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A NEW SPECIES OF *DICHELYNE* (NEMATODA: CUCULLANIDAE) PARASITIZING *ACANTHISTIUS BRASILIANUS* (PISCES: SERRANIDAE) FROM ARGENTINEAN WATERS

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ABSTRACT: During a parasitological examination of 45 specimens of *Acanthisthius brasilianus* (Valenciennes, 1828) Jordan et Eigenmann, 1890, from waters off Mar del Plata, Argentina (38°08′S, 57°32′W), several specimens of cucullanid nematodes were collected from the intestines. A new species, *Dichelyne* (*Cucullanellus*) *szidati* n. sp., is described (prevalence 42.2%, mean intensity 2.7). The new species differs from its congeners inhabiting the southwestern Atlantic by the distribution pattern of caudal papillae, particularly the ninth pair, length of the body and spicules, and the position of the intestinal cecum (ventral), the excretory pore (posterior to esophagus), and the deirids (at the level of esophageal posterior end).

The Argentine sea bass, *Acanthisthius brasilianus* (Valenciennes, 1828), an edible marine fish distributed from southern Brazil to Patagonic waters in Argentina (48°S) (Cousseau and Perrotta, 1998), constitutes an important fishery resource in Argentina; nevertheless, no parasitological studies have been carried out on this host species until the present. During a parasitological survey on *A. brasilianus* from the coast of Mar del Plata, Argentina, several cucullanid nematodes were collected from the intestine. Examination of these parasites revealed that 2 species of cucullanids were present. Most specimens represented a new species of *Dichelyne* Jägerskiöld, 1902.

MATERIALS AND METHODS

A total of 45 specimens of *A. brasilianus* from waters off Mar del Plata, Argentina (38°08′S, 57°32′W) was examined. Fish were caught by commercial trawlers and landed at the Mar del Plata port during March 2000. Some fish were sampled immediately after capture; the rest were frozen (−18 C) for later examination. Fish were dissected and intestines were removed and examined under a stereoscopic microscope. Parasites were collected and fixed in 4% formol, preserved in 70% alcohol, cleared in lactophenol, and studied and measured using light microscopy. Drawings were made with a drawing tube. Measurements are given in millimeters, with the mean followed by a range in parentheses. Nomenclature of the caudal papillae follows Petter (1974); prevalence and mean intensity were calculated according to the method of Bush et al. (1997). The material studied was deposited in the Helminthological Collection of the Museo de La Plata (CHMLP), La Plata, Argentina.

DESCRIPTION

Dichelyne (*Cucullanellus*) *szidati* n. sp.

(Figs. 1–15)

Material studied: Twelve males and 16 females measured.

General: Medium-sized nematodes. Cuticle finely striated throughout. Lateral alae absent. Anterior end rounded, dorsoventrally expanded. Cephalic extremity with usual features of *Dichelyne*, with 2 pairs of prominent cephalic papillae, pair of amphids, inner ring of 3 pairs of small labial papillae. Mouth dorsoventrally slitlike, surrounded by collarette armed with numerous triangular denticles on each side. Pseudobuccal cavity well developed, with internal cuticular lining; esophagus narrow, expanded at both extremities, opening into intestine through small valve; pseudobuccal capsule wider than posterior end. Intestine with ventral cecum of variable length. Nerve ring surrounding esophagus just posterior to pseudobuccal capsule. Deirids situated laterally near esophageal end, generally anterior but in some cases slightly posterior to it. Excretory pore posterior to posterior end of esophagus. Postdeirids postequatorial; left postdeirid situated closer to tail than right one. Tail conical.

Male: Body 7.02 (5.02–9.70) long, maximum width 0.32 (0.23–0.49). Esophagus 0.85 (0.75–1.04) long, 12.25% (10.65–14.98%) of body length, 0.13 (0.10–0.18) wide at base; pseudobuccal capsule 0.19 (0.15–0.24) wide. Intestinal cecum 0.28 (0.18–0.34) long. Distance of nerve ring from anterior extremity 0.34 (0.30–0.41), of excretory pore 1.02 (0.82–1.52), of deirids 0.75 (0.60–0.92), of right postdeirid 3.86 (2.82–4.81), of left postdeirid 5.24 (4.05–7.11). Ventral precloacal sucker present, distance from center to posterior body end 0.88 (0.72–1.05). Cloaca prominent. Caudal papillae consisting of 1 medial adcloacal papilla, 11 pairs of papillae, 3 pairs precloacal (pair 1 anterior to and pair 2 posterior to ventral sucker; pair 3 between sucker and cloaca, closer to latter), 4 pairs adcloacal (pairs 5–7 subventral; pair 4 lateral, situated at level of pair 6 or slightly posterior to it), and 4 pairs postcloacal (pairs 9 and 10 subventral, pair 8 lateral between pairs 9 and 10 and 1 pair lateral [phasmids] anterior to pair 9 and situated at 0.12 (0.10–0.14) from posterior extremity). Spicules subequal, left spicule 0.99 (0.90–1.21) long, right spicule 0.95 (0.86–1.16) long, 13.99% (12.21–17.88%) of body length. Gubernaculum Y-shaped, 0.041 (0.036–0.050) long; Tail 0.21 (0.19–0.24) long.

Female: Body 9.68 (7.18–13.08) long, maximum width 0.41 (0.25–0.52). Esophagus 1.01 (0.90–1.17) long, 10.62% (8.42–12.92%) of body length, 0.15 (0.11–0.18) wide at base; pseudobuccal capsule 0.23 (0.20–0.26) wide. Intestinal cecum 0.30 (0.18–0.41) long. Distance of nerve ring from anterior extremity 0.37 (0.21–0.46), of excretory pore 1.18 (0.97–1.52), of deirids 0.93 (0.73–1.15), of right postdeirid 4.95 (3.63–6.59) (anterior to vulva), of left postdeirid 6.73 (5.08–9.04) (posterior to vulva). Vulva not prominent, slightly postequatorial, distance from anterior body end 5.65 (4.26–7.80), 59.22% (56.17–60.62%) of body length. Ovijector short, directed anteriorly from vulva. Uteri amphidelphic. Eggs in utero oval, not embryonated, 0.080 (0.071–0.096) long, 0.049 (0.040–0.057) wide. Tail 0.32 (0.26–0.40) long, with a pair of caudal papillae (phasmids) situated at 0.15 (0.14–0.17) from posterior extremity.

Taxonomic summary

Type host: Argentine sea bass, *Acanthistius brasilianus* (Valenciennes, 1828) (Perciformes: Serranidae).

Site: Posterior end of intestine.

Type locality: Mar del Plata (coastal area of Buenos Aires Province, Argentina, 38°08′S, 57°32′W).

Type specimens: Holotype: 1 male (CHMLP coll. no. 4871); allotype: 1 female (CHMLP coll. no. 4872); paratypes: 5 males (CHMLP coll. no. 4873) and 5 females (CHMLP coll. no. 4873).

Prevalence: 42.2%.

Mean intensity: 2.7 (1–10).

Etymology: The new species is named in honor of Dr. Lothar Szidat, for his contribution to fish parasitology in Argentina.

Remarks

Petter (1974) proposed a classification for the Cucullanidae Cobbold, 1964, recognizing *Dichelyne* Jägerskiöld, 1902, as having 3 subgenera, *Dichelyne*, *Cucullanellus* (Törnquist, 1930 gen.), and *Neocucullanellus* (Yamaguti, 1941 gen.). According to Petter's classification, the new spe-

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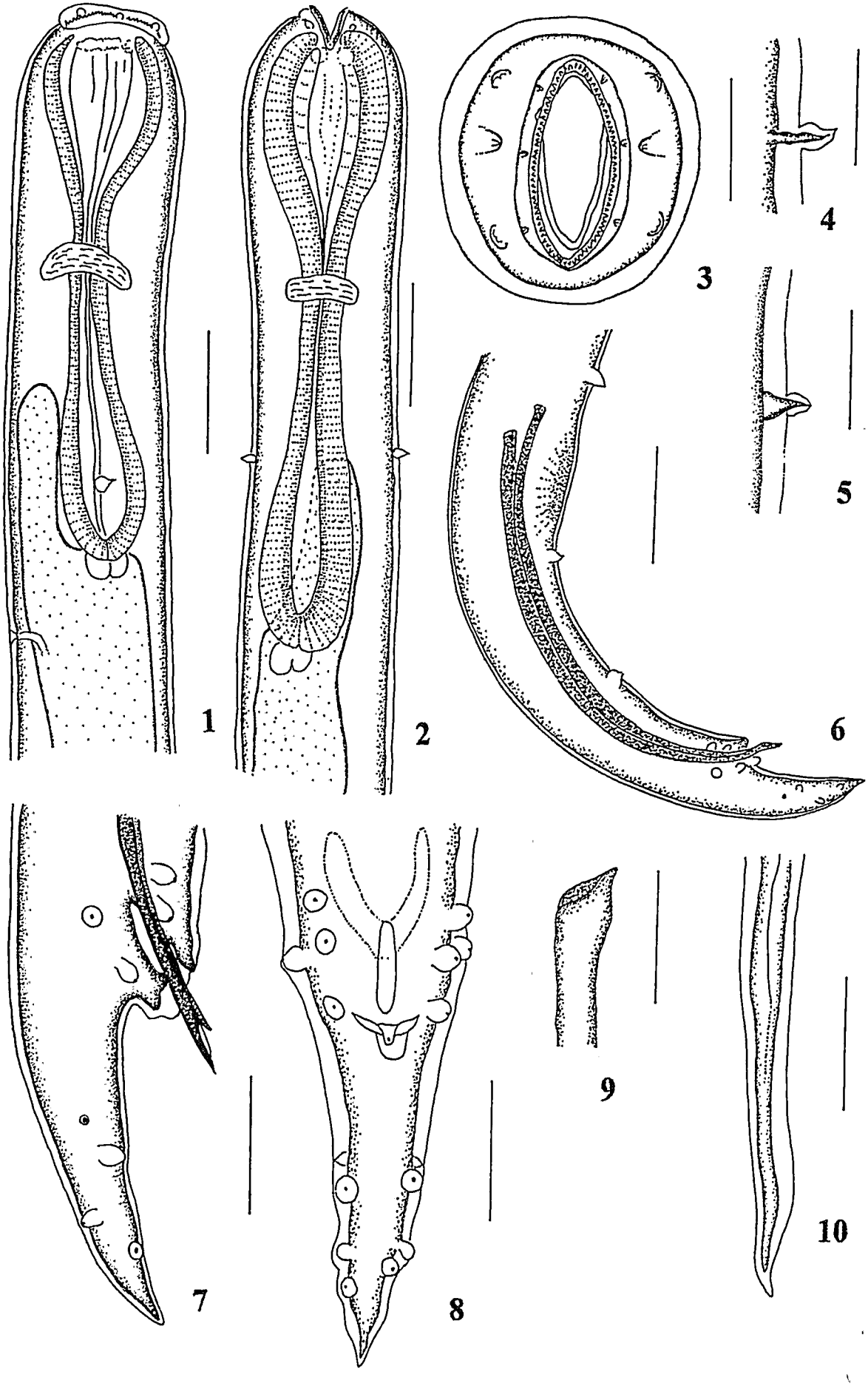
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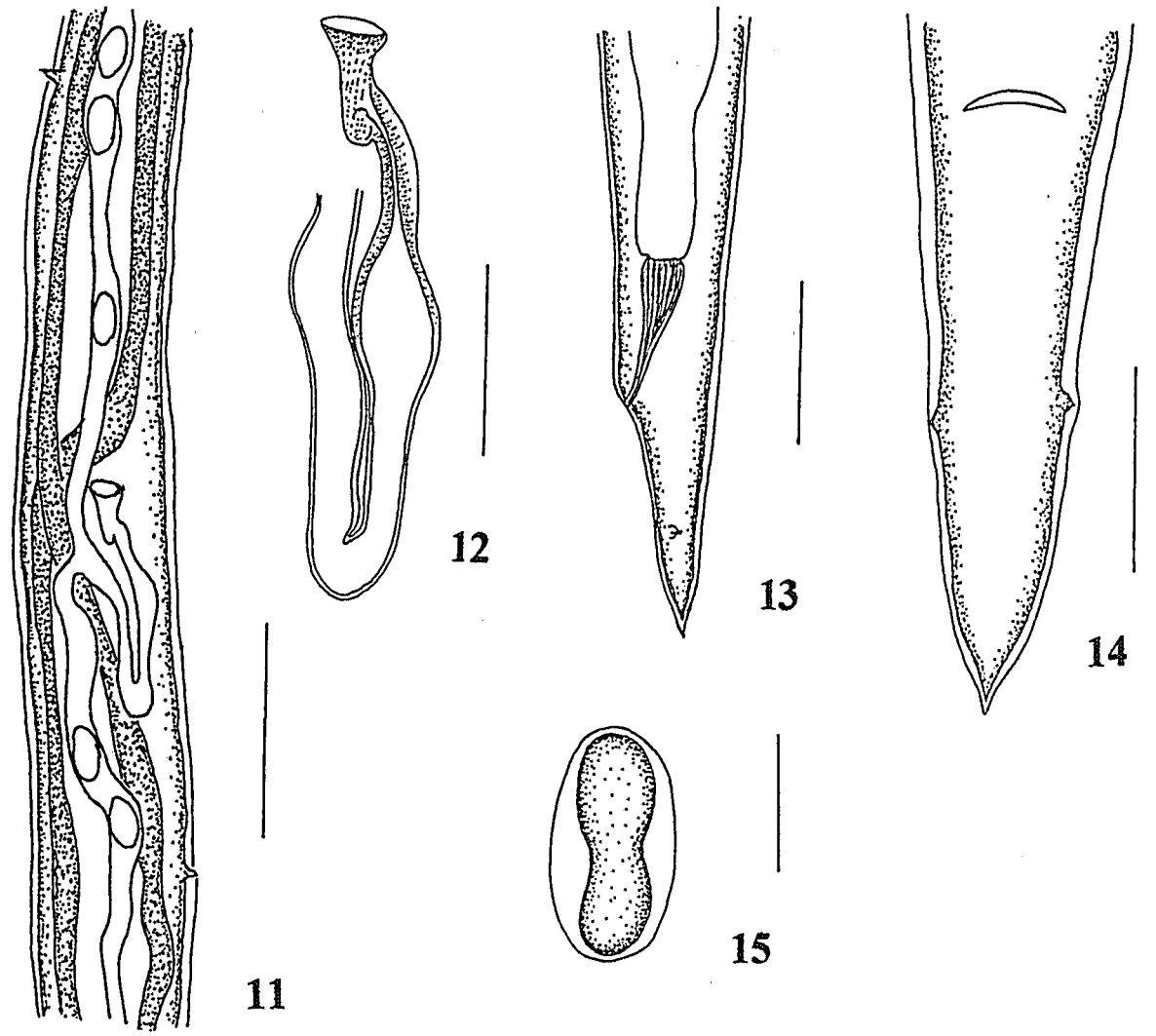

FIGURES 11–15. *Dichelyne* (*Cucullanellus*) *szidati* n. sp. **11.** Vagina region of female, showing postdeirids, ventral view. **12.** Detail of vulva and vagina, ventral view. **13.** Tail of female, lateral view. **14.** Tail of female, ventral view. **15.** Egg. Scale bars = 11: 0.5 mm; 12, 14: 0.1 mm; 13: 0.2 mm; 15: 0.05 mm.

cies described herein belongs to the subgenus *Cucullanellus* by having a precloacal sucker and 11 pairs of caudal papillae.

At the present, in the southwest Atlantic, 5 species of the subgenus *Cucullanellus* have been reported: *Dichelyne* (*Cucullanellus*) *dichelyneformis* (Szidat, 1950) Petter, 1974, a parasite of *Eleginops maclovinus* (Valenciennes, 1830) (Nototheniidae) from Tierra del Fuego, Argentina (Szidat, 1950), *Dichelyne* (*Cucullanellus*) *rodriguesi* (Pinto, Fábio, and Noronha, 1970) Petter, 1974, parasitic in *Micropogon* sp. (Sciaenidae) from Rio de Janeiro, Brasil (Pinto et al., 1970), *Dichelyne* (*Cucullanellus*) *travassosi* (Guimarães and Cristofaro, 1974) Vicente, Pinto, and Aguilera, 1989, a parasite of *Halichoeres radiatus* (Linnaeus, 1758) (Labridae) and *Balistes vetula* Linnaeus, 1758 (Balistidae), from Salvador, Bahia State, Brasil (Guimarães and Cristofaro, 1974), *Dichelyne* (*Cucullanellus*) *fraseri* (Baylis, 1929) Petter, 1974, parasitic in *Dissostichus eleginoides* Smitt, 1898 (Nototheniidae), from Patagonian waters, Argentina (Gaevskaya et al., 1990), and *Dichelyne* (*Cucullanellus*) *elongatus* (Törnquist, 1931), a parasite of *Paralonchurus brasiliensis* (Steindachner, 1875) (Sciaenidae) from Marambaia Island, Brasil (Pinto et al., 1992) and of *Micropogonias furnieri* (Desmarest, 1823) (Sciaenidae) from Mar del Plata, Argentina (Sardella et al., 1995).

Dichelyne (*Cucullanellus*) *dichelyneformis* and *D.* (*C.*) *fraseri* were reported from the southern region of the southwestern Atlantic, parasitizing nototheniids. Gaevskaya et al. (1990) did not provide the description of *D.* (*C.*) *fraseri*; for this reason, the species herein described was compared with the description of *D.* (*C.*) *fraseri* given by Zdzitowiecki and Cielecka (1996) from several Antarctic and sub-Antarctic nototheniid fishes. Both species differ from the new species in having a smaller body size, but similar esophagus and spicule length (these structures being proportionally larger). Furthermore, in both species the excretory pore and deirids are situated near the nerve ring, and both have caudal papilla 9 displaced toward the cloaca and situated closer to papilla 7, anterior to the phasmid (an evolved feature according to Petter [1974]). Zdzitowiecki and Cielecka (1996) questioned the validity of *D.* (*C.*) *dichelyneformis*, because, according to these authors, Szidat's (1950) description and figures have been based on strongly contracted specimens, and possibly both forms are conspecific.

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FIGURES 1–10. *Dichelyne* (*Cucullanellus*) *szidati* n. sp. **1.** Anterior end, lateral view. **2.** Anterior end, ventral view. **3.** Anterior end, apical view. **4.** Deirid. **5.** Postdeirid. **6.** Posterior end of male, lateral view. **7.** Tail of male, lateral view. **8.** Tail of male, ventral view. **9.** Proximal end of spicule. **10.** Distal end of spicule. Scale bars = 1, 2, 6, 7: 0.2 mm; 3, 8: 0.1 mm; 4, 5, 9, 10: 0.05 mm.

The new species and *D.* (*C.*) *rodriguesi* are of similar body and esophagus size, even though in the latter the width of the pseudobuccal capsule is markedly smaller. Pinto et al. (1970) report only 7 pairs of caudal papillae in *D.* (*C.*) *rodriguesi*. The reexamination of this species by Vicente et al. (1989) demonstrated that Pinto et al. (1970) overlooked 4 pairs of papillae; nevertheless, their distribution pattern was not described or illustrated. Additionally, *D.* (*C.*) *rodriguesi* differs from the new species by having markedly shorter spicules.

Dichelyne (*Cucullanellus*) *travassosi* can be distinguished from the new species by having a smaller body size, longer spicules, 2 intestinal ceca (according to figures in the original description), and 7 pairs of caudal papillae, although the distribution pattern of caudal papillae is difficult to discern in the figures, and the authors probably overlooked the remaining 4 pairs.

Sardella et al. (1995) did not describe the specimens of *D.* (*C.*) *elongatus* found in *M. furnieri* from Argentina, but Vicente et al. (1989) and Pinto et al. (1992) describe this species. *Dichelyne* (*Cucullanellus*) *elongatus* differs from the new species by having smaller body size, spicules, and eggs, papilla 9 displaced to the cloaca, the excretory pore situated at the level of the posterior half of the esophagus, and the intestinal cecum in the dorsal position. On the basis of these differences, a new species, *D.* (*C.*) *szidati*, is proposed.

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