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NOTE

First record of the trypanorhynchidean parasite *Nybelinia lingualis* Cuvier, 1817 in the squid *Todaropsis eblanae* (Cephalopoda: Ommastrephidae)*

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SUMMARY: Trypanorhynch plerocercoids of *Nybelinia lingualis* Cuvier, 1817, are described from the ommastrephid squid *Todaropsis eblanae* through the use of scanning electron microscopy. This finding represents a new host record, and the first report of *Nybelinia lingualis* in Ibero-Atlantic Cephalopods.

Key words : Nybelinia lingualis, Todaropsis eblanae , SEM, Ibero-Atlantic Cephalopods.

RESUMEN: En el presente trabajo se describen mediante microscopía electrónica de barrido los plerocercoides tripanorrinquídeos de *Nybelina lingualis* Cuvier, 1817, parásitos del omastréfido *Todaropsis eblanae*. Este hallazgo constituye un nuevo registro hospedador, y la primera cita de *Nybelinia lingualis* en Cefalópodos Ibero-Atlánticos.

Palabras clave : Nybelinia lingualis, Todaropsis eblanae, MEB, Cefalópodos Ibero-Atlánticos.

INTRODUCTION

The reduced morphological complexity of many helminth parasites makes discrimination among species a vexing problem. The importance of intraspecific variation in the taxonomy of marine cestodes and their complex life cycles often give rise to a series of distinct larval and adult forms which further complicate establishing relationships among various developmental stages within and among species (Williams, 1968; Stunkard, 1977). In this paper, SEM study is presented because it provides a combination of increased depth of field, resolution and magnification in the identification and examination of the morphology and microtopography of the plerocercus of *Nybelinia lingualis*, parasites of *Todaropsis blanae* (Ball, 1841) in southeastern North Atlantic.

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MATERIAL AND METHODS

Plerocercoid larvae were obtained from the digestive tracts of 600 medium-to-large sized (greater than 200 g.) *T. eblanae* squid collected as by-catch in the trawler fishery targetting hake, blue whiting and Norway lobster on the continental slope and shelf of Galicia (30-500 m depth). Upon removal of the visceral organs larval cestodes were easily located and removed from their sites between the mucous and

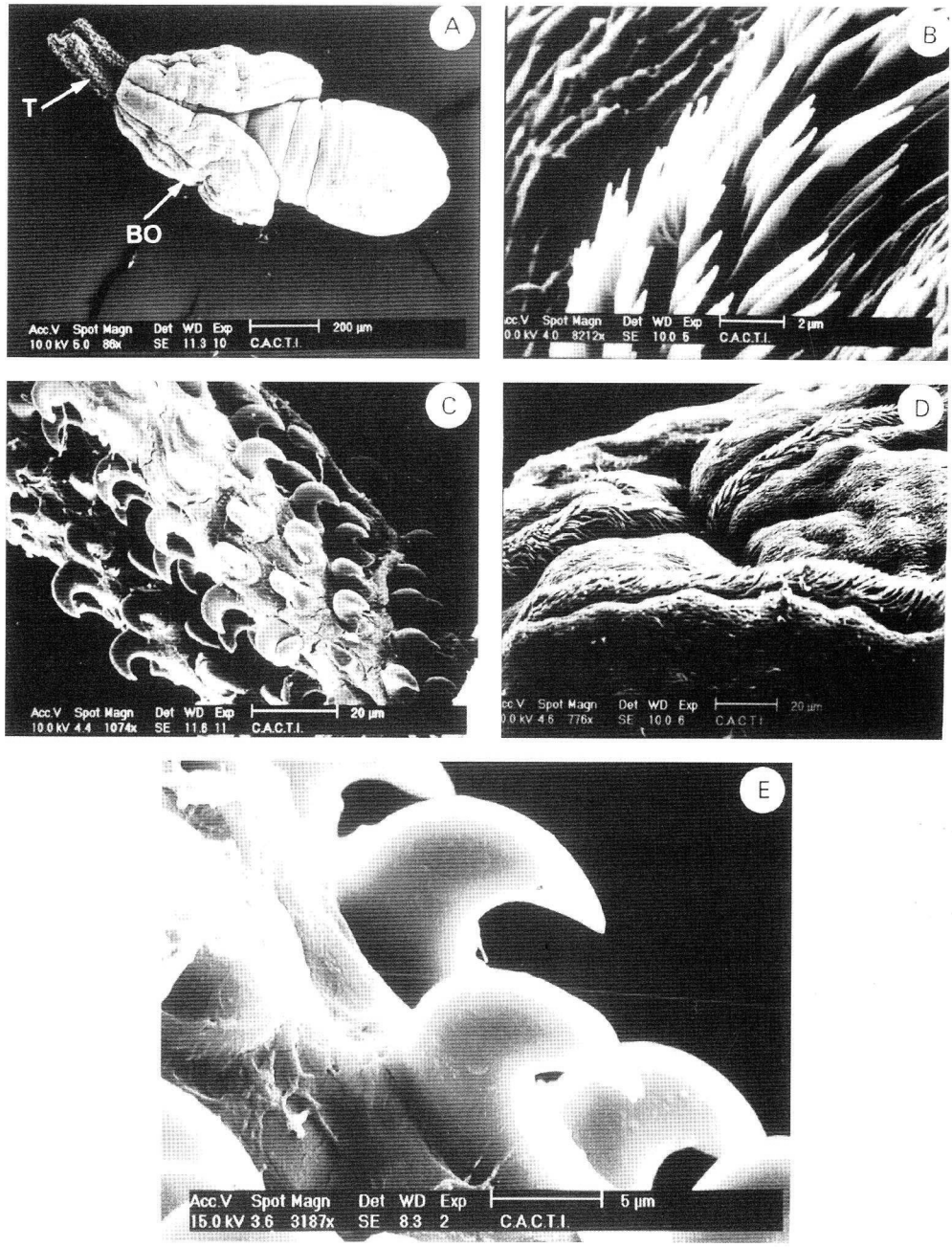

FIG. 1. – Plerocercoid larvae of *Nybelinia lingualis*. A. – Scolex bearing four bothridia (BO) and four spined tentacles (T) used to attach to the gut wall of the squid. B. – Enlargement of bothridia with microtriche-like structures. C. – Tentacles armed with hooks in spirals. D. – Region of the tentacle with dense covering of spines on portion of apical surfaces of bothridia. E. Metabasal hooks.

muscular membrane of the stomach wall. They were first studied alive in saline solution (0.9% NaCl); then killed in formaline saline (4% formaline in 1% saline) and fixed in the same medium for 24 h. They were subsequently transferred to 70% ethanol.

Additional glutaraldehyde-fixed specimens were prepared for SEM by dehydrating in an ethanol series, critical-point-dried in CO_2 using a Polaron E3000, and sputter-coated in a Polaron SC500 using 60% gold/palladium. They were examined with a Philips XC30 SEM operated at 5-12 kV. Subsequent decoating of specimens can be achieved in acetone if necessary. A whole-mount voucher specimen has been deposited in the Department of Invertebrate Zoology, Santa Barbara Museum of Natural History, CA 93105-2396 USA.

RESULTS

Cestoda: Trypanorhyncha: Tentaculariidae *Nybelinia lingualis* Cuvier, 1817 (Fig. 1).

Description: plerocercoid larvae shape pyriform, rounded to slightly flattened anteriorly, tapering posteriorly. Lengths range from 0.8-1.2 mm, maximum widths from 0.9-1.1 mm in region of posterior portion of bothridia. Strobila acraspedote; pars bothridialis lengths range from 0.6-0.62 mm; pars bulbosa lengths range from 0.24-0.28 mm, anterior end partially overlapped by the pars bothridialis. Pars vaginal, lengths range from 0.24-0.28 mm. Four platelliform to bean-shaped bothridia, edges crenulate, longer than wide, lengths 0.88-1.22 mm; four cylindrical tentacles present, slightly attenuated at the ends, diameter range from 0.8-1.0 excluding hooks; straight tentacular sheaths highly coiled. Tentacular retractor muscles insert near middle of tentacular bulbs which are 0.75 mm in length, about two times longer than wide, midly divergent posteriorly. Armature homeocanthus, with 42 rows of hooks; hooks set in diagonal spiral rows, five or six hooks visible in each row in distal section; each row separated by space about one-half length of hooks, 16-19 µm in length.

DISCUSSION

Several undetermined or undescribed species of the trypanorhnchidean genus *Nybelinia* are widely spread among 22 species of ommastrephid squids in the World Ocean (for review see Hochberg, 1990). Dollfus (1958), Yamaguti (1934), Joyeux and Baer (1936), and Stunkard (1977) figured and briefly described the post-larval stages of several species of *Nybelinia*. Combined characters of body measurements, armature of the tentacles and hook pattern, indicate that the material described above does belong to *N. lingualis* Cuvier, 1817, a common parasite in most Mediterranean and Atlantic teuthoid squids (Gaevskaya, 1976; Gaevskaya and Nigmatullin, 1975; Belyaeva, 1979; Naidenova *et al.*, 1985). Minor differences in the morphometry of the velum and bothridia may represent normal variations in the population, may be due to host-related differences or simply due to specimen preparation differences. A squid is probably infected by larval cestodes its food of small bony fishes of the species *Trachurus trachurus*, *Lophius piscatorius* and *Conger conger* (Quinteiro, 1990; Rasero *et al.*, 1996).Thus, *T. eblanae* is the supplementary host of plerocercoid larvae of *Nybelinia* in Galician waters.

This finding represents a new host record, and the first report of plerocercoids of *N. lingualis* in Cephalopods from Ibero-Atlantic waters.

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