

A new species of *Taeniastrotos* Cressey (Copepoda: Poecilostomatoida) from southern Brazil

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Abstract

A new species of *Taeniastrotos* is described from an ariid host, *Cathrops spixii*, caught in southern Brazil. It is the first member of the genus to be recorded from the Atlantic Ocean and can be distinguished from its four known congeners by the setation of the terminal endopodal segment of the fourth leg.

Introduction

In their revision of the family Taeniacanthidae, Dojiri & Cressey (1987) recognised 14 genera consisting of 91 species as valid. Only 13 genera are here treated as valid, following Kabata (1992), who reduced *Anchistrotos* Brian, 1906 to synonymy with *Taeniacanthus* Sumpf, 1871. Three of these genera and 13 species live in the oesophagus of sea urchins (Dojiri & Humes, 1982), but the great majority, 10 genera and 78 species, utilise marine fish as hosts. Taeniacanthids are rarely reported from Brazilian marine fish. Dojiri & Cressey (1987) recorded only a single species of taeniacanthid from Brazilian waters: *Taeniacanthus lagocephali* Pearse, 1952 from *Lagocephalus laevigatus* Linn. The present paper describes a new taeniacanthid caught off Santa Catarina State, Brazil. It belongs to the genus *Taeniastrotos* Cressey, which currently comprises four species.

Material and methods

Four adult females were collected from body surface of single *Cathrops spixii* (Agassiz) (Family Ariidae) caught in Baía Paranaguá, Santa Catarina, Brazil. Material was examined either as temporary mounts or as dissections in lactophenol. Type-specimens are stored in the collections of the Oceanographic Museum of the Fundação Universidade de Rio Grande (holo-

type ♀) and in The Natural History Museum, London (2 paratype ♀♀), Registration No. 1996.818-819. Specimens were examined and drawn using differential interference contrast on an Olympus BH-2 microscope, and all drawings were made with a camera lucida.

The terminology follows Huys & Boxshall (1991).

Taeniastrotos braziliensis n. sp.

Description (Figures 1–3)

Adult female cyclopiform. Total body length 1.33 mm; greatest width 0.51 mm (based on 2 specimens). Prosome 4-segmented, with first pedigerous somite fully incorporated into cephalosome forming cephalothorax (Figure 1A). Cephalothorax ornamented with strips of marginal membrane laterally. Second to 4th pedigerous somites narrowing posteriorly. Urosome 6-segmented, comprising 5th pedigerous somite, separate genital somite and 4-segmented abdomen. Genital somite 1.7 times wider than long, with convex lateral margins; paired genital apertures located dorso-laterally on somite (Figure 1B). Posterior margins of 1st to 5th urosomal somites unornamented; anal somite bearing spinule rows dorso-laterally on posterior margin (Figure 1C). Caudal rami (Figure 1C) about twice as long as wide, narrowing distally: armed with 6 setae; seta I missing; dorsal seta (VII) located medio-dorsally about at level of lateral seta (II).

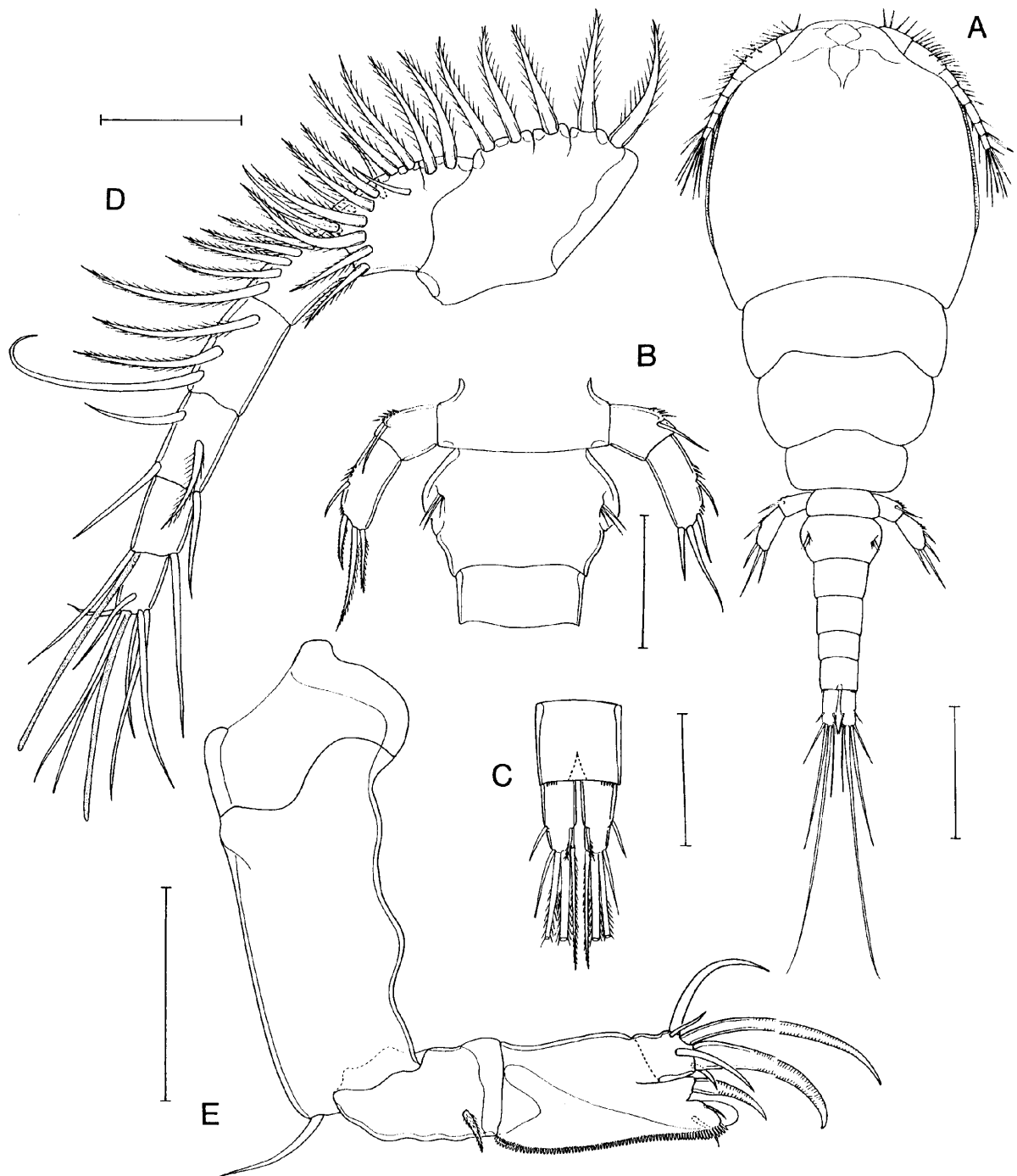


Figure 1. *Taeniatrotos braziliensis* n. sp. A. Adult female, dorsal; B. Anterior part of female urosome, dorsal; C. Anal somite and caudal rami, dorsal; D. Antennule, ventral; E. Antenna, medial. Scale-bars: A, 0.5 mm; B,C, 100 μ m; D,E, 50 μ m.

Rostral area protuberant with shield-like structure on ventral surface (Figure 2A); shield-like structure ornamented with parallel, longitudinal epicuticular ridges; lateral margins of shield upturned, projecting from ventral surface. Antennule (Figure 1D) 7-segmented; armature formula 5, 15, 5, 3, 4, 2 + 1 aesthetasc, 7 + 1 aesthetasc: segments 1 and 2 with partial suture lines on anterior margins; most setae on segments 1 to 4 plumose, most setae on segments 5 (ancestral segments XX–XXIV), 6 (XXV) and 7 (XXVI–XXVIII) naked. Antenna 4-segmented (Figure 1E), comprising elongate coxobasis and 3-segmented endopod with 2nd and 3rd endopodal segments incompletely separated; coxobasis with naked seta at inner distal angle. First endopodal segment with short hirsute seta near inner distal angle. Second endopodal segment with oblique, secondarily sclerotised bar on anterior surface and produced into 2 rounded processes at inner distal angle; anterior process ornamented with continuation of spinular row present along entire inner margin of segment; posterior process ornamented with marginal row of finer spinules; each process armed with minute seta; distal margin of segment bearing strong curved claw-like spine. Third endopodal segment fused to 2nd anteriorly, separated posteriorly by suture line; segment offset from tip, armed with 2 strong, claw-like spines and 4 naked setae of different lengths. Post-antennal process (Figure 2F) weakly developed; sclerite with sclerotised lateral margin and small, free process postero-laterally.

Mandible (Figure 2B) produced medially into gnathobasic process armed with 2 articulated blades; apical blade longer and triangular in cross-section; subapical blade ornamented with strips of marginal membrane. Maxillule (Figure 2C) lobate, armed with long semipinnate seta, 2 naked setae (one of which curved) and stout spine ornamented with marginal spinule rows. Maxilla (Figure 2D) comprising tapering, unarmed syncoxa and small cylindrical basis; basis armed around apex with two long and one short, finely spinulate setae. Maxilliped (Figure 2E) subchelate; part proximal to subchela comprising incompletely fused syncoxa and basis, with partial suture line around posterior and lateral surfaces marking plane of fusion; syncoxal part armed with inner seta; basal part armed with 2 inner setae; subchela comprising unarmed, free endopodal segment and stout distal claw armed with one anterior and one posterior accessory setae.

Swimming legs 1 to 4 biramous with 3-segmented rami (Figures 3A–D): spine and seta formula as follows:

	coxa	basis	exopod	endopod
leg 1	0-1	1-1	1-0; 1-1; 2,5	0-1; 0-1; I,4
leg 2	0-1	1-0	I-0; I-1; III,5	0-1; 0-2; III,3
leg 3	0-1	1-0	I-0; I-1; III,5	0-1; 0-2; IV,2
leg 4	0-0	1-0	I-0; I-1; III,5	0-1; 0-1; II,1,I

Leg 1 (Figure 3A) with flattened protopodal segments and rami; basis with flattened extension distally, around origin of exopod; outer setation elements on exopodal segments setiform; setae along inner margins of endopod, coxa and basis modified into broad, plumose and slightly flattened elements. Inner margin of 1st exopodal segment with pinnule row; outer margins of 1st and 2nd endopodal segments and distal margin of 3rd endopodal segment with fringe of long pinnules. Legs 2 to 4 (Figures 3B–D) each ornamented with row of spinules at outer distal angle of coxa. Intercoxal sclerite armed with minute spinule row in legs 2 and 3, and row of larger spinules in leg 4 (Figure 3D). Outer margins of endopodal segments and inner margin of first exopodal segment ornamented with pinnules in legs 2 to 4. Outer margins of exopodal segments ornamented with pinnules as figured. Leg 4 endopod elongate; distal segment armed with very short spine on lateral margin, one long apical seta and two short spines, located subapically either side of seta.

Leg 5 (Figure 1B) well developed, 2-segmented; protopodal segment defined at base, armed with outer (dorsal) seta and ornamented with short, anterior spinule row; exopodal segment about twice as long as wide, armed with one naked lateral seta and 3 distal spinulate setae; ornamented with 2 spinule rows laterally adjacent to seta bases. Leg 6 (Figure 1B) represented by 3 setae located on operculum closing off genital apertures.

Discussion

The presence of the large, shield-like rostrum in the female clearly places the new species in the genus *Taeniastrotos*, although the form of the female maxilliped does not conform to the sigmoid facies typical of the genus. The four species recorded for the genus *Taeniastrotos* by Dojiri & Cressey (1987) are: *T. californiensis* Cressey, 1969, *T. pleuronichthydis* (Yamaguti, 1939), *T. trachuri* (Avdeev, 1977) and *T. tragus* Dojiri & Cressey, 1987. The new species described above differs from *T. californiensis* and *T. tragus* in the

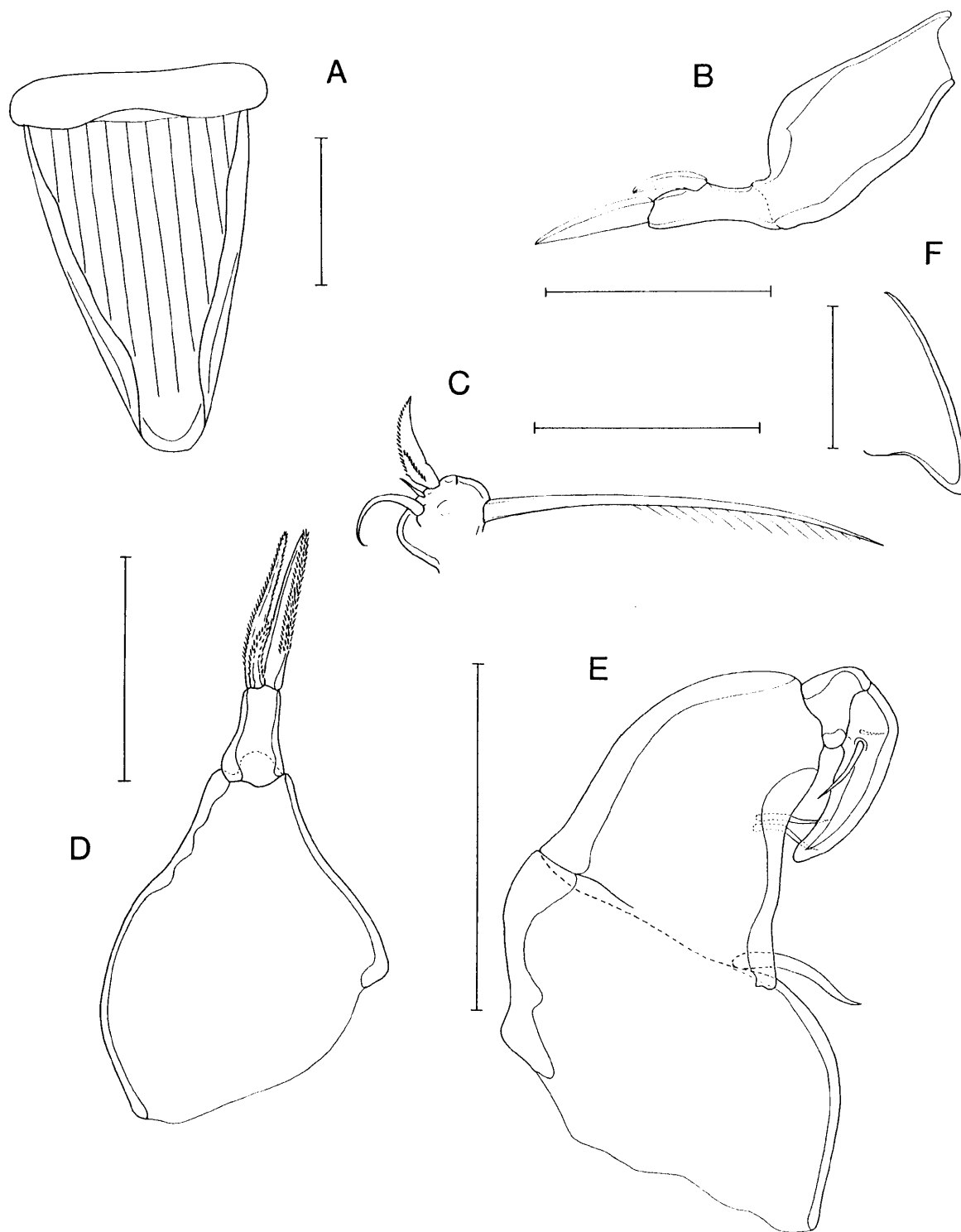


Figure 2. *Taeniarostros braziliensis* n. sp., female. A. Rostrum, ventral; B. Mandible, ventral; C. Maxillule, ventral; D. Maxilla, ventral; E. Maxilliped, ventral; F. Post-antennal process, ventral. Scale-bars: 50 μ m.

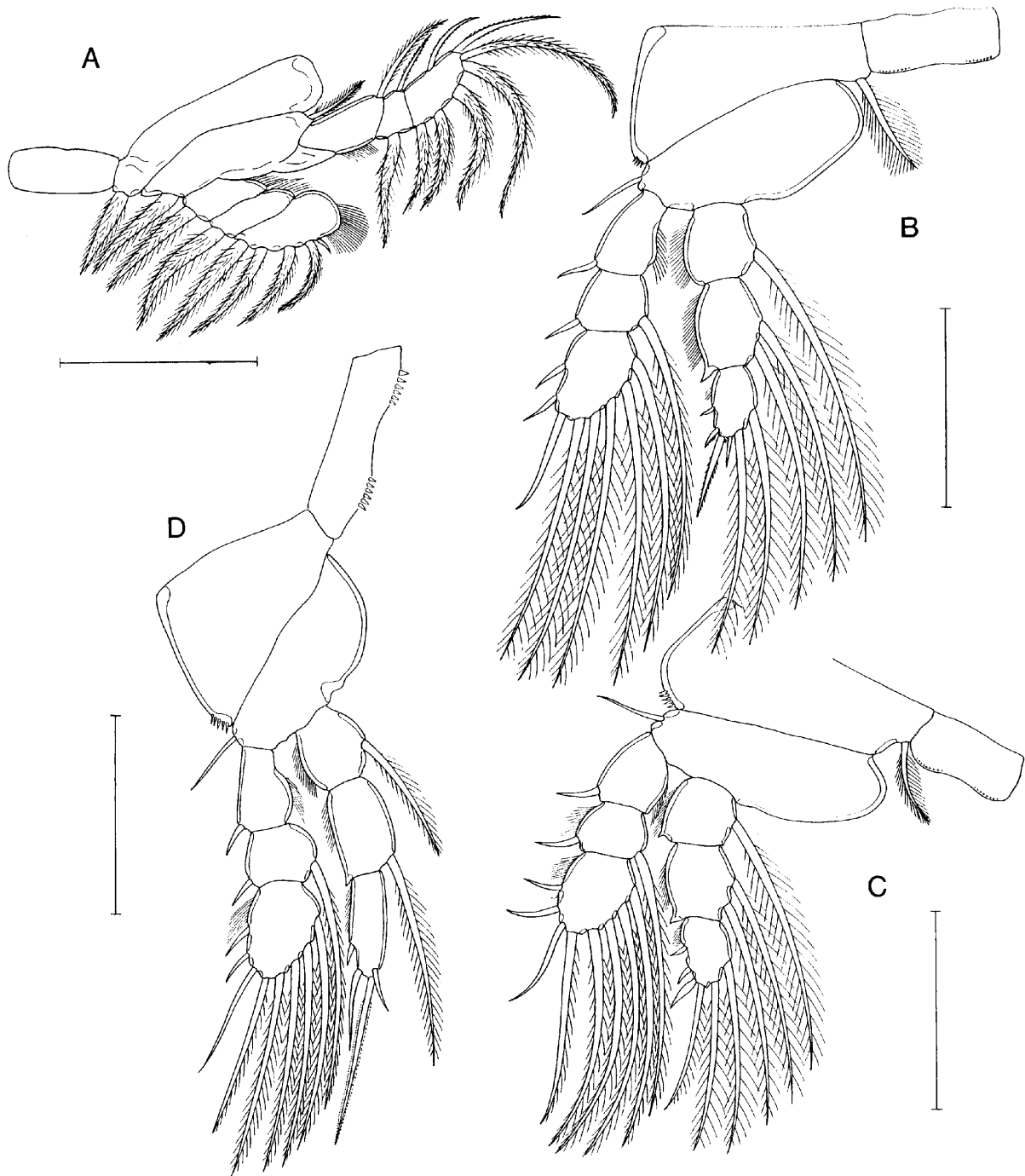


Figure 3. *Taeniatrotos braziliensis* n. sp., female. A. First swimming leg, anterior; B. Second swimming leg, anterior; C. Third swimming leg, anterior; D. Fourth swimming leg, anterior. Scale-bars: 50 μ m.

number of setation elements on the third endopodal segment of leg 4. These species have two and three elements respectively, whereas the new species has four, as in *T. pleuronichthydis* and *T. trachuri*. In *T. pleuronichthydis* the terminal endopodal segment of the fourth leg is armed with three plumose setae and one outer spine, and the female maxilliped possesses an accessory process on the claw; these characters differ from the new species. Finally, the setation of the third endopodal segment of the fourth swimming leg of *T. trachuri* comprises two outer and distal margin spines and two inner and distal margin plumose setae, whereas in the new species there are three spines and only one seta.

The host of the new species belongs to the family Ariidae. The hosts of the other species of the genus include *Trachinocephalus myops* (Forster) (Family Synodontidae), *Paralabrax nebulifer* (Girard) (Family Serranidae), *Trachurus trachurus* Linn. (Family Carangidae), *Nemipterus mulloides* Sarith (Family Nemipteridae), *Pleuronichthys cornutus* (Temminck & Schlegel) (Family Pleuronectidae) and *Verasper variegatus* (Temminck & Schlegel) (Family Pleuronectidae). All four of the existing species in the genus are known only from the Indo-Pacific (Yamaguti, 1939; Cressey, 1969; Avdeev, 1977; Dojiri & Cressey, 1987). The record of *T. braziliensis* n. sp. from *Cathrops spixii* taken in the South Atlantic is the first record of the genus from outside the Indo-Pacific and also the first from a member of the family Ariidae.

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