

ON SOME LITTLE-KNOWN AND NEW SPECIES OF THE GENERA *PHILOMETRA* AND *SKRJABILLANUS* FROM FISHES IN HUNGARY

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The species of the Nematode genera *Philometra* and *Skrjabillanus*, frequent in fresh-water fishes and of common occurrence also in Hungary, deserve special attention from several points of view. Though it is true that recent studies (NYBELIN, 1931; WIERZBICKI, 1960; ČAKAY, 1957), particularly those of RASHEED (1963), greatly contributed to the knowledge of their comparative morphology, yet there are still some gaps needing further research. Knowledge on male specimens is scarce in general, there are few data on life histories and, particularly, peculiarities of the worms' biology and parasitism.

The present paper deals with the gross morphology of some species of both the genera *Philometra* and *Skrjabillanus* met with so far in Hungary. Details of anatomy and full particulars of life history will be published in the next communication.

A) Species of *Philometra*

Species assigned nowadays to the genus *Philometra* were originally described as members belonging to the genus *Filaria* Müller, 1787, (*F. ovata* Zeder, 1803, *F. sanguinea* Rud., 1819) until a new genus, *Philometra*, was created by Costa in 1845, to accommodate the species *reticulatum* Costa, 1845.

Later two new generic names were proposed to accommodate these nematodes of fishes, i. e., *Ichthyonema* by DIESING (1861) and *Sanguinifilaria* by YAMAGUTI (1941). There being no doubt that COSTA's name, *Philometra*, has priority over both, it was natural that BAYLIS and DAUBNEY (1926) created the new family *Philometridae* to doubtfully place it together with *Micropleura* and *Dracunculus* into the superfamily *Filaroidea*. Since that time research work of SOBOLJEV, SKRJABIN etc. (SRIGIN and SHIGINA, 1958) has shown that the family should be classed among the members of the suborder *Camallonata* Clitwood, 1936, superfamily *Camallanoidea* Travassos, 1920.

Recently RASHEED (1963) has revised the genus *Philometra* Costa, 1845, and, taking into account certain genera created by YAMAGUTI (*Philometroides*

and *Ichthyofilaria*), KHALIL (*Nilonema*), KUITUNEN-EKBAUM (*Philonema*) and TRAVASSOS (*Rumai*), proposed two more new genera (*Buckleyella* and *Theaitia*) and several subgenera (*Philometra*, *Ranjhinema* and *Alinema*), simplifying at the same time the system by synonymizing some species recognized as more or less identical.

RASHEED based his revision of *Philometra* principally on features found to be characteristic of females with particular reference to the fact that the males in the majority of species are unknown and, if known, show the generic characters of females.



Fig. 1. Head-end of a *Philometra ovata* female, 13 mm in length

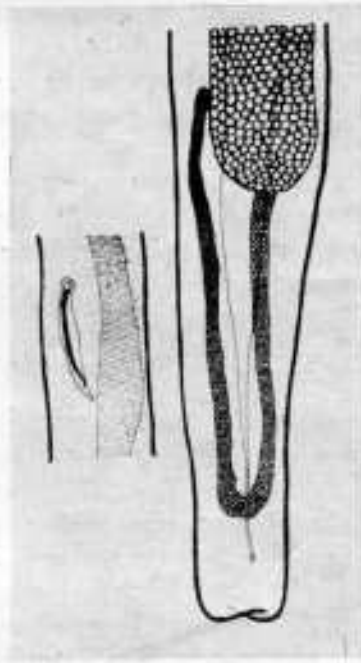


Fig. 2. Tail-end of a *Philometra ovata* female, 18 mm in length

In fishes of Hungary I have met so far 3 species of *Philometra*, viz., *Ph. ovata* (Zeder), *Ph. sanguinea* (Rud.) and *Ph. rischta* Skrj. The first species belongs, according to RASHEED, to the genus and subgenus *Philometra*. The

second species is assigned by RASHEED to *Philometroides* Yamaguti, 1935. The third is provisionally transferred to his new genus *Thwaitia*. As, however, my observations with reference to the third species are not quite in harmony with RASHEED's view, I prefer, for the present, to deal with all three species under the denomination *Philometra* s. l.

In Hungary RÁTZ (1902) was first to report on *Philometra ovata*, describing it as *Ichthyonema sanguineum* from the body cavity of the bream in Lake Balaton.

Philometra ovata (Zeder, 1803)

Host: Bream (*Abramis brama*), roach (*Rutilus rutilus*).

Locality: Lake Balaton, Hungary.

Habitat: Body cavity.

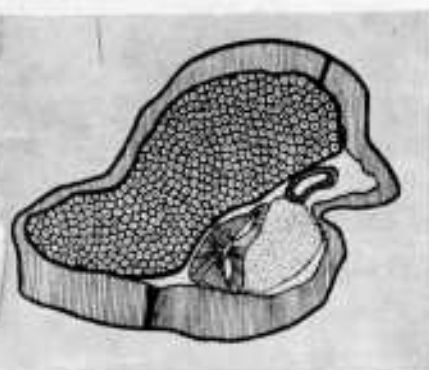


Fig. 3. Cross-section of a 13 mm long *Philometra ovata* female at the posterior third of the oesophagus



Fig. 4. Tail-end of a *Philometra ovata* male

Mature females are red, infrequently yellowish-red in colour, 100–120 μ m in length, 0.8 to 1.2 mm in diameter. Their cuticle is smooth. Their head is rounded, with four broadly based, hardly protruded cephalic papillae and 3 lips. The body is cylindrical, roughly uniform in diameter. On the posterior end here are two hardly discernible, flattened papilla-like processes. The anus opens subterminally before the posterior end. The body cavity is filled by the

uterus, packed with larvae, pushing the oesophagus and intestine flat against the cuticle. The length of larvae is 0.4 to 0.5 mm.

Juvenile females 3 to 20 mm in length are yellowish-red or red in colour. The cuticle is smooth, with very fine vertical striation. The body is cylindrical. The head is rounded, having four bluntly protruded papillae and three lips. The oesophagus is undivided and, apart from a bulbous dilatation at the mouth it is uniform in diameter throughout. One side of the oesophagus is indented to hold the oesophageal gland. The latter opens into the oesophagus below the bulbous dilatation and continues until it attains twice the width of the oesophagus at its median length, then narrows slightly, ending bluntly at the end of the oesophagus. The latter is separated from the broader intestine by three valves. The intestine contains brownish-red pigment and is uniform in diameter until it narrows abruptly before the tail and continues in a subter-

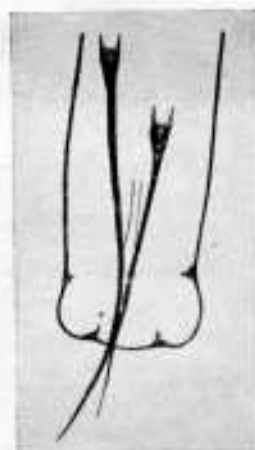


Fig. 5. Tail-end of a *Philometra ovata* male

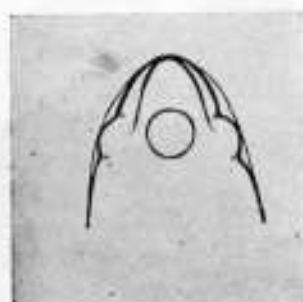


Fig. 6. Head-end of a *Philometra ovata* male

minal anus. The tail ends in two large papilla-like processes which are prominent on smaller specimens. In the posterior third of the body there is a round vulvar opening, continuing upwards in a 0.180 to 0.220 mm long vagina with chitinous lining. The uterus, packed with eggs, fills the greatest part of the body. In younger specimens, the anterior end of the uterus tapers gradually, ending caudally at the end of the oesophagus, whereas in elder ones it rounds abruptly, ending adjacent to the oesophagus. From the anterior end of the uterus starts the elongate cylindrical anterior ovary, which returns after having formed one or two loops at the height of the oesophagus and ends bluntly behind the anterior end of the uterus. The posterior ovary arises from the posterior end of the uterus and, similarly to the anterior ovary, after a few windings returns and

ends bluntly thereby. The anterior and posterior ovaries are both connected with the uterus in the same way.

The nerve ring is situated under the oesophageal bulb and distinct nerve bundles are running therefrom to the cuticle.

Males. Transparent worms, 1.7 to 2.3 mm (average 2.0 mm) in length, 0.045 to 0.053 mm (average 0.049 mm) in width. The cuticle is smooth with fine transversal striation. The head is rounded showing four retracted, circumvallated cephalic papillae. The diameter of the body is roughly uniform at the full length of the worm, narrowing slightly only towards the anterior end. The posterior end is blunt, with two slightly protruding lateral papilla-like projections. These are connected by a hardly-discernible, narrow lobe. In lateral view, the body is narrowing above the papilla-like projections. There are two spicules unequal in length, their movements being directed by the gubernaculum. The spicules consist of a short stout shaft (calomus), and an elongate, tapering blade (lamina). The longer spicule is 0.246 to 0.325 mm (average 0.284 mm), while the shorter 0.136 to 0.204 mm (average 0.165 mm) in length. The diameter of the shaft is 0.007 to 0.009 mm, of the blade 0.005 mm at the start, the median width being 0.0025 mm. The gubernaculum is an 0.053 to 0.074 mm (average 0.066 mm) long, bent chitinous plate, with a lancet-shaped cuneus (posterior end). In the distal portion there is a thorn-like protrusion. Immediately above it, the gubernaculum tends to bend in the dorsocranial direction.

The females were moving freely in the body cavity of breams and roaches captured in Lake Balaton. Males located on the peritoneum and in the serosa of the posterior air sac or, infrequently, in the body cavity of the hosts. In case the above host species were harbouring *Ligula intestinalis*, *Philometra ovata* could be recovered from all examined fishes, on a total more than 100; the intensity of infestation varied from 30 to 320 worms per fish.

Philometra rischta Skrjabin, 1917

Host: Small bleak (*Alburnus alburnus*), (*Aspius aspius*), Red roach (*Scardinius erythrophthalmus*), Flat bream (*Blicca björkna*), Bream (*Abramis brama*).

Locality: Lake Balaton, river Danube, river Tisza.

Habitat: Gill surface, head skin.

In the above waters, from September to June, small bleaks (*Alburnus alburnus*) elder than one year are frequent hosts of *Philometra rischta*, the females of which are found on the inner surface of the gills or under the skin of the head. Until the present examinations no data had been available on the occurrence of males. In the course of the present study, however, male worms were recovered from the serosa of the air bladder of *Alburnus alburnus* and

Aspius aspius; in one case a male was found on the tail fin of an *Alburnus alburnus*.

Mature females are yellowish-red or red in colour, 30 to 32 mm in length and 0.8 to 1.0 mm in diameter. Their body is slightly tapering towards both the anterior and posterior end. The cuticle is smooth. On the head there are four

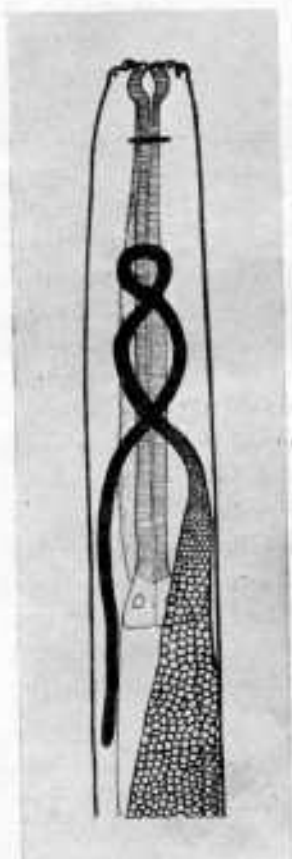


Fig. 7. Head-end of a *Philometra rischta* female, 11 mm in length

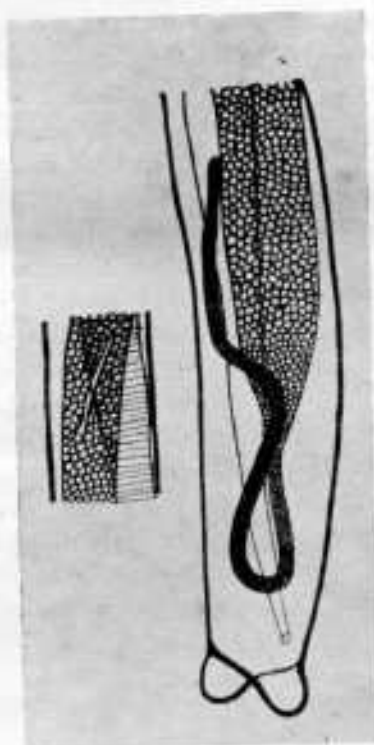


Fig. 8. a, Tail-end of a 11 mm long *Philometra rischta* female; b, Vaginal region of a 11 mm long *Philometra rischta* female



Fig. 9. Tail-end of a *Philometra rischta* male

conspicuous cephalic papillae and three lips. The tail ends in two well-visible laterally-directed papilla-like projections. The uterus, packed with larvae, occupies almost the entire body cavity, pressing sideways the flattened oesophagus and the intestine against the cuticle. The anus is in a subterminal position.

Juvenile females. The specimens 5 to 7 mm in length are yellowish-red or red in colour. Their cuticle is smooth. The body is nearly uniform in diameter throughout, narrowing slightly towards both ends. The posterior end terminates

in two papilla-like projections. On the head there are four distinct cephalic papillae and three lips. The oesophagus is cylindrical, forming a bulb at the mouth. Its caudal end fuses with the bluntly broadening intestine through valves. From the bulbous part down to the valves the oesophagus is indented to hold the oesophageal gland which is gradually thickening until reaching double width of the oesophagus at the middle of its length, then gradually narrows again, ending bluntly above the oesophageal valves. The intestine is uniformly thick, narrowing posteriorly, where it ends in a subterminal anus. The vulvar opening lies at the posterior third of the body; it is circular in shape, continuing anteriorly in a 0.019 to 0.021 mm long chitinous vagina, 0.004 mm in diameter. The uterus is a uniformly thick sac, filled up with eggs, tapering towards both ends, in younger specimens gradually, while in elder ones abruptly, and continues in tube-like ovaries in both directions. The anterior ovary originates from the uterus near to the oesophageal valves and, after forming several loops in level with the oesophagus, returns, ending at the anterior end of the uterus. The posterior ovary forms loops at the rectum and, returning, ends bluntly near the uterus. The nerve ring is behind the oesophageal bulb.

Males. The male worms recovered from the small bleak (*Alburnus alburnus*) are transparent, measuring 1.680 to 2.000 mm in length and 0.022 to 0.039 mm in diameter. The cuticle is smooth. The head is rounded with 4 circumvallate papillae. The head tapers into a slightly narrower neck. Caudally from the neck the diameter of the body is equal with that of the head. The tail ends bluntly, showing laterally papilla-like protrusions which are connected dorsally by a narrow lobe. The two spicules are nearly equal in length, measuring 0.045–0.057 and 0.045–0.053 mm, respectively. The spicule's diameter is 0.003 mm at its head. The gubernaculum is an 0.031–0.041 mm long structure, consisting of a bent chitinous plate, identical in shape with the gubernaculum of *Philometra ovata*.

Philometra sanguinea (Rud. 1819)

Host: Crucian carp (*Carassius carassius*).

Locality: Fish ponds in the Transdanubian area of Hungary.

Habitat: Fins (body cavity).

Philometra sanguinea is frequently carried by elder fishes with relatively low intensity.

Philometra sp.

Two females belonging to genus *Philometra* were found in the fins of *Abramis ballerus* in the river Danube. Apart from their habitat (fins) the parasites appear to be identical with *Philometra rischta* females.

B) Species of *Skrjabillanus*

Up to now a single species of this genus has been described, by SHIGIN and SHIGINA (1958) from the tench (*Tinca tinca*), under the name *Skrjabillanus tincae*. They found that these worms frequently occur under the renal serosa of tenches. SHIGIN and SHIGINA found males and females with equal frequency. Since no closely-related species were known, the authors classified *Skrjabillanus tincae* with the family *Skrjabillanidae* and superfamily *Dracunculioidea*.

In the course of the present study two hitherto not described roundworm species were encountered which may be tentatively classified with the genus *Skrjabillanus*. Both species were found in the body cavity of *Scardinius erythrophthalmus* (red roach) fishes. One of them parasitizes the intestinal serosa, in particular the mesentery connecting the intestine with the air bladder. Infrequently worms were seen moving freely in the body cavity. The other species occurred mostly in the serosa covering posterior sac of the air bladder, less often in the renal serosa in multiply coiled position. Males and females of both species occurred in roughly equal numbers. Morphological data of males and females, 15 each, are summarized below:

Skrjabillanus erythrophthalmi sp. n.

Host: Red roach (*Scardinius erythrophthalmus*).

Locality: Adony fish breeding, Lake Velence.

Habitat: Mesentery; intestinal serosa.

Mature females are transparent worms, measuring 11 to 13 mm in length and 0.1 to 0.3 mm in diameter (at the middle of body length). The body is slightly tapering towards both ends. The cuticle is smooth. On the head there are 4 protruded roundish papillae and two markedly refractive amphids. The mouth carries an 0.002 mm thick chitinous buccal capsule, 0.008 to 0.009 mm in outer diameter. The basal diameter of the cephalic papillae is 0.012 mm, their height is 0.008 mm. At the caudal end there are three elongate papilla-like protrusions, 0.008 mm in length. The caudal processes are extending in the terminal direction, one of them ventrally, the two others dorso-laterally. The end of the dorso-lateral papillae is divided into two parts by a groove. The anterior ends subterminally. The body is filled up by the uterus, packed anteriorly with larvae, while posteriorly with eggs. The larvae are 0.110 to 0.120 mm in length.

Juvenile females 0.3 to 0.9 mm in length allow a closer study of the inner structures. At this stage, papillae on both the anterior and posterior ends are relatively more protrusive. The oesophagus is undivided, somewhat wider than the buccal capsule. Dimensions: 0.016 to 0.018 mm in diameter, 0.30 to

0.36 mm in length. Posteriorly to the buccal capsule starts the bigger oesophageal gland which broadens gradually in distal direction, abruptly broadening above the valves of the oesophagus and continuing adjacent to the intestine down to a distance covering twice the length of the oesophagus. The other oeso-

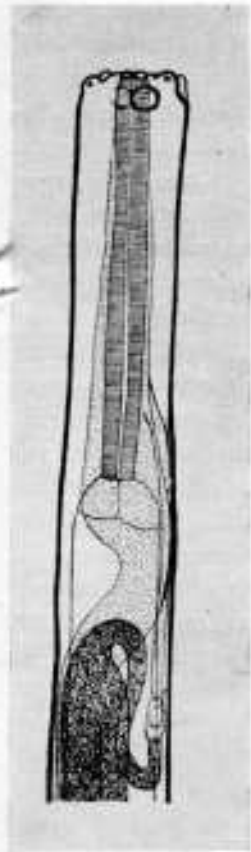


Fig. 10. Head-end of a *Skrzjabillanus erythropthalmi* female

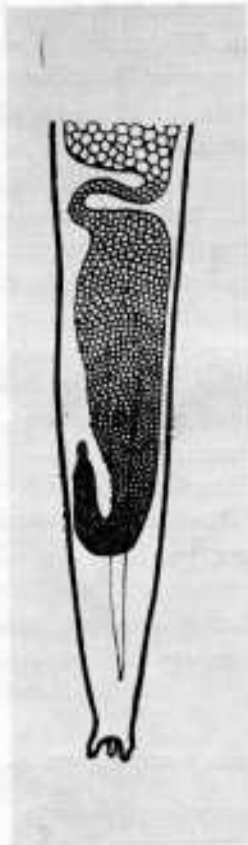


Fig. 11. Tail-end of a *Skrzjabillanus erythropthalmi* female

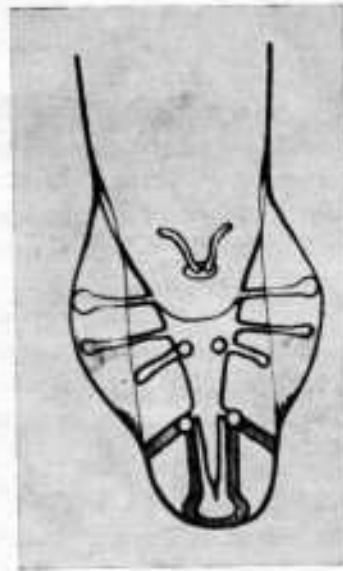


Fig. 12. Tail-end of a *Skrzjabillanus erythropthalmi* male

phageal gland is much narrower, extending from the middle of the oesophagus to the vulvar opening. The oesophagus ends bluntly in three giant valves, fusing with an abruptly broadening intestinal portion, tapering gradually and ending in the anus.

The vulva opens in the anterior part of the body, just caudally from the anterior end of the uterus. There is a very thin, short (0.022 mm) inconspicuous vagina continued into an abruptly broadening ovojector. At the origin, the ovojector extends caudally, then continues orally and near the valves it

broadens, comes back and continues into the uterus. The latter extends in uniform thickness caudally, then, rounding abruptly, it continues in a thin convoluted oviduct, which then broadens into the ovary. The tapering distal end of the ovary points backward on a hook-like fashion.

Males. Transparent worms, measuring 3.3 to 5 mm (on the average, 4 mm) in length. They are tapering towards both ends. Their diameter at the middle length is 0.049 to 0.057 mm. The cuticle is smooth. On the head-end there are four protruding, hemispheric papillae. The three lips are surrounded by a chitinous buccal capsule, 0.002 mm thick and 0.007 to 0.009 mm in diameter. The oesophagus is cylindrical in shape and 0.29 to 0.31 mm in length. Similarly to females, the oesophageal gland extends adjacent to the oesophagus down to the intestine in the males, too. On the caudal end there are well-developed bursa-like alae consisting of an elongate dorsal and two lateral lobes. The lateral lobes bend ventrally to form a sac. The dorsal part of the caudal end is sharply pointed, extending almost to the terminal end of the dorsal lobe. Parallel to the tapering part of the caudal end, two rib-like structures are extending in dorsal direction, to the distal end of the lobe. The area enclosed by the structures shows a different refraction. Two inconspicuous rib-like structures extend in latero-terminal direction from the bending of the pointed tail end to the joining of the lateral lobes. On the caudal end there are 5 pairs of papillae, 4 pairs of which are pedunculated. The first and last (fourth) pairs of the pedunculated papillae are of mushroom-like shape. The sessile papillae arrange at the bottom of the third pair of pedunculated ones. There are two short equal spicules of the setaceous type, measuring 0.008 to 0.009 mm in length. Both spicules are ending in a transverse, subterminally located cloaca of oval shape.

Skrjabillanus scardinii sp. n.

Host: Red roach (*Scardinius erythrophthalmus*).

Locality: Fish breeding in Adony; river Tisza.

Habitat: Serosa of the posterior sac of the air bladder, renal serosa.

Females. The females are very thin, transparent, thread-like worms, measuring 8 to 13 mm (average, 11 mm) in length. The diameter of their body is uniform throughout, varying from 0.049 to 0.070 mm. The cuticle is smooth. On the anterior end the cuticle is smooth, carrying four retracted papillae and two large amphids. The tail-end is gradually tapering, ending in two dorsolateral and one ventral papilla-like processes, 0.003 to 0.004 mm in length. There is a well-developed buccal capsule, 0.012 mm wide, 0.008 mm deep. At the bottom there are five orally extending chitinous teeth. The buccal capsule continues in a uniformly thick oesophagus opening into the bluntly broadening intestine by three valves. The diameter of

the oesophagus is 0.012 to 0.014 mm. The intestine is uniformly thick. The greater oesophageal gland starts under the buccal capsule, broadens gradually extending distally adjacent to the oesophagus. At the oesophageal valves it broadens abruptly and extends adjacent to the intestine until covering it

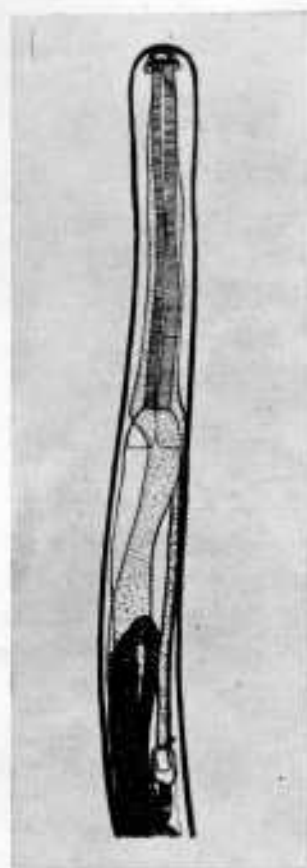


Fig. 13. Head-end of a *Skrjabillanus scardinii* female

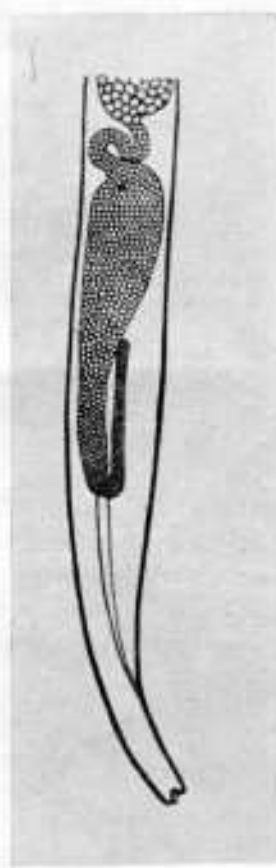


Fig. 14. Tail-end of a *Skrjabillanus scardinii* female

along a distance twice the length of the oesophagus. The other oesophageal gland is much narrower, extending from the middle length of the oesophagus to the vulvar opening. The rectum ends in a gradually narrowing subterminally situated anus. The vulvar opening is at the anterior part of the body, somewhat caudally from the anterior part of the uterus. The vagina is a short, slightly chitinous, thin tube continuing in the abruptly broadening vestibule of the ovojector. The latter, after short extension in caudal direction, turns orally reaching the anterior end of the uterus, connecting with it after a winding and

gradual broadening. The posterior end of the uterus is rounded and continues in a narrow, convoluted oviduct and an unpaired ovary, whose distal tapering part is bent in a hook-like fashion in level with the rectum. Depending on their stage of development, larvae measure 0.090 to 0.140 mm in length.

Males. Male worms, too, are thin, transparent and thread-like, measuring 3.2 to 4.4 mm (average 3.8 mm) in length. The body is cylindrical and uniform

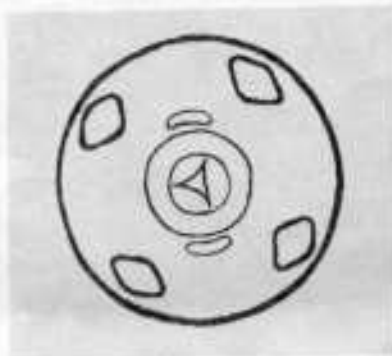


Fig. 15. Head-end of *Skrjabillanus scardinae* from the frontal view

in diameter at full length. The cuticle is smooth. The head is connected with the slightly narrowed neck by an inconspicuous swelling. The anterior end is rounded carrying four retracted papillae and two amphids. The well-developed chitinous buccal capsule is 0.006 to 0.007 mm in diameter and 0.004 mm in height. Its structure is identical with that of the buccal capsule of females.

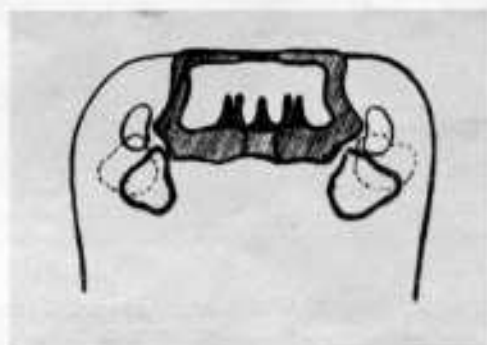


Fig. 16. Head-end of *Skrjabillanus scardinae* from the lateral view

The oesophagus is unparted, cylindrical, 0.025 to 0.026 mm in length and 0.007 to 0.008 mm in diameter. Similarly to females the oesophageal gland extends also in males adjacent to the oesophagus. The intestine is of uniform diameter, extending caudally. Its caudal end bears bursa-like alae. One of these extends

dorsally, the other two laterally. The lateral wings bend ventrally to form a sac. The caudal end of the body is bluntly rounded on the ventral side, whereas on the dorsal side it shows a ridge, reaching almost to the terminal end of the dorsal lobe. In level with the last pair of papillae two rib-like structures extend to the caudal end of the lobe. The area enclosed by these structures is markedly refractive, thus differing sharply from the other parts of the dorsal lobe. On the caudal end of the worm there are 4 pairs of pedunculated and one pair of

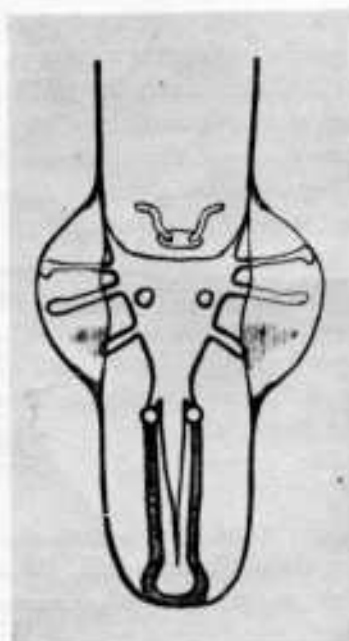


Fig. 17. Tail-end of a *Skrjabillanus scardinii* male

sessile papillae. The last pair of pedunculated papillae is of a distinct mushroom shape. The sessile papillae are situated between the 2nd and 3rd pair of the pedunculated ones. There are two equally short spicules of the setaceous type, measuring 0.006 to 0.007 mm in length. They open into a transverse subterminal cloaca of oval shape.

Comparative morphology. *Skrjabillanus tincae* and the two species of *Skrjabillanus* described in this paper are closely resemblant morphologically. All three are thin, transparent worms parasitizing the serosa of the body cavities of fishes. In all the three species, females measure about three times the length of males. Both males and females have a chitinous buccal capsule. The males have well-developed alae and papillae on the tail-end, and a pair of short setaceous spicules. The tail-end of females ends in a papilla-like process.

Skrjabillanus erythrophthalmi occurs mostly on the mesenteric, less frequently on the intestinal serosa, whereas *Skrjabillanus scardinii* in the wall of the second air bladder or, occasionally, in the renal serosa. *Skrjabillanus tincae* was found under the renal serosa. The latter species parasitizes the tench (*Tinca tinca*), while the former two live in the red roach (*Scardinius erythrophthalmus*). The body of *Skrjabillanus erythrophthalmi* is much wider than that of the two other species, differing from them markedly in the length/width ratio. Also, its buccal capsule is disc-like and considerably thinner. On the head-end it carries 4 well-developed, protruded papillae, whereas the cephalic papillae of the other two species are rather retracted.

Skrjabillanus scardinii differs from *Skrjabillanus tincae* in its buccal structure, lesser body dimension and number of papillae carried by the males on the tail-end. As mentioned above, *Skrjabillanus tincae* males carry 3 pairs of sessile and 3 pairs of pedunculated papillae on the tail-end, whereas *Skrjabillanus scardinii* males have 4 pairs of pedunculated and 1 pair of sessile papillae. *Skrjabillanus tincae* females show, according to SHIGIN and SHIGINA, two papillae like projections on the tail-end, whereas *Skrjabillanus scardinii* females show three pairs. The validity of the species is supported also by the fact that in a pond where infestation with *Skrjabillanus scardinii* involved 100 per cent of the *Scardinius erythrophthalmus* population, tenches were free of that parasite. As far as *Skrjabillanus tincae* is concerned, SHIGIN and SHIGINA describe only one spicule-like process, while we found two spicules in both species described by us.

SHIGIN and SHIGINA described the characteristics of the species *Skrjabillanus tincae*, considering these features valid for the genus and family as well. The fact that the features given by them answer only the description of one particular species made necessary a revision and redescription of family and generic characteristics as follows.

Family: *Skrjabillanidae* Shigin et Shigina, 1958

Family characters. *Dracunculoidea*. The body is thread-like. The head-end is rounded or carries protruding papillae. The tail-end is tapering. There is a chitinous buccal capsule. The oesophagus is undivided. There is a well-developed oesophageal gland. Subterminal anus. Males are shorter than females. Males carry bursa-like alae, pedunculated and sessile papillae on the tail-end.

Genus: *Skrjabillanus* Shigin et Shigina, 1958

Genus characters. *Skrjabillanidae*. The body is thread-like. The head-end is smooth or carries protruding papillae. The tail-end is tapering. There is a well-developed, chitinous buccal capsule. The oesophagus is undivided. The oesophageal gland extends beyond the oesophagus, continuing to the intestine. The intestine is a straight tube ending in a subterminal anus. Females are 2 to 3 times longer than males. The vulva opens in the anterior part of the

body. *Skrjabillanus* species are viviparous. Males are carrying well-developed bursa-like wings and pedunculated and sessile papillae on the tail end. *Skrjabillanus* species are fish parasites.

It appears to be highly possible that besides the hitherto described 3 species also *Philometra intestinalis* Dogiel et Bychowsky, 1934 and *Philometra leucisci* Agapowa, 1963, classified with the genus *Philometra*, belong to the genus *Skrjabillanus*. Although the description of the latter two species is scanty, being derived only from the characters of a few female worms, their striking morphological similarity to *Skrjabillanus erythrophthalmi* permits the assumption that a closer study of them, in particular the discovery of their males will lead to their re-grouping with the genus *Skrjabillanus*.

SUMMARY

Occurrence of known and unknown nematodes from genera *Philometra* and *Skrjabillanus* parasitizing freshwater fishes are reported from Hungary.

Detailed morphological descriptions are presented of the species *Philometra ovata* (Zeder, 1803) and *Philometra rischta* Skrjabin, 1917, including also data on the morphology of the hitherto unknown or hardly-known male worms.

Two new species of nematodes apparently belonging to the genus *Skrjabillanus*, are described and denominated tentatively *Skrjabillanus erythrophthalmi* and *Skrjabillanus scardinii*. The new species were found in the wall of the air bladder, resp. mesentery of the red roach (*Scardinius erythrophthalmus*).

Characteristics for the differentiation of the genus *Skrjabillanus* and family *Skrjabillanidae* are proposed.

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