *Batrachocamallanus siluranae*, currently a parasite of clawed toads, *E. calabaricus* may well serve as a paradesinitive host of the nematode species, which cannot attain gravidity in fishes.

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Figure Captions (popisky k obrázkům)

Figure 1

Erpetoichthys calabaricus Smith, 1865

Family: Polypteridae (Bichirs)

Order: Polypteriformes

Class: Actinopterygii (ray-finned fishes)

Distribution: Africa - Ogun River mouth in Nigeria to Chiloango River in Congo

Importance: aquarium

Figure 2

Batrachocamallanus siluranae female from reedfish, *Erpetoichthys calabaricus*.

A – anterior part of body; B – cephalic end; C – region of vulva; D – posterior end, lateral view. Scale bars in mm.

Figure 3

Photomicrograph of buccal capsule covered with sclerotised granules. Scale bar = 50 mm.

Figure 4

Photomicrograph of vulva; anterior lip provided with prominent rugose cuticular process directed posteriorly. Scale bar = 50 mm.

Figure 5

Gendria polypteri Vassiliadès et Chevalier, 1973. A – anterior part of female, lateral view; B – posterior end of female, lateroventral view; C – region of vulva; D – egg; E – posterior end of male, lateral view; F – spicules. Scale bars in mm.

Figure 6

Photomicrograph of cephalic vesicle. Scale bar = 50 mm.

Figure 7

Photomicrograph of spicule supported with slightly sclerotised wing-shaped sheath. Scale bar = 100 mm.
