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ON *DICHELYNE (CUCULLANELLUS) ELONGATUS* (TORNQUIST, 1931) PETTER, 1974: SOUTH AMERICAN CORRELATED SPECIES (NEMATODA, CUCULLANIDAE) AND SOME OTHER HELMINTHS OF *MICROPOGONIAS FURNIERI* (DESMAREST, 1823) (PISCES, SCIAENIDAE)

J. JULIO VICENTE (+), R. MAGALHÃES PINTO (+) & ORANGEL AGUILERA*

Instituto Oswaldo Cruz, Departamento de Helmintologia, Caixa Postal 926, 20001 Rio de Janeiro, RJ, Brasil
* Universidad Nacional Experimental Francisco de Miranda, Coro, Venezuela

Dichelyne (Cucullanellus) elongatus *(Tornquist, 1931) Petter, 1974, from Venezuela, of which* D. (C.) amaurincai *(Freitas, Vicente & Ibáñez, 1969) Petter, 1974 is proposed as a junior synonym, is redescribed and comments on the present status of the remaining species under the group, namely* D. (C.) dichelyneformes *(Szidat, 1950) Petter, 1974,* D. (C.) rodriguesi *(Pinto, Fábio & Noronha, 1970) Petter, 1974 and* D. (C.) travassosi *(Guimarães & Cristofaro, 1974), occurring in South America are made.* Dollfusentis chandleri *Golvan, 1969 (Acanthocephala, Illiosentidae),* Poecilancistrium caryophyllum *(Diesing, 1850) (Cestoidea, Otobothriidae) and* Callitetrarhynchus gracilis *(Rudolphi, 1819) (Cestoidea, Dasyrhynchidae) as well as larval forms of* Echinocephalus *sp. (Nematoda, Gnathostomatidae) and* Contracaecum *sp. (Nematoda, Anisakidae) are also reported.*

Key words: helminths – *Micropogonias furnieri* – marine fishes – South America

Ichthyoparasitological studies concerning the helminth fauna of marine edible fishes are of particular interest, considering their occasional commercialization for posterior ingestion as raw or frozen meat. This fact, arises some aspects of sanitary relevance, since some intestinal parasites of fishes marketed ungguted are potentially important to man (Hooper, 1983). The identification of helminth species infecting fishes has been subject of our interest and the present paper is also directed toward these investigations.

MATERIALS AND METHODS

One hundred and thirty six specimens of *Micropogonias furnieri* (Desmarest, 1823) (Pisces, Sciaenidae) were periodically captured and examined in the Gulf of Venezuela (11°30'N-69°10'W). Helminth samples recovered from this host in a 0.8% NaCl solution, were fixed in AFA, dehydrated, stained in alcoholic carmine, cleared and mounted in beech-wood cresosote or glycerin and preserved in balsam as whole mounts. Some were studied unstained and others preserved as wet material, as well. As for the restudied specimens, definitive deposited preparations were used. Drawings were made with an Olympus camera lucida. Measurements are in millimeters (mm) and means in parenthesis. Voucher specimens were deposited in the Instituto Oswaldo Cruz Helminthological Collection (CHIOC).

RESULTS

NEMATODA

Cucullanidae Cobbold, 1864.

Dichelyne (Cucullanellus) elongatus
(Tornquist, 1931) Petter, 1974

Site: Intestine.

Prevalence: thirty eight out the 136 fishes examined were infected with this species (27.9%).

Voucher specimens deposited: CHIOC nos. 32,499 a-k (whole mounts) 32,356 (Railliet & Henry's solution).

(+) Research fellows CNPq, Brasil. Proc. nos. 304600/76-8 and 300374/80-1, respectively.

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The following description is based on six and five mature males and females, respectively.

General: slender nematodes, widest mostly at the middle of esophageal region, tapering toward tail. Oral opening dorsoventral slit surrounded by membranous flange of cuticle which bears numerous fine, rodlike structures. Internally, buccal cavity with heavily sclerotized lining. Two amphids, four simple submedian papillae. Esophagus club-shaped; anterior portion swollen, surrounding buccal cavity; posterior portion very muscular, slightly swollen at posterior end. Esophagus opening into intestine through muscular valvular apparatus. Intestine with dorsal intestinal cecum, directed anteriorly, variable in length and shape.

Male: (Figs 2, 3, 6): length 2.52-4.32 (3.42), maximum width 0.21-0.28 (0.24). Esophagus 0.44-0.63 (0.55) long. Nerve ring 0.16-0.25 (0.20) and excretory pore 0.36-0.40 (0.37) from anterior end, respectively. Preanal sucker 0.14-0.16 (0.14) long. Intestinal cecum 0.18-0.19 (0.17) long. Gubernaculum 0.05-0.07 (0.06) long. Spicules subequal and similar, 0.32-0.48 (0.38) and 0.37-0.50 (0.40) long, respectively. Eleven pairs of caudal papillae, three precloacal three surrounding the cloacal aperture and five postcloacal. Cloaca 0.09-0.11 (0.10) from posterior end.

Female: (Figs 1, 4, 5, 7): length 3.85-4.86 (4.42), maximum width 0.28-0.34 (0.30). Esophagus 0.59-0.72 (0.64) long. Nerve ring 0.21-0.44 (0.28) and excretory pore 0.36-0.44 (0.41) from anterior end, respectively. Intestinal cecum 0.19-0.23 (0.20) long. Vulva 2.20-2.59 (2.43) from anterior extremity. Two ovaries, amphidelphic. Tail with two lateral papillae (phasmids). Eggs thin-shelled, broadly oval 0.060-0.068 (0.064) long by 0.050 wide. Rectum 0.070-0.10 (0.086) long. Anus 0.16-0.18 (0.16) from posterior end.

Gnathostomatidae Railliet, 1895.

Echinocephalus sp.

Site: mesentery of the pyloric caeca and intestine.

Prevalence: thirty out of the 136 fishes examined were infected with this species (22.0%).

Voucher specimens deposited: CHIOC nos. 32,501 a-m (whole mounts); 32,357 (Railliet & Henry's solution).

Anisakidae (Railliet & Henry, 1912) Skrjabin & Karokhin, 1945.

Contracaecum sp. *(latu sensu)*

Site: Intestine.

Prevalence: one out of the 136 fishes examined were infected with this species (0.7%).

Voucher specimens deposited: CHIOC nos. 32,500 a-b (whole mounts); 32,358 (Railliet & Henry's solution).

CESTOIDEA

Otobothriidae Dollfus, 1942.

Poecilancistrium caryophyllum (Diesing, 1850)

Site: body cavity.

Prevalence: two out of the 136 fishes examined were infected with this species (1.1%).

Voucher specimen deposited: CHIOC no. 32,497 (whole mount).

Dasyrhynchidae Dollfus, 1935.

Callitetrarhynchus gracilis (Rudolphi, 1819)

Site: body cavity.

Prevalence: two out of the 136 fishes examined were infected with this species (1.1%).

Voucher specimen deposited: CHIOC no. 32,496 (whole mount).

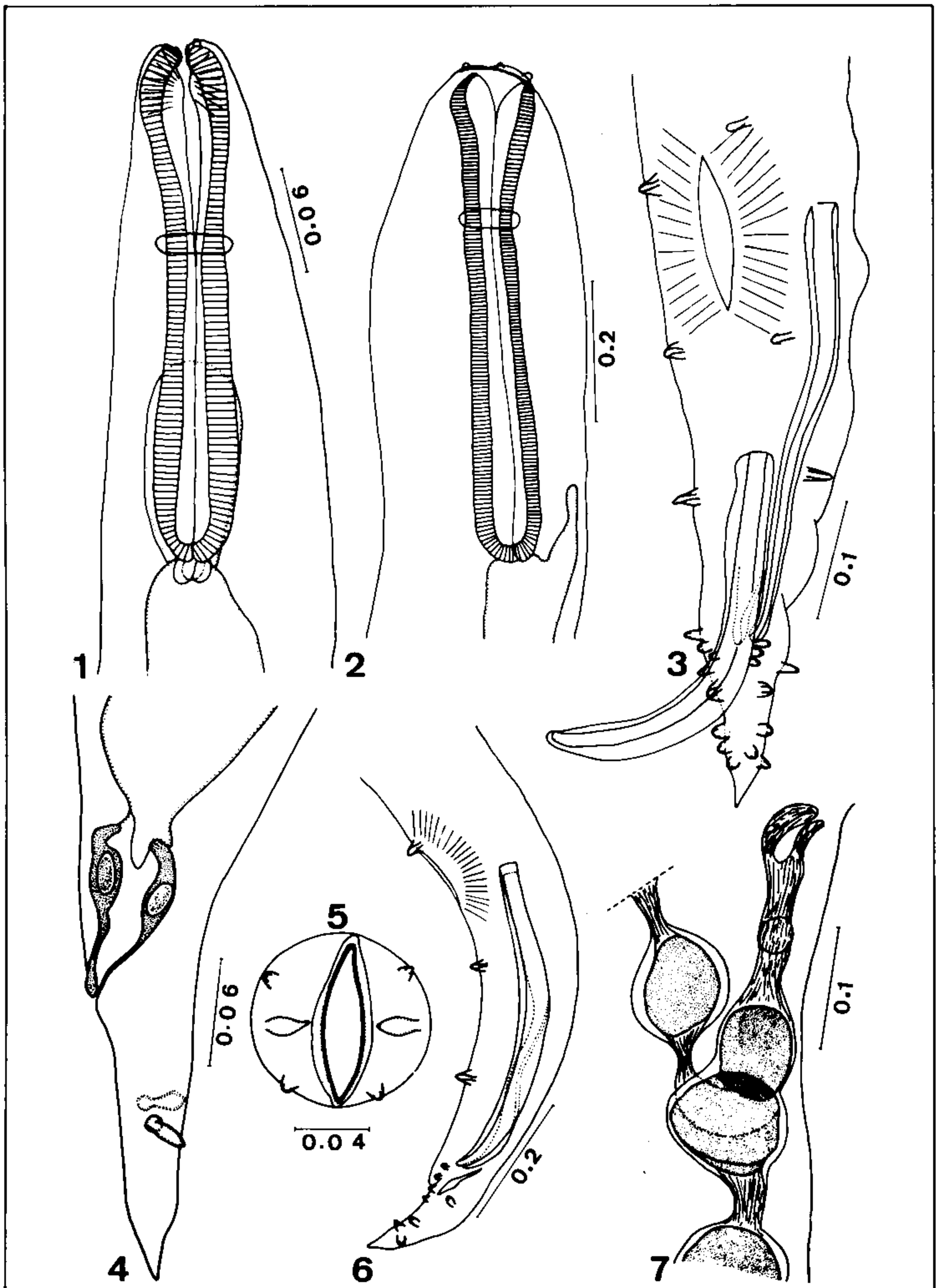
ACANTHOCEPHALA

Illiosentidae Golvan, 1960.

Dollfusentis chandleri Golvan, 1969

Site: intestine.

Prevalence: seven out of the 136 fishes examined were infected with this species (5.1%).



Dichelyne (Cucullanellus) elongatus. Fig. 1: female, anterior extremity, dorsal view (32.499e). Fig. 2: male, anterior extremity, lateral view (32.499a). Fig. 3: male, posterior extremity, dorsal view (32.499b). Fig. 4: female, posterior extremity, lateral view (32.499c). Fig. 5: female, "en face" view (not preserved). Fig. 6: male, posterior extremity, lateral view (32.499a). Fig. 7: vulvar region and ovijector, lateral view (32.499c).

Voucher specimen deposited: CHIOC nos. 32,498 a-c (whole mounts); 32,359 (Railliet & Henry's solution).

DISCUSSION

Petter (1974) proposed a new classification of Cucullanidae Cobbold, 1864, on basis on the study of evolutionary characters and the correlation between the latter and the nature of the hosts. In this way, three genera were recognized and among them, the genus *Dichelyne* Jagerskiold, 1902, with the subgenera *Cucullanellus, Dichelyne* and *Neocucullanellus.*

The genus *Dichelyne* is found mainly in the more evolved Teleostei (specially the Perciformes) and occasionally in other fishes and in Chelonia. According to this classification, the specimens described herein are assigned to the subgenus *Cucullanellus* and are representative of *D. (C.) elongatus* (Tornquist, 1931) Petter, 1974, parasitizing *Micropogonias furnieri* (Desmarest, 1823) captured in the Gulf of Venezuela.

Tornquist (1931) proposed *Cucullanellus elongatus,* harboured by *Micropogonias undulatus (= Micropogon undulatus)* and other Sciaenidae hosts, such as *Umbrina reedi* and *Corvina stellifer* (sic), from Juan Fernandez Island, Iceland.

Actually, under the subgenus *Cucullanellus,* there are representatives from Japan, Australia, Africa, India, North and South America, as well. Eleven species were recovered from Perciformes, one from Siluriformes, one from Atheriniformes, two from Pleuronectiformes and two from Chelonia.

As for South America, *Cucullanellus dichelyneformes* was proposed by Szidat (1950) in *Eleginops maclovinus* Cuv. and Val. from Tierra del Fuego and actually is designated as *D. (C.) dichelyneformes* (Szidat, 1950) Petter, 1974. This is a peculiar species in which the spicules are provided with a delicate lancet-like tip. The occurrence of *Cucullanellus amaurincai* was referred by Freitas et al. (1969), when the original diagnosis of this species recovered from *Paralonchurus peruanus* (Steind.) in Paita (Piura) Bay, Peru, was provided.

The Brazilian species under *Dichelyne* were proposed by Pinto et al. (1970) as *Cucullanellus rodriguesi,* from *Micropogonias* sp. (= *Micropogon* sp.) captured in Guanabara Bay, Rio de Janeiro State and by Guimarães & Cristofaro (1974) as *Cucullanus travassosi,* parasitizing *Halichoerus radiatus* (L.) and *Balistes vetula* (L.), from Salvador, Bahia State. Examination of type material of the latter species, showed the presence of an intestinal cecum and a precloacal sucker. Those characters clearly confirm its inclusion under *Dichelyne (Cucullanellus),* with the proper designation of *D. (C.) travassosi* (Guimarães & Cristofaro, 1974).

The parameter of specificity, concerning host-parasite association, induces the comparison between the now studied samples of *Dichelyne* and those recovered from hosts of the same genus, e. g., *Micropogonias* (Cuv. & Val., 1830) Bonaparte, 1831, despite of their geographical distribution. Our specimens, although having shorter spicules were identified as *D. (C.) elongatus.* Nevertheless, this difference concerning the length of the spicules of the present specimens and that presented by Tornquist in 1931, in the only available description of *D. (C.) elongatus* up to this date, that moreover lacks of elucidative illustration, is not, in fact, a reliable character to induce the proposition of a new species, since the correlation length of body/length of spicules, remains the same in both cases. *D. (C.) elongatus* undoubtly differs from *D. (C.) rodriguesi* (Pinto, Fábio & Noronha, 1970) Petter, 1974, that presents the pseudosucker with a conspicuous petal-shaped margin. Regarding this species, its reexamination, demonstrated that Pinto et al. (1970) overlooked another four pair of caudal papillae, that were originally reported as seven pairs in its total. The differentiation between the Peruvian *D. (C.) amaurincai* (Freitas, Vicente & Ibáñez, 1969) Petter, 1974, when compared to *D. (C.) elongatus* seems to be inconclusive, considering the characters taken into account, i. e., ". . . por las dimensiones un poco mayores y por la disposición de las papilas post-anales de la cola de los machos". (Freitas et al., 1969). After the re-examination of type specimens and under the above mentioned criteria in correlating body size to spicular length, *D. (C.) amaurincai* must be regarded as a junior synonym of *D. (C.) elongatus. D. (C.) elongatus* is now reported for the first time in Venezuela and in a new host.

Dollfusentis chandleri Golvan, 1969, a widely distributed acanthocephalan species has

been reported in several hosts, such as *Micropogonias undulatus, Leiostomus xanthurus, Cynoscion arenarius, Orthopristis chrysopterus, Cestreus arenarius (= Cynoscion arenarius)* (Golvan, 1969), *Haemulon sciurus* (Kohn & Macedo, 1984; Noronha et al., 1986), *Archosargus romboidalis, Eucinostomus argenteus, Umbrina coroides* (Noronha et al., 1986), deserving no further comments, besides its first record in Venezuela, although already referred for Curaçao, representanting also a new host record.

Poecilancistrium caryophylum (Diesing, 1850) and *Callitetrarhynchus gracilis* (Rudolphi, 1819) were recently restudied by São Clemente (1986) with basis on specimens recovered from *M. furnieri*, captured off the Brazilian coast and are now reported for the first time in Venezuela.

Larval forms of *Echinocephalus* sp. have been recorded previously from other hosts and it is known that adult specimens of this nematode are parasitic in the spiral valve of elasmobranchs (Hooper, 1983) and larval *Contracaecum* sp. specimens are widely distributed.

RESUMO

Sobre *Dichelyne (Cucullanellus) elongatus* (Tornquist, 1931) Petter, 1974: espécies sul americanas correlatas (Nematoda, Cucullanidae) e alguns outros helmintos de *Micropogonias furnieri* (Desmarest, 1823) (Pisces, Sciaenidae) – *Dichelyne (Cucullanellus) elongatus* (Tornquist, 1931) Petter, 1974, da Venezuela, da qual *D. (C.) amaurincai* (Freitas, Vicente & Ibáñez, 1969) Petter, 1974 é proposta como sinônimo junior, é descrita, e são feitos comentários sobre a atual situação das outras espécies do mesmo grupo, ocorrendo na América do Sul, a saber: *D. (C.) dichelyneformes* (Szidat, 1950) Petter, 1974, *D. (C.) rodriguesi* (Pinto, Fábio & Noronha, 1970) Petter, 1974 e *D. (C.) travassosi* (Guimarães & Cristofaro, 1974). *Dollfusentis chandleri* Golvan, 1969 (Acantochephala, Illiosentidae), *Poecilancistrium cariophyllum* (Diesing, 1850) (Cestoidea, Otobothriidae) e *Callitetrarhynchus gracilis* (Rudolphi, 1819) (Cestoidea, Dasyrhynchidae) bem como formas larvares de *Echinocephalus* sp. (Nematoda, Gnathostomatidae) e *Contracaecum* sp. (Nematoda, Gnathostomatidae) e *Contracaecum* sp. (Nematoda, Anisakidae) são também assinaladas.

Palavras-chave: helmintos – *Micropogonias furnieri* – peixes marinhos – América do Sul

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