

**PSEUDOCAPILLARIA PARABLENNII SP. N. (NEMATODA:  
CAPILLARIIDAE) FROM A MARINE FISH,  
PARABLENNIUS GATTORUGINE (BRÜNN),  
FROM THE ITALIAN COAST**

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**Abstract.** A new nematode, *Pseudocapillaria parablennii* sp. n. is described from the intestine of the blenny *Parablennius gattorugine* (Brünn) (fam. Blenniidae, Perciformes) from the west coast of Italy (Gulf of Gaeta, Tyrrhenian Sea). It is characterized largely by the presence of a very short spicule (0.090-0.099 mm), structure of the male posterior end (presence of large lateral lobes, absence of dorsal cuticular membrane) and by the size (0.063-0.069×0.027-0.030 mm) and structure of eggs. It is the first *Pseudocapillaria* species described from fishes of the family Blenniidae (combtooth blennies).

Capillariid nematodes are frequent parasites of both freshwater and marine fishes. In his recent revision of fish capillariids, Moravec (1987) has reported a total of 39 valid species belonging to 9 genera; an additional species of fish capillariids, *Capillostrongyloides ancistri*, has been reported by Moravec et al. (1987). But the present knowledge of fish capillariids is rather poor and it can be expected that the number of species will yet increase considerably.

In 1978, Orecchia and Paggi reported a capillariid from *Parablennius gattorugine* from Italy that had been assigned to the species *Capillaria microscopula* Mamaev, Parukhin et Baeva, 1963. But examination of the capillariid specimens newly collected from *P. gattorugine* from the same region (Gulf of Gaeta) showed that they represented a new, hitherto undescribed species of the genus *Pseudocapillaria* Freitas, 1959; therefore, we are describing it below as *P. parablennii* sp. n.

**MATERIALS AND METHODS**

The nematodes were fixed in 70 % ethanol and, for examination, they were cleared with glycerine. Drawings were made with the aid of a Zeiss microscope drawing attachment. The specimens have been deposited in the helminthological collection of the Institute of Parasitology, Czechoslovak Academy of Sciences, České Budějovice. All measurements are given in millimetres.

**RESULTS**

*Pseudocapillaria (P.) parablennii* sp. n.

Fig. 1

**Description:** Comparatively small nematodes, anterior end of body narrow, rounded, with indistinct mouth papillæ. Cuticle smooth. Two fairly wide, inconspicuous lateral bacillary bands present, extending almost along whole length of body. Muscular oesophagus relatively short. Stichosome consisting of single row of large stichocytes subdivided into several transverse annuli and provided with conspicuously large cell nuclei; alternation of lighter-coloured and darker (more granular) stichocytes

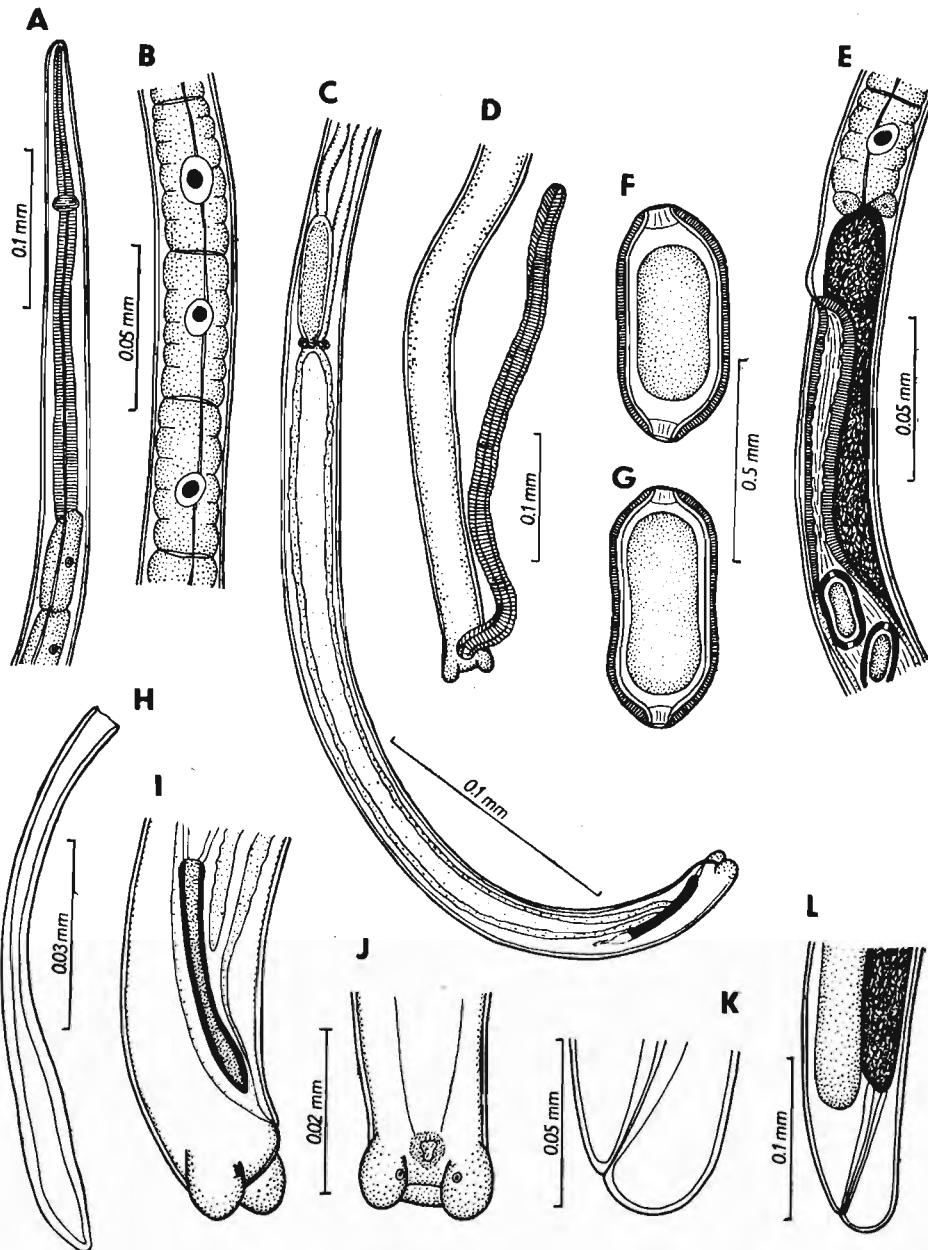


Fig. 1. *Pseudocapillaria (P.) parablennii* sp. n. A — anterior end of gravid female; B — stichosome region; C — posterior end of male; D — posterior end of male with evaginated spicular sheath; E — vulva region; F, G — mature egg; H — spicule; I, J — caudal end of male, lateral and ventral views; K — tail of female; L — posterior end of female.

indistinct. Nerve ring encircling muscular oesophagus approximately at border of its first and second thirds. Two distinct wing-like cells present at junction of oesophagus and intestine.

**Male** (5 specimens; measurements of holotype in brackets): — Length of body 6.72—7.43 (6.99), maximum width 0.041—0.054 (0.054). Maximum width of lateral bacillary bands 0.018—0.024 (0.018). Length of entire oesophagus 3.40—3.78 (3.78), representing 49—54 (54) % of whole body length. Length of muscular oesophagus 0.258—0.331 (0.282), distance of nerve ring from anterior extremity 0.078—0.087 (0.084). Length of stichosome 3.14—3.50 (3.50), stichocytes 35—39 (35) in number. Spicule short, length 0.090—0.099 (0.099), representing 1.3—1.4 (1.4) % of body length; distal part of spicule distinctly expanded; anterior part of spicule 0.006 (0.006) wide, width of its posterior part 0.007—0.009 (0.009). Spicular surface almost smooth. Spicular sheath nonspiny, with fine transverse striation; evaginated sheath fairly long, 0.57 (—) in length and 0.015 (—) in width. Posterior end of body rounded, provided with two large lateral lobes 0.012—0.015 (0.015) long, each of them bearing one minute papilla on its inner side; dorsal cuticular membrane not present. Testis reaching anteriorly to junction of oesophagus and intestine. Cloacal tube very long, spicular canal joining it approximately at mid-length of spicule. Length of tail 0.015 to 0.033 (0.033).

**Female** (5 specimens; measurements of allotype in brackets): — Body length of gravid females 8.68—10.34 (10.28), maximum width 0.068—0.081 (0.075). Width of lateral bacillary bands 0.027 (0.027). Length of entire oesophagus 3.77—5.00 (4.56), representing 41—50 (44) % of body length. Length of muscular oesophagus 0.285—0.327 (0.285), of stichosome 3.45—4.70 (4.27); number of stichocytes 32—41 (37). Distance of nerve ring from anterior extremity 0.078—0.099 (0.099). Vulva situated 0.045—0.105 (0.057) below oesophagus end level, anterior vulvar lip usually slightly elevated. Eggs oval, polar plugs not protruding or only slightly protruding. Egg wall two-layered, inner layer hyaline, outer layer with very fine superficial sculpture; content of eggs uncleaved. Size of eggs 0.063—0.066 × 0.027—0.030 (0.066 by 0.030), thickness of their wall being 0.003 (0.003). Eggs arranged in one file in uterus. Ovary exceeding posteriorly proximal end of rectum; length of rectum 0.075 to 0.090 (0.075). Posterior end of body rounded, anus distinctly subterminal; length of tail 0.012—0.018 (0.015).

**Host:** *Parablennius gattorugine* (Brünn) (Blenniidae, Perciformes).

**Localization:** intestine.

**Locality:** Gulf of Gaeta — 3 km north of Gaeta, Tyrrhenian Sea (west coast of Italy).

**Prevalence:** in 7 out of 14 (50 %) fish examined; total number of nematode specimens collected 43 (15 ♂♂ + 28 ♀♀).

**Deposition of type specimens:** holotype (♂), allotype (♀), and paratypes in the helminthological collection of the Institute of Parasitology, Czechoslovak Academy of Sciences, České Budějovice (Cat. No. N-283), Czechoslovakia.

**Etymology:** The specific name of this parasite is derived from the generic name of its fish host.

## DISCUSSION

The general morphology of capillariids of the present material shows clearly that they belong to the genus *Pseudocapillaria* Freitas, 1956 and namely to its nominate subgenus. At present this genus comprises a total of 8 valid species, mostly parasitic in marine fishes (see Moravec 1987). In possessing a markedly short spicule, *P. parablennii* sp. n. resembles only *P. microscopula* (Mamaev, Parukhin et Baeva, 1963) and *P. carangi* (Parukhin, 1971); all other congeneric species are noted for a distinctly

longer spicule and they can be distinguished by other features too (see Moravec 1987). Unfortunately, the original descriptions of both *P. microspicula* and *P. carangi* are inadequate and, consequently, the comparison of these species with *P. parablennii* sp. n. is rather difficult. Our attempts to obtain the type specimens of *P. microspicula* and *P. carangi* for re-examination were unsuccessful.

The size of the male body of *P. microspicula* is smaller than that of *P. parablennii* sp. n. (3.8–4.1 mm versus 6.7–7.4 mm) and also the oesophagus is much shorter in the first species (at most 1.85 mm versus 3.40–3.78 mm). Although the length of the spicule is much the same in these two species (0.078–0.095 mm and 0.090–0.099 mm), its shape seems to be different: it is slender, only 0.003 mm wide, non-expanded at its posterior part in *P. microspicula*, whereas it is markedly expanded at distal part, attaining the maximum width up to 0.009 mm in the new species. The male caudal lobes of *P. parablennii* sp. n. are large, elongate, each bearing a small inner papilla, whereas those of *P. microspicula* have been referred to as being spherical, slightly elevated and no papillae were observed on them. The female morphology could not be compared as only immature females of *P. microspicula* have been described. In addition to morphological differences, also the host types and geographical distribution should be taken into account: while *P. microspicula* was described from the starry flounder, *Pleuronectes stellatus* (fam. Pleuronectidae, Pleuronectiformes) from the Japan Sea (Mamaev et al. 1963), the new species parasitizes the blenny, *Parablennius gattorugine* (fam. Blenniidae, Perciformes) of the Mediterranean region.

*P. carangi* was described as a parasite of a number of marine fishes of the family Carangidae (*Seriola*, *Caranx*, *Atropus*, *Decapterus*, *Megalopsis*, *Selar*, *Trachurus*) from the western part of the Indian Ocean (Monar Bay, Arabian Sea, Gulf of Aden, Red Sea, southeastern coast of Africa) (Parukhin 1971, 1976). This species can be distinguished from *P. parablennii* sp. n. by the shape of the spicule (spicule expanded in middle part, width 0.013 mm, in *P. carangi* and at posterior part, width 0.007 to 0.009 mm, in *P. parablennii* sp. n.), markedly smaller caudal lobes in the male (see Fig. 45 in Parukhin 1976), smaller eggs (0.046–0.053×0.021–0.026 mm versus 0.063–0.069×0.027–0.030 mm), and somewhat greater measurements of males and females (males: 9.2 mm versus 6.7–7.4 mm; females: 9.0–16.0 mm versus 8.7 to 10.3 mm).

*P. parablennii* sp. n. is the second capillariid species and the first member of *Pseudocapillaria* described so far from fishes of the family Blenniidae. The only other capillariid parasitizing blennies is *Paracapillaria helenae* (Layman, 1930) reported from *Azuma emnion* from the Japan Sea (Layman 1930); this species differs from *P. parablennii* sp. n. mainly in the structure of the male caudal end (presence of a membranous bursa) and in the considerably longer spicule (0.203 mm versus 0.090–0.093 mm). In addition, Moravec and Ergens (1971) reported an accidental finding of *Pseudocapillaria tomentosa* (Dujardin, 1843), an intestinal parasite of European cyprinids, from the freshwater blenny, *Blennius fluviatilis* from Yugoslavia; this freshwater parasite can be easily distinguished from *P. parablennii* sp. n. on the basis of the spicule length (0.24–0.33 mm) and other features.

## *PSEUDOCAPILLARIA PARABLENNII* SP. N. (NEMATODA: CAPILLARIIDAE) OT МОРСКОЙ РЫБЫ *PARABLENNIUS GATTORUGINE* BRÜNN ИЗ ИТАЛЬЯНСКОГО ПОБЕРЕЖЬЯ

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**Резюме.** Описан новый вид нематоды, *Pseudocapillaria parablennii* sp. n. из кишечника морской рыбы *Parablennius gattorugine* Brünn (сем. Blenniidae, Perciformes) из западного побережья Италии (Гетский залив, Тирренское море). Этот паразит характеризован главным образом строением хвостового конца самцов (наличие двух крупных латеральных выростов, отсутствие дорсальной кутикулярной мембранны), очень короткой спикулой (0,090–0,099 мм) и строением яиц. Это первый вид рода *Pseudocapillaria* описанный от рыб семейства Blenniidae (собачковые).

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