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)

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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 (Szláti, 1950) Petter, 1974, D. (C.) rodriguezi (Pinto, Fábio & Noronha, 1970) Petter, 1974 and D. (C.) travassosi (Guimarães & Cristofoaro, 1974), occurring in South America are made. Dollfusentes chandleri Golvan, 1969 (Acanthocephala, Illosentidae), Pocilicanstrium caryophyllum (Diesing, 1850) (Cestoidea, Otobothriidae) and Callitetrarhynchus gracilis (Rudolphi, 1819) (Cestoidea, Dasyrhynchidae) as well as larval forms of Echinocoehalus 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 unguited 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, Sciænidae) 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).
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.

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


**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.

**Poecilancistrum 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).

Dasyrhyynchidae 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.

**Dolfusentis 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 (32.499a). 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 ovjector, 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 Jagerskold, 1902, with the subgenera Cucullanellus, Dichelyne and Neocucullanellus.

The genus Dichelyne is found mainly in the more evolved Teleostei (specialy 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 Umbra reidi 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 Paralichthys peruanaus (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 Cucullanellus travassosi, parasitizing Halichoeres 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 undoubtedly 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 acanthocephalans species has
been reported in several hosts, such as *Micro-
pogonias undulatus*, *Leostomus xanthius*,
*Cynoscion arenarius*, *Orthopristis chrysopterus*,
*Cestrea arenarius* (= *Cynoscion arenarius*)
(Golvan, 1969), *Haemulon sciurus* (Kohn &
Macedo, 1984; Noronha et al., 1986), *Archo-
sargus romboidalis*, *Eucinostomus argenteus*,
*Umbrina coroides* (Noronha et al., 1986),
deserving no further comments, besides its first
record in Venezuela, although already referred
for Curaçao, representing also a new host
record.

*Poecilancistrum caryophylum* (Diesing,
1850) and *Callitetrarhynchus gracilis* (Rudolphi,
1819) were recently restudied by Sâm 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 *Echnicephalus* sp. have
been recorded previously from other hosts and
it is known that adult specimens of this nema-
tode are parasitic in the spiral valve of elasmo-
branchs (Hooper, 1983) and larval *Contra-
caecum* 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 (Torn-
quist, 1931) Petter, 1974, da Venezuela, da
qual *D. (C.) amaurinca* (Freitas, Vicente &
Ibáñez, 1969) Petter, 1974 é proposta como
sinônimo júnior, é descrita, e são feitos comen-
tários sobre a atual situação das outras espécies
do mesmo grupo, ocorrendo na América do Sul,
a saber: *D. (C.) dichelyneformes* (Szigeti, 1950)
Petter, 1974, *D. (C.) rodriguesi* (Pinto, Fábio &
Noronha, 1970) Petter, 1974 e *D. (C.) travas-
sosi* (Guimarães & Cristofaro, 1974). *Dollifusen-
tis chandleri* Golvan, 1969 (Acantocephala, *Illiosentidae*),
*Poecilancistrum cariophyllum* (Diesing, 1850) (Cestoidea, Otobothriidae) e
*Callitetrarhynchus gracilis* (Rudolph, 1819)
(Cestoidea, Dasyrhynchidae) bem como formas
lavraves de *Echnicephalus* sp. (Nematoda,
*Gnathostomatidae*) e *Contracecum* sp. (Nema-
toda, *Gnathostomatidae*) e *Contracecum* sp.
(Nematoda, *Anisakidae*) são também asinala-
das.

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

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