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Parasitology

PARASITES OF MARINE FISHES FROM NEW ZEALAND

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The level of parasitic invasion in marine fishes off the South, Campbell, and Auckland Islands was investigated. The main object of study was *Macruronus novaezelandiae*, other commercially important species being checked as well. A considerable infection with parasites was revealed; some of the parasites found are pathogenic to man.

INTRODUCTION

In search for fishing grounds available to Polish vessels, RV "Profesor Siedlecki" was sent on a reconnaissance cruise to New Zealand waters in February 1978. The survey took place during the Third Polish Marine Antarctic Expedition, after the vessel had to leave the Antarctic waters to take fuel and supplies in Wellington. The vessel operated for 17 days on the shelf off the South, Auckland, Campbell, and Bounty Islands and at the Chathan ridge area. Ichthyologic and parasitologic observations were being made mainly off the South and Auckland, and — to a lesser extent — off the Campbell. Exploitable fish stocks were located at these fishing grounds. However, a considerable parasitic infestation of the fish was revealed at the same time.

Among the parasitic species found, some are pathogenic to man, e.g., *Anisakis simplex*, *Phocanema decipiens*, *Capillaria* sp. and other species occurring in fish muscles; following an inappropriate treatment of fish, they may become a hazard for human health. Moreover, owing to their mass occurrence they act toward decreasing the fish market

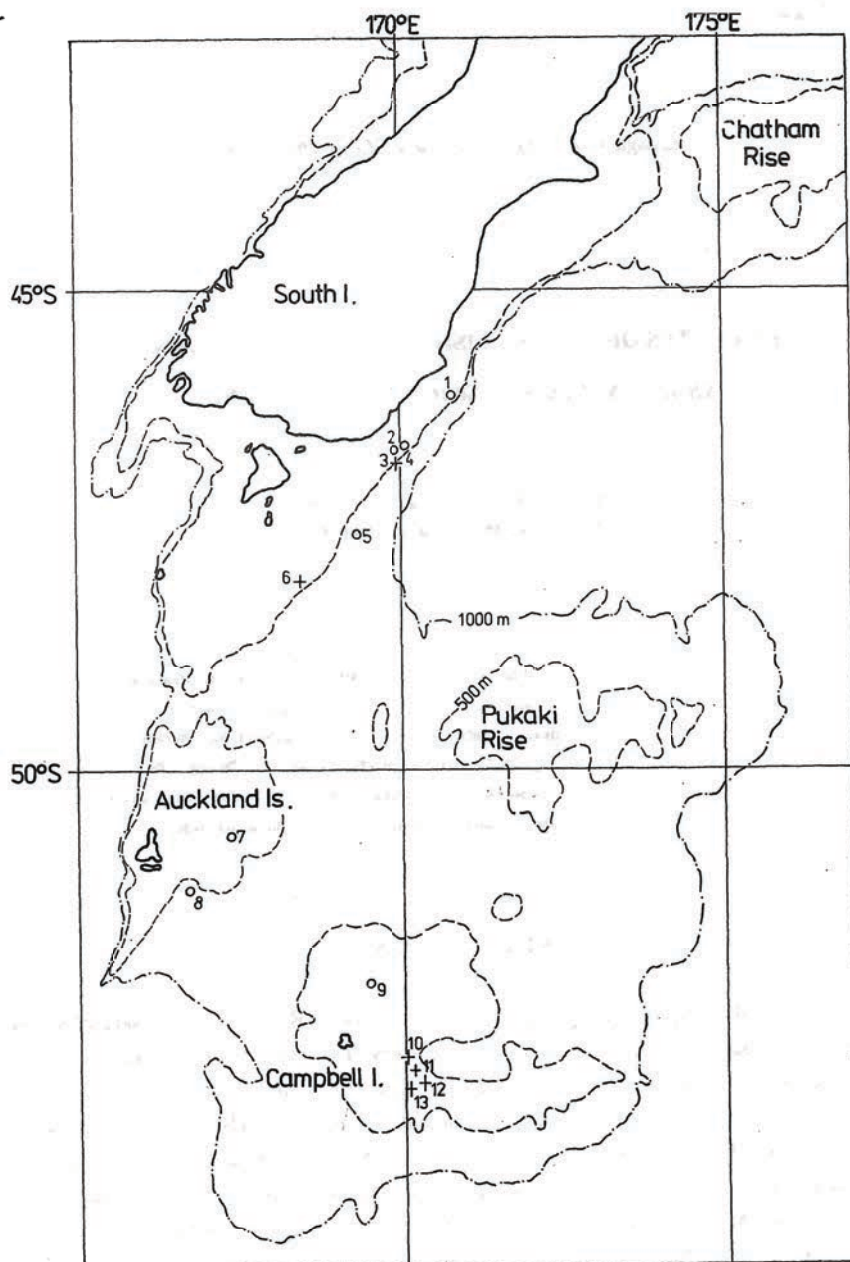


Fig. 1. Sampling sites of fish for parasitologic observations. Capture sites of *Macruronus novaezelandiae* and other species denoted by circles and crosses, respectively

value by inflicting a disgusting appearance to the specimens affected. Hence, in addition to ichthyological analyses, parasitologic ones were imperative with respect to the fish suitability for marketing.

New Zealand fish parasites have been relatively poorly known so far and information is hardly accessible. Recently, there has appeared a great aid in the form of a checklist compiled by Hewitt and Hine (1973), based on their own results and literature data, and containing names of fish species in the alphabetical order, parasites of each species described so far, and the literature references. The checklist allows comparative studies on parasites collected off New Zealand to be performed.

MATERIALS AND METHODS

The main bulk of material consisted of samples of fish taken from 7 test hauls. Additionally, hauls No. 3 and 6 taken off the South Island, and hauls No. 10, 11, 12, and 13 taken off the Campbell yielded samples taken at random. The sampling sites are presented on a map in Fig. 1.

The fish samples collected at the south-eastern shelf off the South were taken from the following depth ranges: Sample 1:365–400 m; Sample 2:423–454 m; Sample 3:420–482 m; Sample 4:570–592 m. Off the Auckland, the sampling depths were 417 m (Sample 5) and 480–510 m (Sample 6). Sample 7 was taken from a haul made at 170–205 m off the Campbell Island.

The study was focused mainly on *Macruronus novaezelandiae* (Merlucciidae) prevailing in catches off New Zealand. Total body length and weight found for the fish off the South ranged within 49–96 cm and 300–3610 g (mean of 1078 g), respectively. Off the Auckland, the fishes caught measured 39–94 cm and weighed 240–2700 g (mean of 1537 g); the total body length range off the Campbell was 72–95 cm, while the weight ranged within 100–2380 g (mean of 1711 g).

The fishes sampled were sent off frozen to the Institute of Ichthyology's laboratory, which might have affected their parasites.

Other species were examined randomly on board, the removed parasites being sent to the Institute for examination. Only a qualitative sample of parasites was taken on board, quantitative analyses being made sporadically.

Eventually, the following species were examined: off the South Island (hauls No. 1, 2, 3, 4, 5, and 6)

Macruronus novaezelandiae (hauls No. 1, 2, and 5),

Genypterus blacodes (hauls No. 3, 4, and 6),

Merluccius australis (haul No. 3),

Seriola punctata (haul No. 6);

off the Campbell Island (hauls No. 10, 11, 12, 13, and 9)

Macruronus novaezelandiae (haul No. 9),

Genypterus blacodes (hauls No. 11 and 13),

Micromesistius australis (hauls No. 10 and 11),
Notothenia microlepidota (haul No. 13),
Argentina elongata (haul No. 12);
off the Auckland Island (hauls No. 7 and 8)
Macruronus novaezelandiae.

Sites of those hauls containing *M. novaezelandiae* are denoted with circles on the map, the remaining ones being marked with crosses.

Table 1

Invasion of parasites in New Zealand fishes

Species of fish	<i>Macruronus novaezelandiae</i>	<i>Genypterus blacodes</i>	<i>Merluccius australis</i>	<i>Micromesistius australis</i>	<i>Seriotelella punctata</i>	<i>Argentina elongata</i>	<i>Notothenia microlepidota</i>	Localication of parasite
<i>Tricotyledonia genypteri</i>		+						stomach
<i>Gonocerca phycidis</i>	+							"
<i>Didymozoonidae</i> gen. sp.					+			gonads
<i>Anoncocephalus chilensis</i>		+						intestine
<i>Hepatoxylon trichiuri</i> , larva	+	+	+	+				abdominal cavity
<i>Grillotia</i> sp., larva	+	+						" "
<i>Anisakis simplex</i> , larva	+	+		+		+		" "
<i>Thynnascaris adunca</i> , larva	+	+				+		" "
<i>Thynnascaris adunca</i> , adult	+	+		+	+			stomach, intestine
<i>Phocanema decipiens</i> , larva	+	+					+	muscles, abdom. cavity
<i>Capillaria</i> sp.,		+						muscles
<i>Corynosoma semerme</i> , larva	+	+						abdom. cavity
<i>Trifur lotellae</i>	+							submentum, bran- chial cavity
<i>Sphyrion laevigatum</i>		+						skin
<i>Chondracanthus genypteri</i>		+						oral cavity

RESULTS

A total of 14 parasitic species were found in the fishes off New Zealand (Table 1): 3 species of digenetic trematodes (*Digenea*), 3 species of cestodes (*Cestoda*), 4 species of nematodes (*Nematoda*), 1 acanthocephalan species (*Acanthocephala*), and 3 species of parasitic copepods (*Copepoda*).

DIGENEA

Family: *Hemiuridae*

Tricotyledonia genypteri Fyfe, 1954

Syn.: *Grassitema genypteri* (Fyfe, 1954) Yamaguti, 1958

The species was found in stomachs of *Genypterus blacodes* caught off the South and Campbell Islands.

As stated by Hewitt and Hine (1973), *T. genypteri* had been found off New Zealand by Fyfe (1954), Yeh (1954), and Manter (1960). Other species infected by the parasite included *Anguilla australis schmidtii*, *A. dieffenbachii*, and *Conger verreauxi*.

Gonocerca phycidis Manter, 1925

Syn.: *Gonocerca trematomi* Byrd, 1963

The trematode was fairly common in stomachs of *Macruronus novaezelandiae* off the South, Campbell, and Auckland. The extent of invasion is probably higher than that stated in Table 2 as the fishes were often found with their stomachs completely or partly everted so that the parasites could have been mechanically removed on hauling and thus missed on inspection.

The species had been found off New Zealand by Manter (1925, 1954) in stomachs of *Coelorhynchus australis*, *Merluccius gayi*, *Parapercis colias*, *Scorpaena cardinalis* and *Macruronus novaezelandiae*. Additionally, it is known to occur in *Merluccius bilinearis* off the North American Atlantic coast (Szidat, 1955). Recently, Zdzitowiecki (1979) found *G. phycidis* in some Antarctic species of the South Shetlands. The trematode occurred in stomachs, on gills and in mouth cavity of *Chaenocephalus aceratus*, *Parachaenichthys georgianus*, and *Pseudochaenichthys georgianus*.

Didymozoonidae gen. sp.

Four cysts measuring 3 x 3 mm, 4 x 5 mm, and 6 x 5 mm appearing as "nodes" on gonads were found in the body cavity of *Seriotelella punctata* off the South. The sample was fixed in formalin which made it impossible to isolate intact parasites. They could not be identified to species so the presence of these parasites is only announced here.

CESTODA

Order: *Pseudophyllidea*

Family: *Trienophoridae*

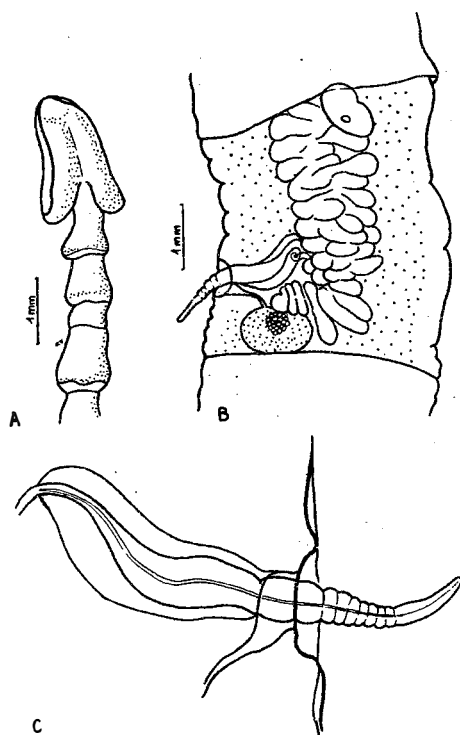


Fig. 2. *Anoncocephalus chilensis*. A – scolex; B – mature proglottis; C – cirrus

Anoncocephalus chilensis (Riggenbach, 1896) (Fig. 2)

Syn.: *Boghriotaenia chilensis* Riggenbach, 1896

These rather large cestodes measuring about 20 cm in length and up to 3 mm of segment width were found in intestines of *Genypterus blacodes* off the South.

Yamaguti (1959) found the species in *G. chilensis* off the Chilean coast.

The first record of the species in the New Zealand waters.

Order: *Tetrahynchidea*

Family: *Hepatoxylidae*

Hepatoxylon trichiuri (Holten, 1802) plerocercoid (Fig. 3)

Larvae of *H. trichiuri* are common parasites of the New Zealand fishes; 80.4–85.7% of *Macruronus novaezelandiae* examined contained in their body cavities 1–27 parasites in the form of egg-shaped cysts or cylindrical larvae loosely scattered among the viscera. The parasites were present in *M. novaezelandiae* caught off the South, Campbell, and Auckland. Apart from *Macruronus*, the cestode was found in *Genypterus blacodes* off the



Fig. 3. *Hepatoxylon trichiuri* – plerocercoid

South and Campbell, *Merluccius australis* off the South, and *Micromesistius australis* off the Campbell.

The hake turned out to be particularly strongly infested. A qualitative sample taken from a single fish contained 82 larvae lying unattached or grown in the tissues. The viscera of the individual in question showed extensive adhesion.

Hewitt and Hine (1973), after Robinson (1959) refer to *Hepatoxylon trichiuri* larvae found in 5 elasmobranch species and some teleosts such as *Cyttus novaezelandiae*, *Genypterus blacodes*, *Lepidopus caudatus*, and *Macruronus novaezelandiae*.

H. trichiuri is commonly found in marine fishes. A detailed description of the larvae, synonymy, and geographic distribution is given by Dollfus (1942).

Grillotia sp.

A parasite rarely found in the New Zealand fishing grounds. Single larvae were being found in muscles of *Genypterus blacodes* off the Campbell (fishing ground No. 11) and in *Macruronus novaezelandiae* off the South (fishing ground No. 5).

Table 2

Invasion of parasites in *Macruronus novaezelandiae* off South, Campbell and Auckland Islands (New Zealand)

Species of parasites	South I.				Campbell I.				Auckland I.			
	No of sample: 1, 2, 5				No of sample: 9				No of sample: 7 and 8			
	No of exam. fishes: 46				No of exam. fishes: 14				No of exam. fishes: 21			
	Incidence %	Intensity	Mean intensity	Total number of parasites	Incidence %	Intensity	Mean intensity	Total number of parasites	Incidence %	Intensity	Mean intensity	Total number of parasites
<i>Gonocerca phycidis</i>	13	1-19	6.5	39	14.3	5	5	10	33.3	1-5	3	21
<i>Grillotia</i> sp., larva	2.2	9	9	—	—	—	—	—	—	—	—	—
<i>Hepatoxylon trichiuri</i> , larva	80.4	1-27	10.5	391	85.7	2-12	6.3	76	85.7	1-12	5.6	101
<i>Anisakis simplex</i> , larva	76	1-112	23.3	818	100	15-252	135.4	1895	100	6-290	89.9	1888
<i>Thynnascaris adunca</i> , larva	100	numerous	numerous	numerous	100	very numerous	very numerous	very numerous	100	numerous	numerous	numerous
<i>Phocanema decipiens</i> , larva	—	—	—	—	—	—	—	—	9.5	3-4	3.5	7
<i>Corynosoma semerme</i> , larva	—	—	—	—	14.3	1-20	10.5	21	4.4	8	8	8
<i>Trifur lotellae</i>	—	—	—	—	7.1	1	1	1	23.8	1-3	1.4	7

*NEMATODA*Family: *Anisakidae**Anisakis simplex* (Rudolphi, 1809), stage 3 larva

The *Anisakis* larvae are very common in the New Zealand waters, their mass occurrence being frequently noted. They were found in *Macruronus novaezelandiae* from all the fishing grounds visited (Table 2) with 76–100% incidence, the invasion intensity reaching 290 larvae per fish. The nematodes were also found in random samples of *Genypterus blacodes*, *Micromesistius australis*, and *Argentina elongata* (Table 1).

An evidence of the mass occurrence mentioned above was provided by randomly taken quantitative samples of *Genypterus blacodes* off the Campbell. A fish individual measuring 89 cm was found to contain 1356 larvae (Fig. 4).

The *Anisakis* larvae occurred on various organs (peritoneum, mesentery, liver, spleen). No larvae were present in muscles.

The common occurrence of *Anisakis* larvae in New Zealand fishes is confirmed by data given by Hewitt and Hine (1973). Although the authors identified the larvae as *Anisakis* sp., they were of the opinion that they had been probably dealing with *A. simplex*. They recorded the larvae in 47 out of 117 teleost species listed and in 10 out of 21 elasmobranchs occurring off New Zealand.

The larvae of *A. simplex* have been found in many fish species all over the world, which poses a considerable hazard to man when fresh or insufficiently processed fishes are consumed. Many cases of anisakiasis have been recorded in Japan, Holland, USA, and other countries.

Phocanema decipiens (Krabbe, 1878)

Syn.: *Terranova decipiens* (Krabbe, 1878)

Porrocaecum decipiens (Krabbe, 1878)

Larvae of *Phocanema decipiens* were found in viscera of *Macruronus novaezelandiae* off the Auckland, in muscles of *Genypterus blacodes* off the South and Campbell, and in muscles of *Notothenia microlepidota* off the Campbell.

In *Macruronus novaezelandiae* the larvae occurred most commonly in the liver, 9.5% of all the fish specimens having 3–4 larvae each.

6 larvae were found in *Notothenia microlepidota* muscle sample, which points out to a considerable infestation of the species off New Zealand.

According to Hewitt and Hine (1973), the *Ph. decipiens* larvae had been found in New Zealand fishes before, namely in muscles of *Notothenia colbecki*, *N. macrocephala*, and *N. microlepidota* off the Antipodes and Auckland, in *Rhombosolea tapirina* off the Campbell, and — recorded as *Porrocaecum* sp. — in the body cavity and muscles of *Thyrssites atun*.

The larvae are particularly common in fishes of the northern hemisphere, especially in cod (*Gadus morrhua*). An infestation of humans was recorded in Japan, USA, and Canada.

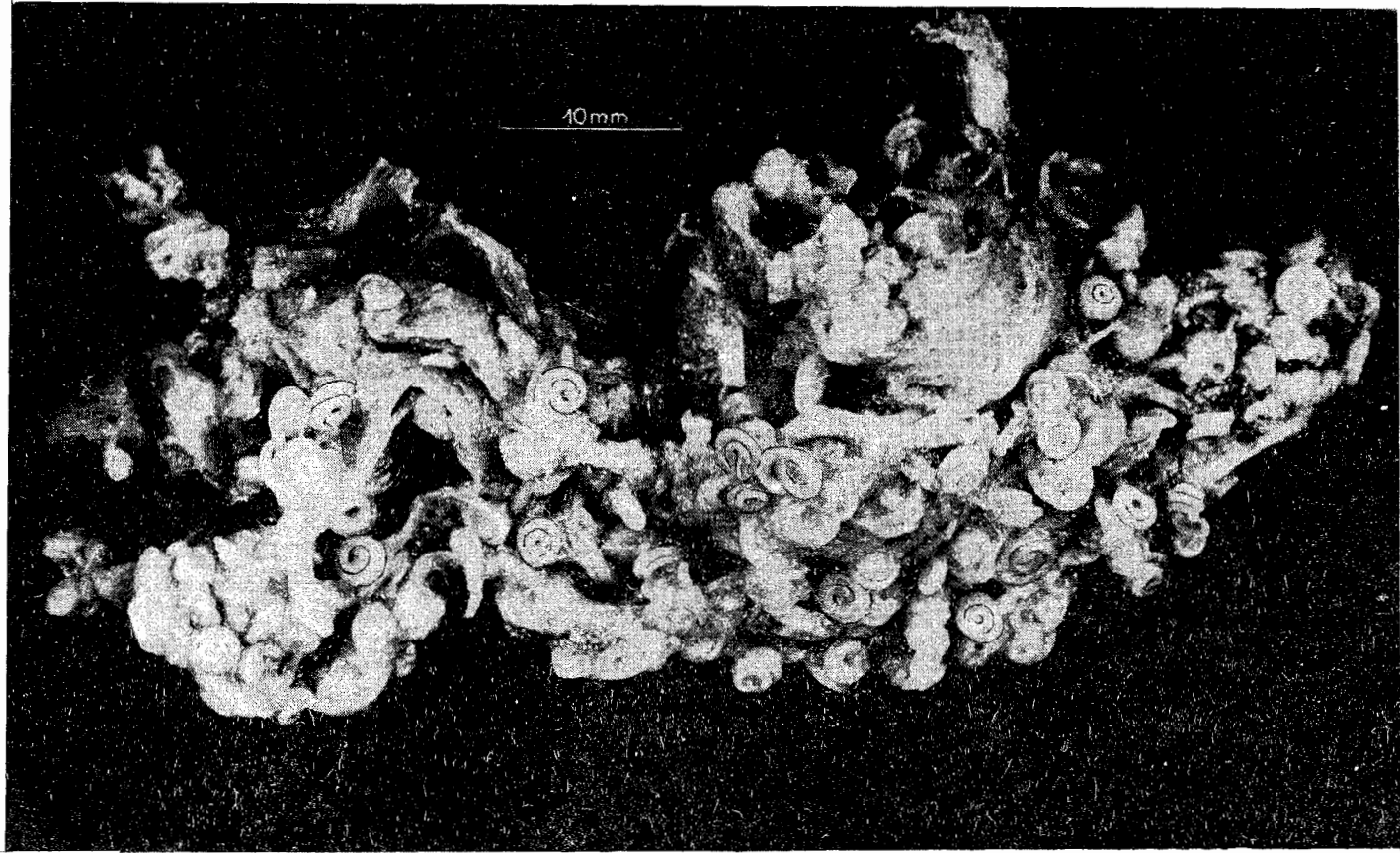


Fig. 4. *Anisakis simplex* – stage 3 larvae in abdominal cavity of *Genypterus blacodes*

Thynnascaris adunca (Rudolphi, 1802)Syn.: *Contracaecum aduncum* (Rudolphi, 1802)

A very common nematode in New Zealand fishes. Larvae and adults were being found in the body cavity and intestines, respectively, of *Macruronus novaezelandiae*, and in samples of *Genypterus blacodes*, *Micromesistius australis*, *Seriola lalandi*, and *Argentina elongata*.

The invasion incidence in *Macruronus novaezelandiae* reached 100% in all the fishing grounds visited. The larvae were occurring all over the fish body cavity; they were particularly numerous between the pyloric caeca. The number of adult nematodes found hardly reflects the real extent of invasion since *M. novaezelandiae* had their stomachs partly pushed into the mouth cavity or entirely everted, whereby the parasites could have been lost on hauling.

Hewitt and Hine (1973) confirm the common occurrence of *Thynnascaris nematodes* in fishes from New Zealand. The authors refer to unpublished data of Brunsdon (1956) and record the nematode as *Contracaecum* (*Thynnascaris*) sp. larva in 53 teleost species and adults in 13 species.

Order: *Trichinellida*Family: *Capillariidae**Capillaria* sp. (Figs. 5 and 6)

A muscle sample of an unidentified fish (most likely *Genypterus blacodes*) caught off the South contained thin, almost black smudges and spots appearing as mould. They were found to contain dead nematodes of an unidentifiable species and numerous eggs in brown capsules, each with 2 clearly marked poles. The eggs were covered with a delicate transparent sheath. Inside the eggs there were larvae of nematodes. Based on the egg structure, the nematodes were identified as *Capillaria* sp.

So far, New Zealand fishes (*Macruronus novaezelandiae*, *Coelorhynchus australis*, *Chelidonichthys kumu*, and *Mora pacifica*) have been found to contain *Capillaria* nematodes in the intestine (Hewitt and Hine, 1973), no *Capillaria* being recorded from muscles.

The presence of *Capillaria* in fish muscles should be viewed with a particular attention since some species pathogenic to man may be involved. An infestation of man by fish-borne *Capillaria philippinensis* in Philippines (Chitwood et al., 1968) and in Thailand (Sanpavit et al., 1974) is known.

*ACANTHOCEPHALA*Family: *Polymorphidae**Corynosoma strumosum* (Forssel, 1904)

Larvae (*acanthellae*) of the acanthocephalan, measuring 2.5–3 mm were found in *Macruronus novaezelandiae* from fishing ground No. 9 off the Campbell and from fishing ground No. 4 off the South.



Fig. 5. *Capillaria* sp. in fish muscles (black smudges and spots)

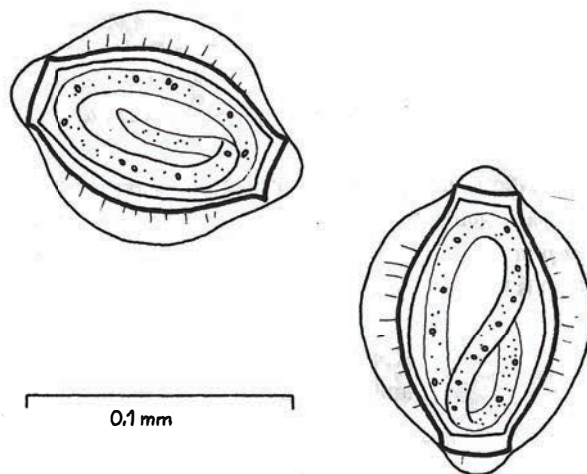


Fig. 6. *Capillaria* sp. eggs

They were found to occur on the terminal intestine. Off the Campbell, *M. novaezelandiae* showed 14.3% invasion incidence with an intensity of 1–20 acanthocephalans per fish, while the invasion incidence off the Auckland amounted to 4.4%.

Genypterus blacodes was examined at random, hence no quantitative data can be given.

Corynosoma semerme has been known as a parasite from the northern hemisphere. Certain Australian fish-eating birds showed the presence of the species (Yamaguti, 1963).

The individuals of the species examined were found in the frozen fish so their internal organs were not adequately visible; it was difficult to completely remove the acanthocephalan proboscis. However, the key characters of the species were easily recognizable.

The pear-shaped larval proboscis is as a rule situated along the middle line of the body and provided with 23–24 longitudinal rows of hooks, 12–13 hooks in a row. The largest hooks are placed in a swollen part of the proboscis in the 6th and 7th row from the neck. The 5 rows below contain small hooks with degenerated bases. The proboscis capsule has double walls and a nervous ganglion inside. The anterior part of the trunk is covered with fine spines. In males, relatively large spines occur on the posterior part of the body, around the genital pore. The posterior spines in females are smaller and poorly visible.

COPEPODA PARASITICA

Suborder: Peecilostomatoida

Family: Chondracanthidae

Chondracanthus genypteri Thomson, 1889 (Figs. 7 and 8)

A *Genypterus blacodes* individual caught off the South had 3 females in its mouth cavity skin, in a skin pocket where heads of the parasites were hidden.

Ch. genypteri was recorded in *G. blacodes* off New Zealand by Hewitt and Hine (1973). Recently, Ho (1975) has found the parasites on *G. blacodes* off New Zealand, too. His materials were collected from Cape Terakeral, Oaro, Waitings, Chathan Is., Nagahuranga, and Wellington.

Ch. genepteri is specific for *G. blacodes*.

Suborder: Siphonostomatoida

Family: Pennellidae

Trifur lotellae (Thomson, 1890) (Fig. 9)

Syn.: *Lernaeocera lotellae* (Thomson, 1890)

The parasites were being frequently found on *Macruronus novaezelandiae* off the Campbell (14.3% invasion incidence) and Auckland (23.8%). They were attached by their heads in guttural muscles, more seldom – inside the gill cavity on the operculum, 1–3 specimens in a fish. In most cases, the parasites occurred as single individuals.

The species had been found off New Zealand by Thomson (1880) (Hewitt and Hine, 1973) on gills and ventral surfaces of *Physiculus bacchus*.

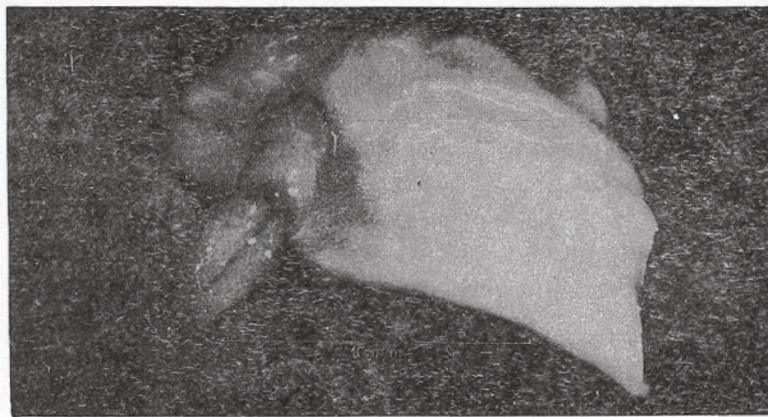


Fig. 7. *Chondracanthus genypteri* in *Genypterus blacodes* mouth cavity mucosa

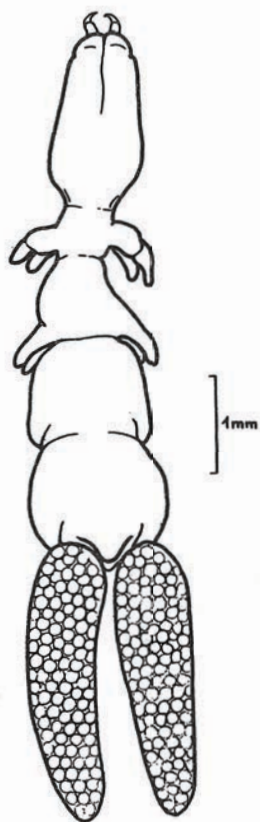


Fig. 8. *Chondracanthus genypteri*, female

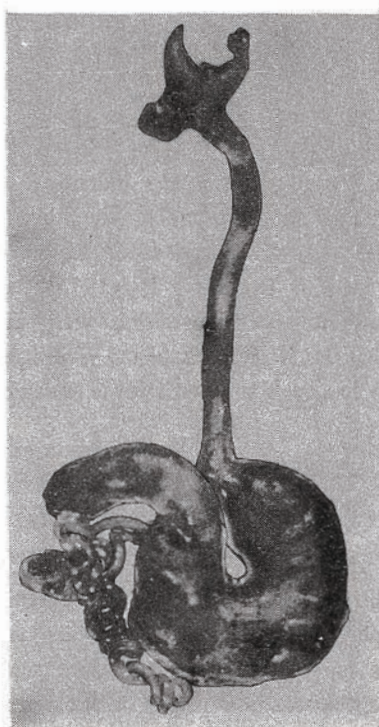


Fig. 9. *Trifur lotellae*, female

Family: *Sphyridae**Sphyrion laevigatum* Guérin-Meneville, 1849 (Fig. 10)Syn.: *Sphyrion laeve* (Quoy et Gaimard, 1824)*Sphyrion kingi* Cunningham, 1871 (?)

The parasite was being found on *Genypterus blacodes* skin, its head in fish muscle. Externally, the abdomen with grape-like gill processes and elongated egg sacs is seen. The species found sporadically off the South.



Fig. 10. *Sphyrion laevigatum*, female

S. laevigatum is known to occur off New Zealand (Hewitt and Hine, 1973). Yamaguti (1963) recorded the species also in *Genypterus blacodes* from New Zealand as well as in *Sebastes marinus* and *Cyclopterus lumpi*.

According to Wilson (1919), *S. kingi* is also a synonym of *S. laevigatum*, while Yamaguti (1963) considers *S. kingi* a valid species occurring on the morue off the Sandwich I., and on *Genypterus* and *Merluccius hubbsi* from the South African waters.

DISCUSSION

The parasitologic examinations described were carried out off the South, Campbell, and Auckland Islands (Fig. 1). The parasites found are reported in Tables 1 and 2 on graphs I, II, and III (Fig. 11). Table 1 comprises names of parasites found in different fish species, while Table 2 and the graphs concern the *Macruronus novaezelandiae* parasites only because this species was the only one that yielded materials sufficient for a quantitative analysis.

M. novaezelandiae from all the fishing grounds visited were found to contain numerous individuals, sometimes occurring in masses, of 3 parasitic species, namely: larvae of a

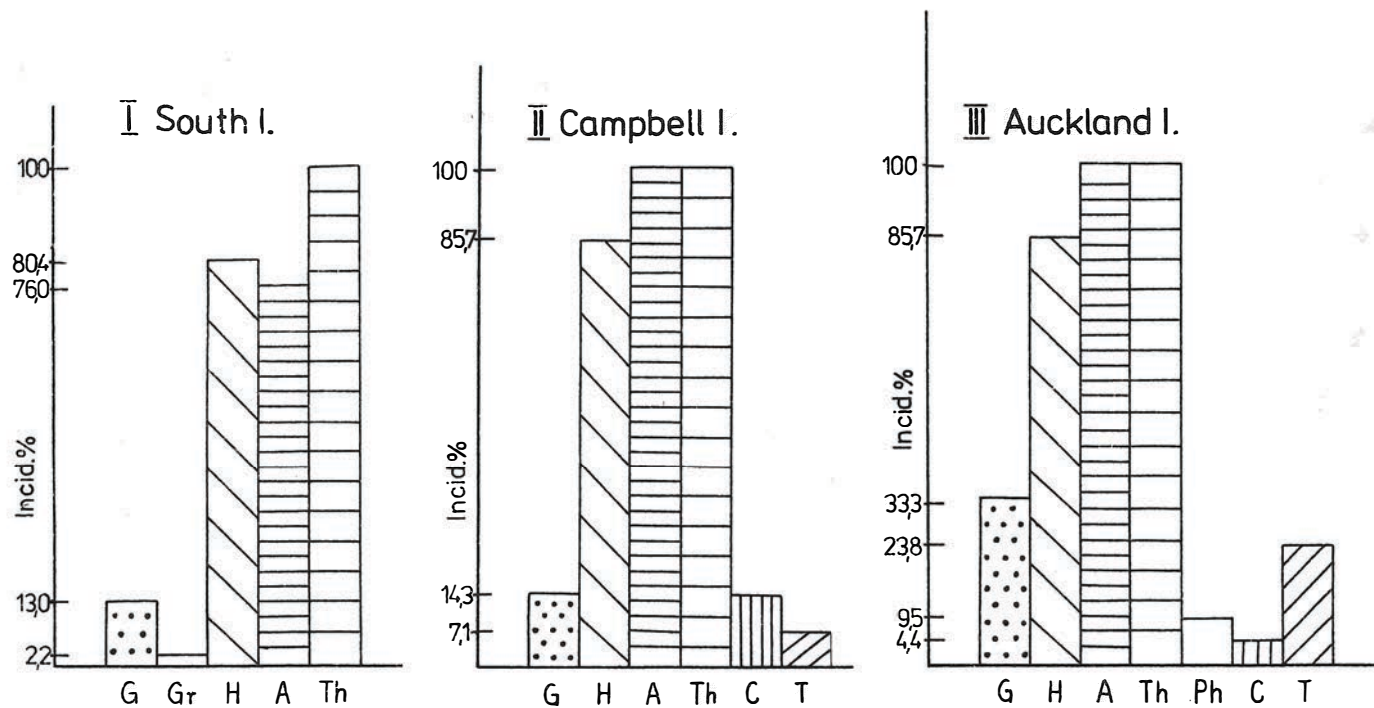


Fig. 11. Invasion incidence of parasites in *Macruronus novaezelandiae* from fishing grounds visited. G = *Gononocerca phycidis*; Gr = *Grillotia* sp.; H = *Hepatoxylon trichiuri*; A = *Anisakis simplex*; Th = *Thynnascaris adunca*; C = *Corynosoma semerme*; Ph = *Phocanema decipiens*; T = *Trifur lotellae*

cestode, *Hepatoxylon trichiuri*, stage 3 larvae of *Anisakis simplex*, and adult *Thynnascaris adunca*. The larval stages of all the species were present in the fish body cavity (Table 2). A parasite presenting hazards to man is the nematode *Anisakis simplex*; its stage 3 larvae can accidentally infect man, which results in serious pathological changes in the human alimentary tract. No *Anisakis* larvae were found in muscles of the fish specimens examined, no danger is thus involved in consuming the thoroughly gutted fish. Nevertheless, the parasites may occur in fish muscles as evidenced by ample literature; it is therefore imperative to freeze the fishes below -20°C to make sure that all the *Anisakis* larvae present have been killed.

The remaining parasitic species occurred rather sporadically and in low numbers; they are thought to be of a little importance for the fishery of the area.

However, the attention should be paid to the *Phocanema decipiens* larvae; they were being found in the liver of *Macruronus novaezelandiae* caught off the Auckland and in muscles of *Genypterus blacodes* and *Notothenia microlepidota* caught off the South and Campbell Islands (Tables 1 and 2). This nematode's larvae, known from many other fish species, are infectious to man and should be removed on filleting. The larvae are large (up to 4 cm long), red-coloured and well-visible in fish muscles, which makes them easy to spot.

A great caution should be exercised when treating the fishes infested with the *Capillaria nematodes* (Table 1).

In the present study, the nematode could not be identified to species; moreover, it was impossible to identify the host (it was most likely *Genypterus blacodes*). Nevertheless, fish fillets with changed, rotten-looking muscles containing eggs typical of *Capillaria* should be rejected as the genus comprises some species strongly pathogenic for man, causing — in the tropics — a long-lasting, often fatal, illness.

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PASOŻYTY RYB MORSKICH NOWEJ ZELANDII

Streszczenie

W czasie zwiadu rybackiego dokonanego w lutym 1978 roku przez r/v „Profesor Bogucki” w rejonie Nowej Zelandii, zebrano materiały parazytologiczne z ryb. Materiały te zbierano w okolicy wyspy South, Campbell i Auckland. Zbadano 81 sztuk *Macruronus novaezelandiae*, które w stanie zamrożonym były przysłane do Instytutu Ichtiologii oraz wrywkowo zbadano w stanie świeżym na statku *Genypterus blacodes*, *Merluccius australis*, *Micromesistius australis*, *Seriolaella punctata*, *Notothenia microlepidota* i *Argentina elongata*.

W wyniku badania znaleziono 14 gatunków pasożytów, w tym 3 gatunki przywr (*Digenea*), 3 gatunki tasiemców (*Cestoda*), 4 gatunki nicieni (*Nematoda*), 1 kolcogłów (*Acanthocephala*) i 3 gatunki pasożytniczych widłonogów (*Copepoda parasitica*) (Tabela 1 i 2).

Badania ilościowe przeprowadzone na *Macruronus novaezelandiae* wskazują, że najczęściej i najliczniej na wszystkich badanych rejonach występują 3 gatunki pasożytów. Są to larwy tasiemców czteroryjkowych *Hepatoxylon trichiuri* oraz larwy nicieni *Anisakis simplex* i *Thynnascaris adunca*.

Zwrócono uwagę na pasożyty zagrażające zdrowiu człowieka, a mianowicie larwy nicieni *Anisakis simplex*, *Phocanema decipiens* i *Capillaria* sp., które stwierdzono u ryb na badanych łowiskach. Z nich najczęściej występuje *Anisakis simplex*, który był stwierdzony u *Macruronus novaezelandiae*, *Genypterus blacodes*, *Micromesistius australis* i *Argentina elongata*. Dość częstym pasożytem okazała się *Phocanema decipiens* występująca u 3 gatunków badanych ryb (*Macruronus novaezelandiae*, *Genypterus blacodes* i *Notothenia microlepidota*).

Я. Грабда, В. Слосарчик

ПАРАЗИТЫ МОРСКИХ РЫБ НОВОЙ ЗЕЛАНДИИ

Р е з ю м е

Паразитологические материалы из рыб взяли в районе Новой Зеландии во время рыболовной разведки научно-исследовательского судна „Профессор Богущки“ в феврале 1978 г. Пробы взяли в районе островов South, Campbell, Auckland. Исследовали 81 экземпляров *Macruronus novaezelandiae* которые в замороженном виде получил Институт Ихтиологии а также выборочно исследовали непосредственно выловленных рыб из след-ующих видов: *Genypterus blacodes*, *Merluccius australis*, *Micromesistius australis*, *Seriotelella punctata*, *Notothenia microlepidota*, *Argentina elongata*. В результате исследований нашли 14 видов паразитов, среди них - 3 вида трематод (*Digenea*), 3 вида cestод (*Cestoda*) 4 вида нематод (*Nematoda*) 1 вид скребней (*Acanthocephala*) и 3 вида паразитических copepod (*Copepoda parasitica*) (таб.1 и 2). Количественные исследования проведенные на *Macruronus novaezelandiae* показали, что наиболее часто и в наибольшем количестве во всех исследованных районах находили 3 вида паразитов. Это личинки *Hepatoxylon trichiuri* а также личинки нематод *Anisakis simplex*, *Thynnascaris adunca*. Обратили внимание на паразиты угрожающие здоровью человека а именно: личинки нематод *Anisakis simplex*, *Phocanema decipiens*, *Capilaria* sp. которые нашли у рыб в исследованных районах. Среди них наиболее часто находили *A. simplex* которого обнаружили на *Macruronus novaezelandiae*, *Genypterus blacodes*, *Micromesistius australis*, *Argentina elongata*. Довольно часто находили паразита *Phocanema decipiens* обнаруженного у 3 видов рыб (*Macruronus novaezelandiae*, *Genypterus blacodes*, *Notothenia microlepidota*). Кроме того впервые нашли нематоды *Capilaria* sp. в мышцах рыб. Рекомендуется уничтожение зараженных филе а также глубокие замораживание, особенно рыб зараженных личинками *Anisakis simplex* которые в мышцах рыб могут ускользнуть вниманию ихтиологов.

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