

# PSEUDASCAROPHIS GENYPTERI N. SP (NEMATODA: CYSTIDICOLIDAE) PARASITE FROM THE RED LING GENYPTERUS CHILENSIS OFF CHILE

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**ABSTRACT:** A new nematode belonging to the Cystidicolidae is described. *Pseudascarophis genypteri* n. sp. was found in the intestine of the red ling *Genypterus chilensis*, sampled off Talcahuano, Chile. It is distinguished from *Ascarophis* species mainly by the absence of cephalic papillae and of submedial and medial labia. The other species in the genus, *Pseudascarophis kyphosi* Ko, Margolis, and Machida, 1985, found in *Kyphosus cinerascens*, and *P. tropica* (Solov'eva, 1996), found in *Parupeneus chrysopleuron*, differed principally from *P. genypteri* in the form of pseudolabia, number of pre- and postanal papillae, and length of spicules.

The parasitic nematodes of the Cystidicolidae inhabit, as adults, the digestive tract or swimming bladder of marine and freshwater fishes (Williams and Jones, 1994). They have an indirect life cycle, with arthropods as intermediate hosts.

Taxonomic studies on these parasites are difficult, mainly because of the small body size and the even smaller size of the structures that constitute key characters, including the cephalic and circumoral structures, as well as the genital area, mainly in males. There is, however, confusion in the taxonomy of cystidicolid nematodes (Chabaud, 1975). Presently, this family has 15 genera (Chabaud, 1975; Ko et al., 1985).

A survey of nematode parasites of 35 marine fish species off Chile did not include cystidicolid nematodes (Fernández and

Villalba, 1985). First records of *Ascarophis* sp. in the fish species *Helicolenus lengerichi* and *Sebastes capensis* from Chile are recent (Balboa and George-Nascimento, 1998; González and Acuña, 1998). The goal of the present study is to describe a new species of Cystidicolidae found in the red ling *Genypterus chilensis*.

## MATERIAL AND METHODS

Unidentified nematodes of the Cystidicolidae were recovered from digestive tracts of 50 *Genypterus chilensis*, collected during 1999. These parasites were fixed in 10% formalin and later examined under light microscopy. Measurements of the body length, width at midlength of the body, width of the anterior region (at ring nerve level), nerve ring and deirid positions, esophagus length, tail length (from anus or cloaca up to the end of the body), spicule length, vulva position (from anterior end of the body), and egg size were recorded in millimeters or microns. The number of caudal papillae in males and the presence of egg filaments and caudal alae were also recorded. Cephalic and caudal struc

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TABLE I. Morphometry of female and male *Pseudascarophis genypteri* n. sp. from *Genypterus chilensis* and *P. kyphosi* from *Kyphosus cinerascens* according to Ko et al. (1985). Measurements in microns ( $\mu\text{m}$ ) unless otherwise stated.

	<i>P. genypteri</i>		<i>P. kyphosi</i>	
	Male (n = 5)	Female (n = 11)	Male (n = 2)	Female (n = 2)
Body length (mm)	5.85–7.18	7.73–9.08	11.3–12.5	27.2–33.4
Body width	40–68	68–93	50–62	127–130
Anterior region width	22–25	22–38	29–38	48
Buccal cavity	118–160	113–135	139–163	168–178
Deirids*	98‡	105–108	69	74
Nerve ring position*	133–200	135–153	168–187	206–218
Muscular esophagus	215–275	237–295	348–360	490–499
Glandular esophagus (mm)	1.60–2.43	1.34–2.73	2.9–3.6	7.21–7.30
Excretory pore*	213‡	193–233	§	314–322
Tail†	100–145	75–100	125–150	118–127
Posterior tip		Some		Present
Posterior tip length		1.8–2.5		§
Vulva position (mm)†		3.33–4.00		12.0–12.5
Egg length		32–35		29–34
Egg width		24–26		14–17
Polar filaments		Without filaments		Tufts of filaments
Left spicule	709–982		185–210	
Right spicule	218–254		80–90	
Pairs preanal papillae	4		3	
Pairs postanal papillae	5		7	

\* From anterior end of the body.

† From posterior end of the body.

‡ Measured in only 1 specimen.

§ No data available.

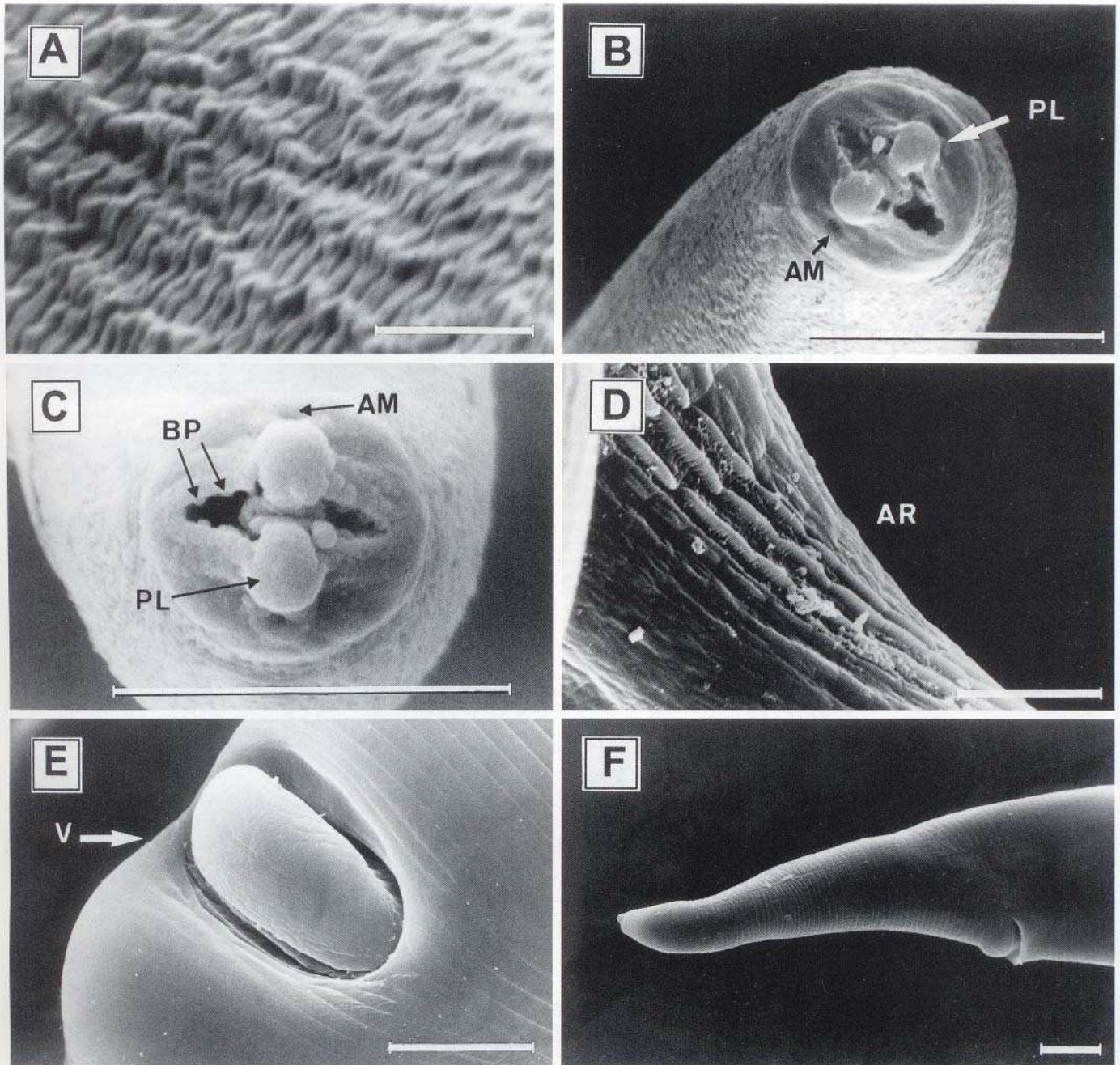


FIGURE 1. SEM of *Pseudascarophis genypteri* n. sp. (A) Cuticular striations in the anterior region of female. Scale bar = 2  $\mu$ m. (B) Cephalic region of female. (C) Cephalic region of male. (D) Area rugosa. (E) Vulva. (F) Tail of female. Abbreviations: BP, buccal processes; PL, pseudolabia; AM, amphid; V, vulva; AR, area rugosa. Scale bar = 10  $\mu$ m.

tures on male (n = 3) and female (n = 3) specimens were examined using scanning electron microscopy (SEM). Uncoiled male tails were not possible to photograph. The morphology and morphometry were compared to descriptions given by Chabaud (1975), Machida (1976), Appy and Anderson (1982), Ko et al. (1985), Ko (1986), and Solov'eva (1996) for cystidicolid nematodes.

#### DESCRIPTION

*Pseudascarophis genypteri* n. sp.

General diagnosis: Slender filiform worms with striated cuticle. The body cuticle is lightly striated in the anterior region (Fig. 1A), with

progressively more prominent striations. Under light microscopy, the striations were seen from the glandular esophagus down to the anus. Width at ring nerve level, half of maximum body width. Oral opening elongated dorsoventrally, submedial labia lacking, but with 8 small digitiform processes: 4 subventral and 4 subdorsal, 2 each side (Fig. 113, C). No cephalic papillae (Fig. 1C). Amphids present and prominent, in the lateral pseudolabia (near the base of pseudolabia) (Fig. 1C). Rounded pseudolabia terminal (Figs. 1C, 2B), joined to the middle oral opening (Fig. 113, C). Excretory pore posterior to nerve ring; deirids anterior of nerve ring. Esophagus divided into a short, anterior muscular region and longer posterior glandular region. Nerve ring in the anterior part of the muscular esophagus (Fig. 2A, C). Preanal area rugosa present in