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***Acanthochondria triangularis* sp. nov.**
(Copepoda, Poecilostomatoida, Chondracanthidae)
parasitic on *Urophycis brasiliensis* and *U. mystaceus*
(Osteichthyes, Phycidae)
from the Southern Brazilian coastal zone

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Abstract

A new species of *Acanthochondria* (Copepoda, Poecilostomatoida, Chondracanthidae) parasitic on Brazilian codling *Urophycis brasiliensis* (Kaup, 1858) and the gulf hake *U. mystaceus* Ribeiro, 1903 from the Brazilian coastal zone, is described and illustrated. The new species of *Acanthochondria* differs from the other species of genus by a combination of characters that include shape of the head, shape of the trunk and size of the trunk posterior processes. This is the first record of *Acanthochondria* species from the South American Atlantic Ocean.

Key words

Acanthochondria triangularis sp. nov., Chondracanthidae, Copepoda, fish, Phycidae, Brazil

Introduction

Acanthochondria Oakley, 1927 is the largest genus of Chondracanthidae Edwards, 1840 containing 54 species distributed throughout the world oceans (Ho and Kim 1995, Ho *et al.* 2000). To date, only three species of *Acanthochondria* from the neotropical region were recorded: *A. ophidii* (Krøyer, 1863), *A. phycidis* (Rathbun, 1886) and *A. sicyasis* (Krøyer, 1863), all of them parasitic on fishes from the South American Pacific Ocean (Atria 1980, Villalba and Fernández 1985, Farfán *et al.* 1993, Riffo 1994).

In this report, a new species of *Acanthochondria* parasitic on phycid fishes *Urophycis brasiliensis* (Kaup, 1858) and *U. mystaceus* Ribeiro, 1903 from Brazil, is described and illustrated.

Materials and methods

The copepods studied are part of the material collected from 75 specimens of *U. brasiliensis* and 55 specimens of *U. mystaceus* from the coastal zone of the State of Rio de Janeiro, and

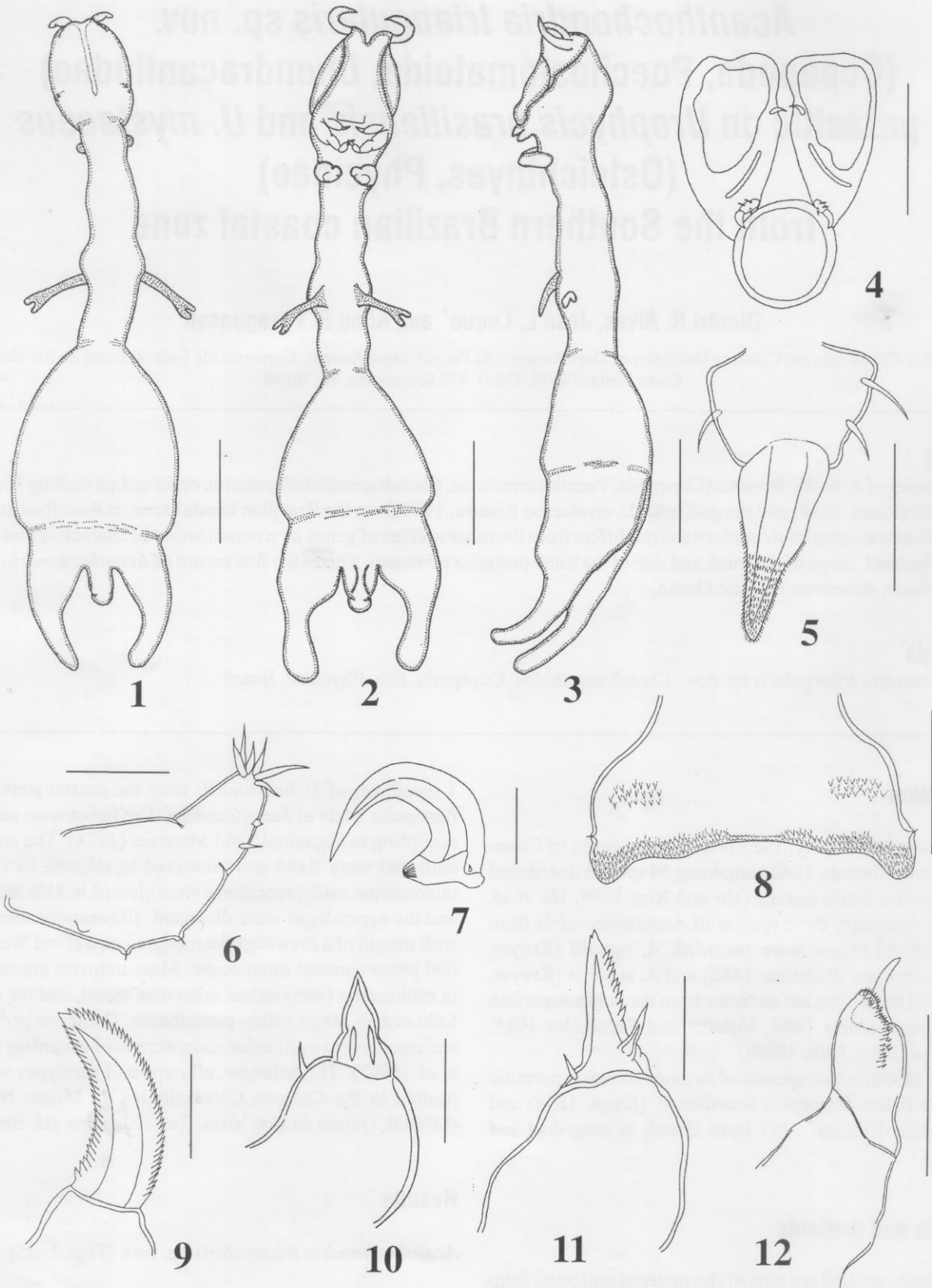
3 specimens of *U. brasiliensis* from the coastal zone of Florianópolis, State of Santa Catarina. The fishes were identified according to Figueiredo and Menezes (1978). The copepods collected were fixed and preserved in ethanol 70°GL. For microscopic study, specimens were cleared in 85% lactic acid and the appendages were dissected. Illustrations were made with the aid of a drawing tube mounted on a Hund Wetzlar H-600 phase contrast microscope. Measurements are indicated in millimeters (mm) unless otherwise stated, and the mean is followed by range within parentheses. The terms prevalence and mean intensity of infestation were used according to Bush *et al.* (1997). The holotype, allotype and paratypes were deposited in the Coleção Carcinológica do Museu Nacional (MNRJ), Quinta da Boa Vista, Rio de Janeiro, RJ, Brazil.

Results

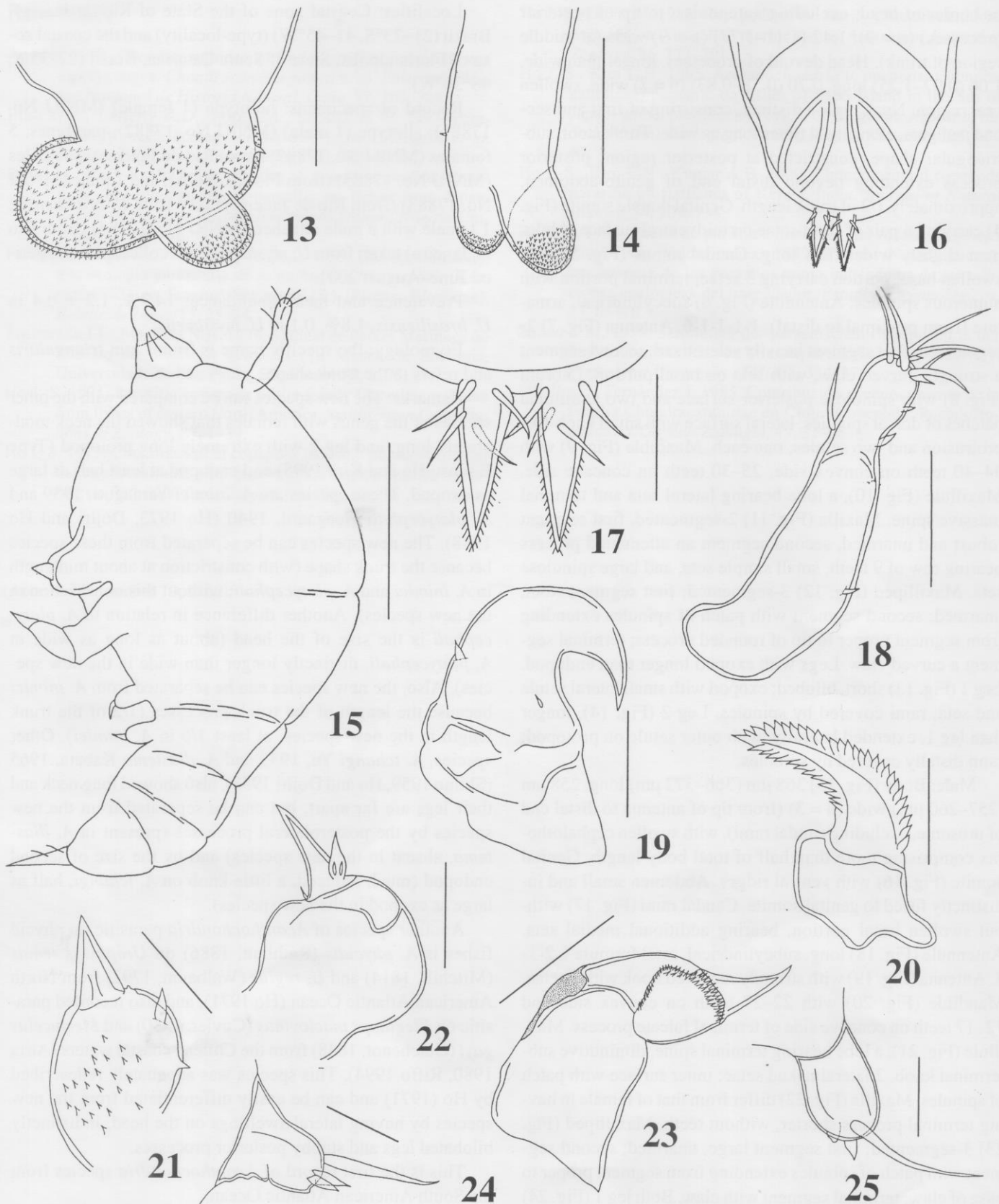
Acanthochondria triangularis sp. nov. (Figs. 1–25)

Female: Body (Figs. 1–3) with relatively slender head and neck, stout trunk. Total length 6.08 (5.28–7.22) (from anteri-

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Figs. 1–12. *Acanthochondria triangularis* sp. nov. female, holotype: 1 – dorsal view; 2 – ventral view; 3 – lateral view; 4 – genital-abdomen, ventral; 5 – caudal ramus; 6 – antennule; 7 – antenna; 8 – labrum; 9 – mandible; 10 – maxillule; 11 – maxilla; 12 – maxilliped. Scale bars = 1 mm (Figs. 1–3), 275 μ m (Fig. 4), 30 μ m (Figs. 5 and 10), 70 μ m (Figs. 6 and 11), 165 μ m (Fig. 7), 95 μ m (Fig. 8), 65 μ m (Fig. 9), 130 μ m (Fig. 12)



Figs. 13–25. *Acanthochondria triangularis* sp. nov. female, holotype: 13 – leg 1; 14 – leg 2. Male, allotype: 15 – lateral view; 16 – genito-abdomen; 17 – caudal rami; 18 – antennule; 19 – antenna; 20 – mandible; 21 – maxillule; 22 – maxilla; 23 – maxilliped; 24 – leg 1; 25 – leg 2. Scale bars = 75 μ m (Figs. 13 and 16), 330 μ m (Fig. 14), 165 μ m (Fig. 15), 30 μ m (Fig. 18), 45 μ m (Figs. 19 and 22), 20 μ m (Figs. 17, 20, 21, 24 and 25), 15 μ m (Fig. 23)

or border of head, excluding antennules, to tip of posterior processes) ($n = 9$); 1.42 (1.11–1.77) ($n = 9$) wide (at middle region of trunk). Head devoid of processes, longer than wide, 1.06 (0.97–1.25) long, 0.70 (0.58–0.83) ($n = 7$) wide, swollen oral region. Neck region distinct, consisting of first and second pedigers, elongate, 4 times long as wide. Trunk stout, subtriangular shape, constricted at posterior region; posterior process extending beyond distal end of genito-abdomen, approximately 1/2 of trunk length. Genital double somite (Fig. 4) carrying a pair of short setae on midventral surface. Abdomen slightly wider than long. Caudal ramus (Fig. 5) with swollen basal portion carrying 3 setae, terminal portion with numerous spinules. Antennule (Fig. 6) subcylindrical, armature (from proximal to distal): 1-1-1-1-6. Antenna (Fig. 7) 2-segmented; first segment heavily sclerotized; second segment a strongly curved claw, with seta on basal portion. Labrum (Fig. 8) with spinulose posterior surface and two additional patches of dorsal spinules; lateral surface with small knob-like protrusion and two setules, one each. Mandible (Fig. 9) with 34–40 teeth on convex side, 25–30 teeth on concave side. Maxillule (Fig. 10), a lobe bearing lateral seta and terminal massive spine. Maxilla (Fig. 11) 2-segmented, first segment robust and unarmed, second segment an attenuated process bearing row of 9 teeth, small simple seta, and large spinulose seta. Maxilliped (Fig. 12) 3-segmented; first segment stout, unarmed; second segment with patch of spinules extending from segment proper to tip of rounded process; terminal segment a curved claw. Legs with exopod longer than endopod. Leg 1 (Fig. 13) short, bilobed; exopod with small lateral setule and seta; rami covered by spinules. Leg 2 (Fig. 14), longer than leg 1, extended laterally, with outer setule on protopod; rami distally covered by spinules.

Male: Body (Fig. 15) 368 μm (366–372 μm) long, 258 μm (257–260 μm) wide ($n = 3$) (from tip of antenna to distal end of urosome, excluding caudal rami), with swollen cephalothorax comprising more than half of total body length. Genital somite (Fig. 16) with ventral ridges. Abdomen small and indistinctly fused to genital somite. Caudal rami (Fig. 17) without swollen basal portion, bearing additional medial seta. Antennule (Fig. 18) long, subcylindrical, setal formula 1-2-1-8. Antenna (Fig. 19) with strongly recurved hook with 2 setae. Mandible (Fig. 20) with 22–27 teeth on convex side and 12–17 teeth on concave side of terminal falcate process. Maxillule (Fig. 21), a lobe bearing terminal spine, diminutive subterminal knob, 2 lateral naked setae; inner surface with patch of spinules. Maxilla (Fig. 22) differ from that of female in having terminal process shorter, without teeth. Maxilliped (Fig. 23) 3-segmented; first segment large, unarmed; second segment with patch of spinules extending from segment proper to base of claw; terminal segment with claw. Both leg 1 (Fig. 24) and leg 2 (Fig. 25) with long outer seta on protopod, endopod a simple lobe, exopod with 2 terminal spiniform process.

Hosts: *Urophycis brasiliensis* (Kaup, 1858) (Phycidae) (type-host) and *U. mystaceus* Ribeiro, 1903.

Site of infestation: Oral-branchial cavity.

Localities: Coastal zone of the State of Rio de Janeiro, Brazil (21–23°S, 41–45°W) (type-locality) and the coastal zone of Florianópolis, State of Santa Catarina, Brazil (27°35'S, 48°36'W).

Record of specimens: holotype (1 female) (MNRJ No. 17881); allotype (1 male) (MNRJ No. 17882); paratypes: 5 females (MNRJ No. 17883) (from Rio de Janeiro), 3 females (MNRJ No. 17885) (from Florianópolis), and 1 male (MNRJ No. 17883) (from Rio de Janeiro) taken from *U. brasiliensis*; 1 female with a male attached (MNRJ No. 17884) (from Rio de Janeiro) taken from *U. mystaceus*. All collected in the period June–August 2001.

Prevalence and mean abundance: 14.7%, 1.2 ± 0.4 in *U. brasiliensis*, 1.8%, 0.1 in *U. mystaceus*.

Etymology: the specific name is from Latin *triangularis* and refers to the trunk shape.

Remarks: The new species can be compared with the other species of the genus with females that showed the neck moderately long, and leg 2 with extremely long protopod (Type E sensu Ho and Kim 1995) and endopod at least half as large as exopod. These species are *A. inimici* Yamaguti, 1939 and *A. platycephali* Heegaard, 1940 (Ho 1973, Dojiri and Ho 1988). The new species can be separated from these species because the trunk shape (with constriction at about midlength in *A. inimici* and *A. platycephali*; without this constriction in the new species). Another difference in relation to *A. platycephali* is the size of the head (about as long as wide in *A. platycephali*, distinctly longer than wide in the new species). Also, the new species can be separated from *A. inimici* because the length of the trunk processes (1/2 of the trunk length in the new species, at least 1/6 in *A. inimici*). Other species, *A. tchangi* Yu, 1935 and *A. diastema* Kabata, 1965 (Shiino 1959, Ho and Dojiri 1988), also showed long neck and their legs are far apart, but can be separated from the new species by the posterolateral processes (present in *A. diastema*, absent in the new species) and by the size of second endopod (much reduced, a little knob on *A. tchangi*, half as large as exopod in the new species).

Another species of *Acanthochondria* parasitic on phycid fishes is *A. phycidis* (Rathbun, 1886) on *Urophycis tenuis* (Mitchill, 1814) and *U. regius* (Walbaum, 1792) from North American Atlantic Ocean (Ho 1971), and also recorded parasitic on *Eleginops maclovinus* (Cuvier, 1830) and *Merluccius gayi* (Guichenot, 1848) from the Chilean coastal waters (Atria 1980, Rizzo 1994). This species was adequately redescribed by Ho (1971) and can be easily differentiated from the new species by having lateral swellings on the head, indistinctly bilobated legs and stubby posterior processes.

This is the first record of *Acanthochondria* species from the South American Atlantic Ocean.

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