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DESCRIPTION OF THE ADULT FORM OF *NYBELINIA (SYNGENES) ROUGETCAMPANAE* DOLLFUS, 1960 AND SOME NEW DATA ON *N. (N.) BISULCATA* (LINTON, 1889) (TRYPANORHYNCHA: TENTACULARIIDAE)

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The adult form of Nybelinia (Syngenes) rougetcampanae *Dollfus, 1960 is described, parasitizing one specimen of* Sphyrna lewini *(Griffith & Smith, 1834) out of the five ones necropsied and one out of six* Notorhynchus pectorosus *(Garman, 1884) was found harbouring* N. (N.) bisulcata *(Linton, 1889). The finding of these cestodes under Trypanorhyncha in sharks captured off the coast of Rio Grande do Sul State, Brazil, amplifies their known geographical distribution and adds new host records for these parasites.*

Key words: Cestodes – *Nybelinia* – Trypanorhyncha – adult form – sharks – Brazil

In order to add new data on the Brazilian Trypanorhyncha, in this paper some findings related to new host records, amplifying the known geographical distribution of the species herein studied and the adult form of *Nybelinia (Syngenes) rougetcampanae* Dollfus, 1960 now described, are presented to accomplish our previous papers on this subject (São Clemente & Gomes, 1989a, b).

MATERIALS AND METHODS

Five specimens of *Sphyrna lewini* (Griffith & Smith, 1834) and six of *Notorhynchus pectorosus* (Garman, 1884) were necropsied for helminths. Out of these, only one of both were positive for cestodes of the order Trypanorhyncha. Sharks were captured off the southern Brazilian Coast (30° 40'S – 33° 40'S, 53° 20'W – 50° 40'W). The material was fixed in alcohol-formalin-acetic acid (AFA), stained with Mayer's Carmalum, cleared with beechwood creosote and preseved in Canada balsam. The drawings were made with a drawing tube. All measurements are in millimeters, unless otherwise indicated. Most of ranges are in parentheses. Voucher specimens were deposited in the Helminthological Collection of Instituto Oswaldo Cruz (CHIOC), Rio de Janeiro, Brazil.

RESULTS

Family Tentacullariidae Poche, 1926
Nybelinia (Syngenes) rougetcampanae Dollfus, 1960
(Figs 1-3)

Description: (based on six adult specimens). Maximum total length 30.95. Scolex (Fig. 1) subcylindrical, 0.60 (0.51-0.69) long, wider at the pars bothridialis level. Pars bothridialis longer than the half of the scolex, 0.33 (0.28-0.38) long and 0.30 (0.25-0.35) wide. Pars vaginalis 0.36 (0.31-0.41) long with quite coiled sheats. Pars bulbosa 0.20 (0.18-0.22) long and 0.10 (0.07-0.13) wide, individual bulbs 0.04 (0.03-0.05) wide, vellum short, 0.07 long. Tentacular armature heteroacanthous (Fig. 2). Tentacular width at the hookless region 0.03. Basal region with hooks of different forms and dimentions. The first three rows with hooks 23-26 µm long, present a bulge at their middle region and implantation base 5-8 µm wide, followed by another three rows with hooks 21-23 µm, bulgeless, with longer tips and implantation base 5-8 µm wide. Metabasal region with longer hooks 26-29 µm long, curved and larger implantation base, 13-26 µm wide. Each row with 12 hooks per turn. Strobila anapolytic,

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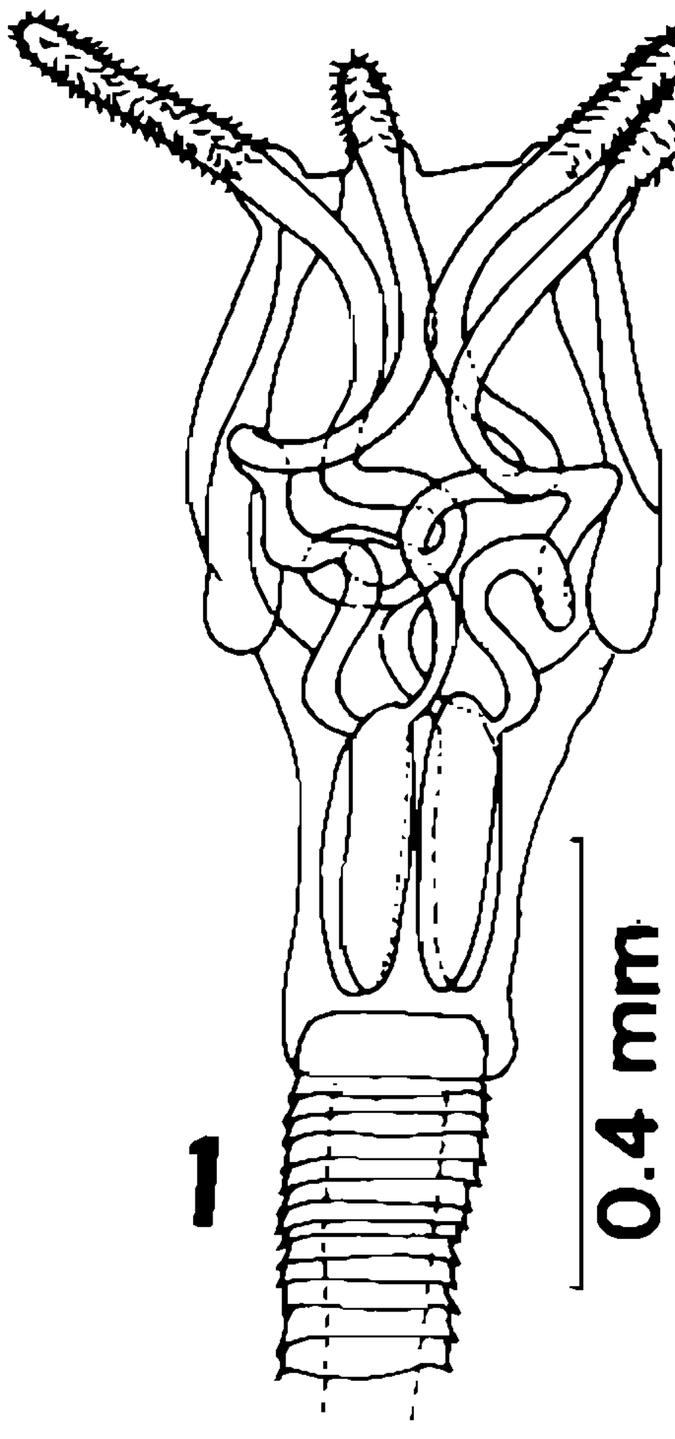
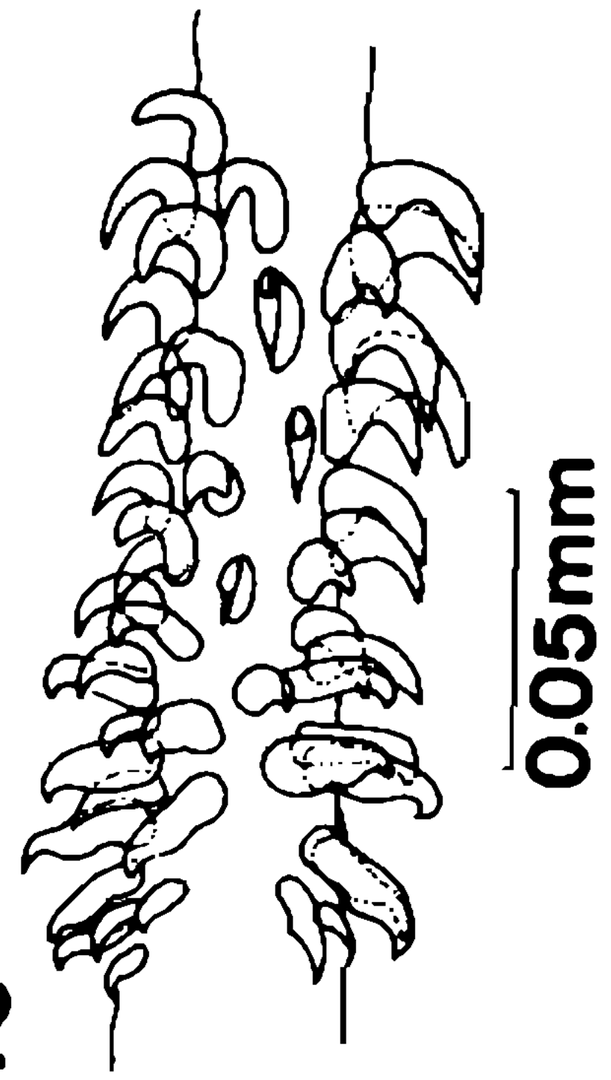
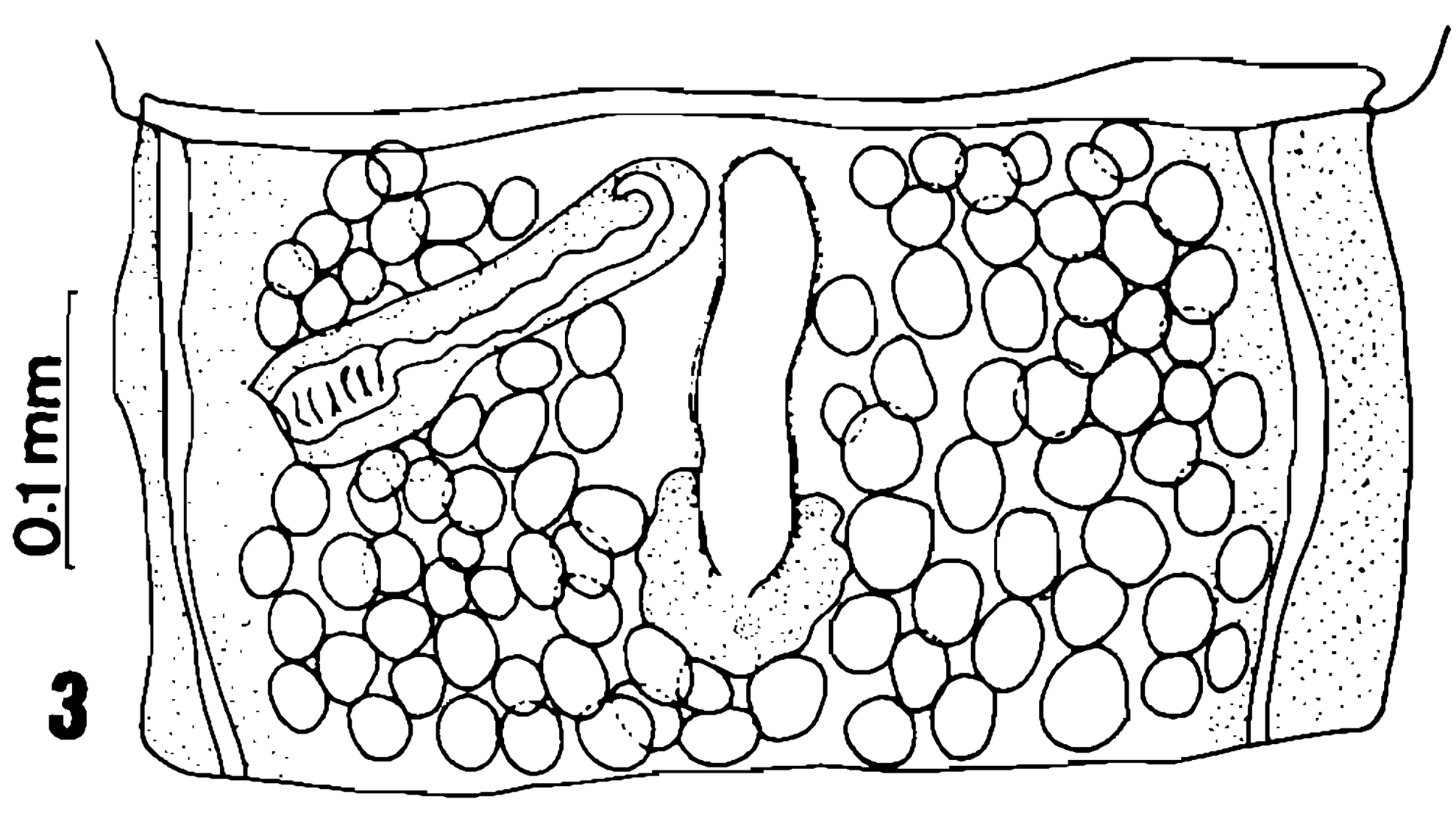
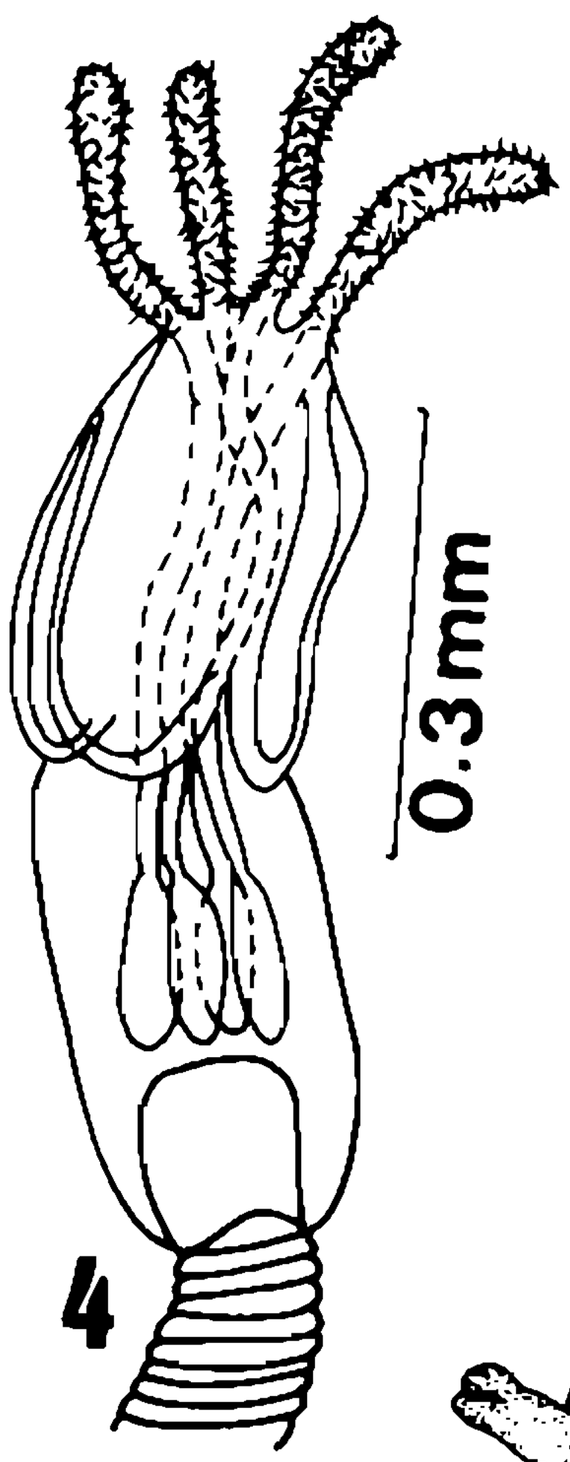


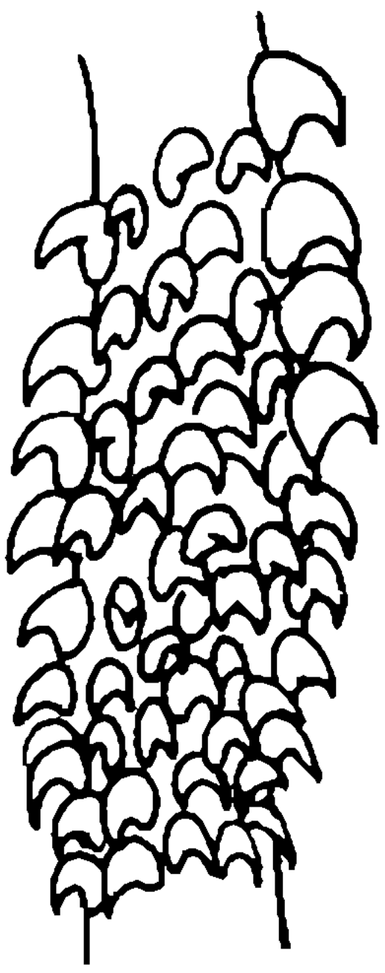


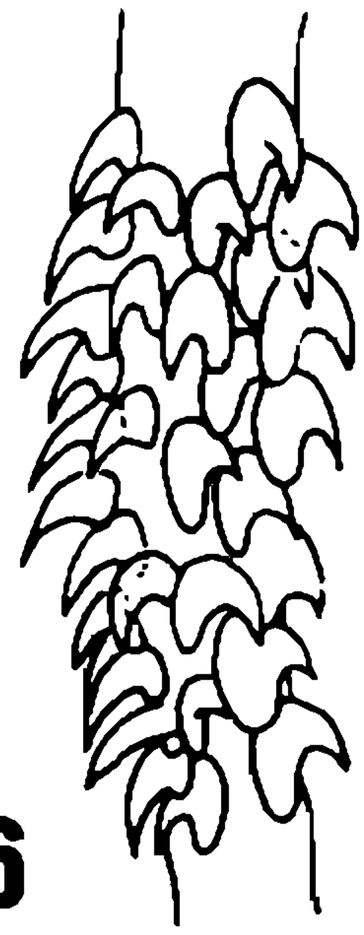


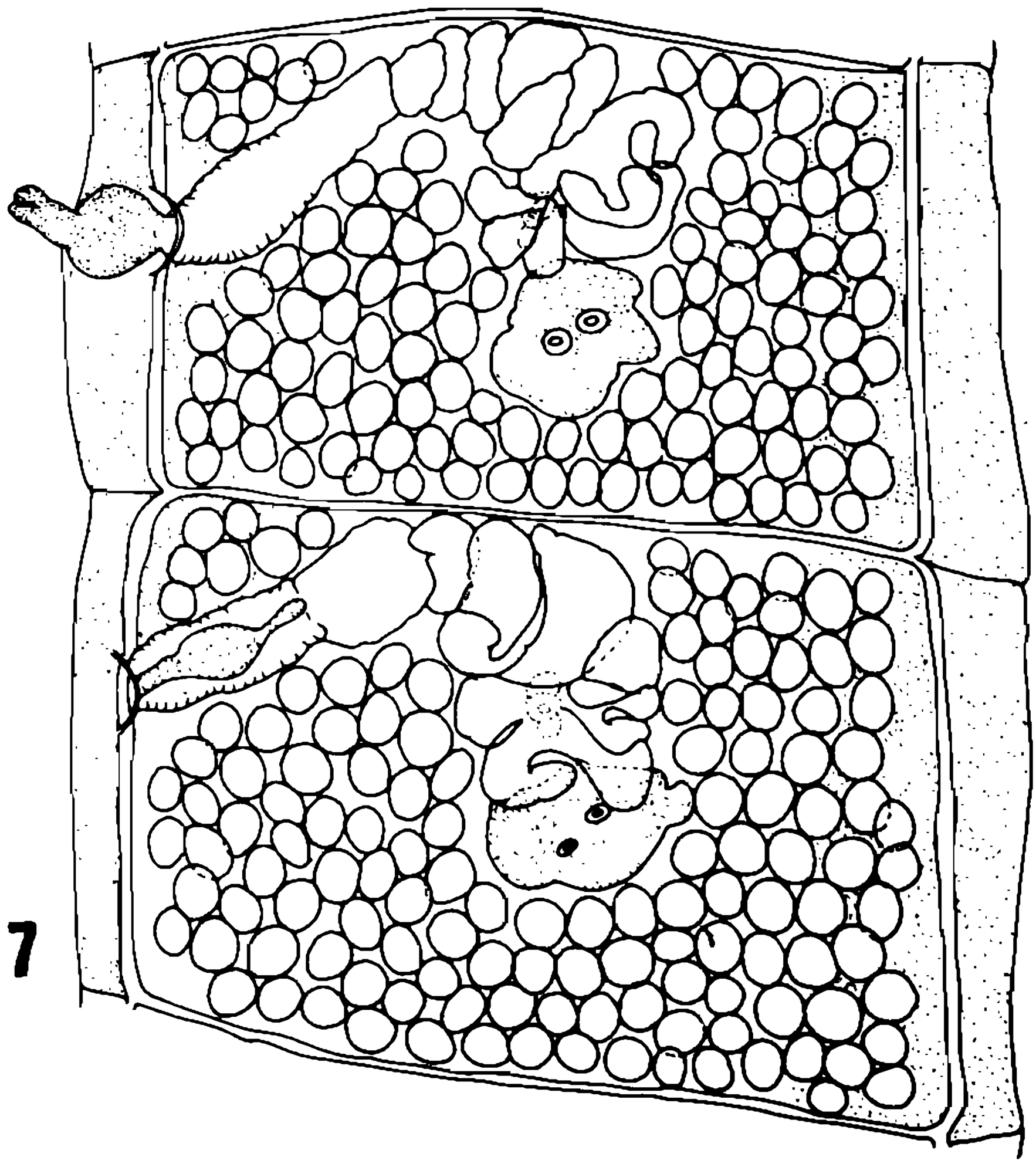
Nybelinia (Syngenes) rougetcampanae Dollfus, 1960 – Fig. 1: scolex. Fig. 2: metabasal region, external surface. Fig. 3: mature proglottid.

about 30.00 in length with more than 400 proglottids, all larger than longer. Mature proglottid craspedote (Fig. 3), 0.19 (0.18-0.20) long and 0.34 (0.30-0.38) wide. Genital pores irregularly alternated, located in middle of the proglottid. Cirrus pouch tubular reaching in the middle region of the proglottid, 0.18 (0.16-0.20) long and 0.03 (0.02-0.04) wide. Testes numerous, more than 100, rounded, occupying nearly all the proglottid and separating the ovary from the posterior margin of the proglottid, with 26-29 µm in diameter. Ovary rounded, near to the posterior region of the proglottid, 78-97 µm long and 65-78 µm wide. Uterus tubular, reaching the anterior margin of the proglottid. Vitellaria distributed in lateral









Nybelinia (N.) bisulcata (Linton, 1889) – Fig. 4: scolex. Fig. 5: basal region, external surface. Fig. 6: metabasal region, external surface, near the apical portion. Fig. 7: mature proglottid.

bands, reaching all the proglottid length, overpassing the osmoregulatory canals.

Host: *Sphyrna lewini* (Griffith & Smith, 1834), Sphyrnidae, common name: "tubarão martelo".

Habitat: Spiral valve.

Voucher specimens deposited: CHIOC no. 32,567 a-d.

Nybelinia (Nybelinia) bisulcata (Linton, 1889) Dollfus, 1929.
(Figs 4-7)

Synonymy: *Rhynchobothrium bisulcatum* Linton, 1889; *Tetrarhynchus bisulcatus* Linton, 1890; *Tetrarhynchus bisulcatum* Linton, 1897.

Redescription: (Based on four adult specimens). Maximum total length 39.30. Scolex (Fig. 4) subcylindrical, 0.87 (0.72-1.02) long, widest at the level of pars bothridialis. Pars bothridialis 0.50 (0.38-0.62) long by 0.30 (0.25-0.35) wide. Pars vaginalis 0.52 (0.43-0.61) long with slightly coiled sheats, sometimes straight. Pars bulbosa 0.19 (0.15-0.23) long and 0.20 (0.16-0.24) wide. Individual bulbs 0.05 (0.04-0.06) in width. Pars postbulbosa 0.02 and vellum 0.15 (0.12-0.18) long respectively. Width of tentacules at the basal region, 18-26 µm. Metabasal region 18-21 µm. Tentacular armature homeacanthous, basal region (Fig. 5) with short hooks 10 µm long, implantation base 10 µm wide, with abruptly turned points. In the metabasal region the hooks increase in size, presenting 13 µm in length and implantation base 13 µm wide, with the same oncotaxy in the basal region. At the end of the metabasal region, near the apical portion (Fig. 6) the hooks of the internal surface are longer, with 18 µm in length and implantation base narrower, 6-7 µm wide. Strobila anapolytic, maximum length 38.20, with numerous proglottids, all of them wider than longer. Mature proglottid acraspedote (Fig. 7), 0.33 (0.25-0.41) long and 0.47 (0.41-0.53) wide. Genital pores irregularly alternated, not marginal, slightly ventral, located 30-40% from anterior margin. Cirrus pouch tubular extending forward, with 0.13 (0.11-0.15) in length and 0.03 (0.02-0.04) in width, cirrus with globular base. External seminal vesicle coiled, located between the ovary and the anterior margin of the proglottid. Testes numerous, more than 100, rounded, occupying nearly all the proglottid, 29-36 µm in diameter, separating the ovary from the posterior margin of the proglottid. Ovary rounded with irregular configuration, located at the middle of the proglottid with 77-128 µm in diameter. Vitellaria distributed in lateral bands, extending for all the proglottid length, overpassing the osmoregulatory canals. Uterine pore present located in the middle region of the proglottid. Mature proglottids in transition to gravid ones, 0.45 (0.38-0.52) in length and 0.52 (0.48-0.56) in width, with some eggs in the interior; eggs rounded, 22-29 µm in diameter.

Host: *Notorhynchus pectorosus* (Garman, 1884), Hexanchidae, common name: "cação bruxa".

Habitat: Spiral valve.

Voucher specimens deposited: CHIOC no. 32,565 a-c.

DISCUSSION

Nybelinia (Syngenes) rougetcampanae Dollfus, 1960

Based on a single larval form Dollfus (1960) described *Nybelinia (S.) rougetcampanae* recovered from *Liosaccus cutaneus* (Günther) captured in Dakar, Africa. Up to the present there is no further report on another finding of this species, in despite of studies regarding different representants under the genus *Nybelinia* Poche, 1926 (Heinz & Dailey, 1974; Carvajal et al., 1976; Stunkard, 1977; Chandra & Rao, 1985; Bilquees, 1987).

Even based on adult forms with a smaller scolex, due to a shrinkage condition, it was possible to identify the herein studied material to that of Dollfus (1960), considering size and shape of hooks of basal and metabasal regions, respectively. These characters are defined in both, larval form and adult and fully agree with the original description by Dollfus (1960). In this way, besides the presentation of the adult form of this species, a new host record is given amplifying also its known geographical distribution.

Nybelinia (Nybelinia) bisulcata (Linton, 1889) Dollfus, 1929

This species was originally described as *Rhynchobothrium bisulcatum* by Linton (1889) on basis on the adult form. Later, (1890) the

same author considered the species under another genus and, with the new combination, referred as *Tetrarhynchus bisulcatus*, maintaining another designation, *T. bisulcatum* (1897 a-b, 1901, 1905, 1907 and 1924).

Dollfus (1929) proposed its inclusion in the genus *Nybelinia* Poche, 1926 and without having examined type material of *N. bisulcata* (Linton, 1889) and according to Stunkard (1977), had no data enough to consider the species either as a synonym or a variation of *N. lingualis* (Cuvier, 1817). But later, Dolffus (1942) reported ten valid species under *Nybelinia*, including and distinguishing *N. bisulcata* from the others, in a key to the species.

Data on the specimens herein presented compared to those of Linton (op. cit.), show some variations regarding to the scolex dimentions, as well as to the pars bothridialis with means of 0.31 in width compared to 0.75 and 0.50 in length to 0.75, respectively. The tentacular oncotaxy presents the same aspect described by the former author (op. cit.). The only difference concerns to the maximum length of the hooks (18 μm, when compared to 23 μm). Linton do not refer if the changes in shape and size occur in both surfaces of the tentacles. Dollfus (1942) in a restudy of *N. bisulcata* described hooks in one surface in the posterior region as possessing a large basal implantation with abruptly turned points and slender and longer hooks, with a narrower base in the other surface, what was also observed herein. Stunkard (1977) describing the larval form of *N. bisulcata* presents large dimentions concerning to the scolex, than those previously reported (op. cit.) or observed during this study. The tentacular oncotaxy is the same referred to *N. bisulcata* and this species is reported for the first time in the South Atlantic and also in a new host.

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