

## MARINE FISH NEMATODES OF PAKISTAN VI

*Dujardinascaris Sciaenae* sp. n. (Heterocheillidae, Ralliet et-Henry, 1915)

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**Abstract.** A new species *Dujardinascaris sciaenae* is described from the fish *Pseudosciaena diacanthus* (Lacep) of Karachi coast. *D. sciaenae* is characterised by possessing long and stout body, with narrow anterior region, spicules subequal to 5.2–5.3 mm and 5.4–5.5 mm in length, no gubernaculum, 23 pairs of caudal papillae of which 19 pairs are preanal including 12 pairs pedunculate and 7 sessile, 1 pair adanal and 3 pairs post anal, vulva at a distance of 8.9–10.0 mm from the anterior end, eggs thick-shelled, rounded and 0.024–0.040 mm in diameter. This is the third species of the genus from Pakistani marine fishes.

Previously two species *D. magna*, Khan and Begum<sup>3</sup>, and *D. ritai*, Zaidi and Khan<sup>4</sup>, of the genus *Dujardinascaris*, Baylis, have been described from *Sciaena* sp. of Karachi coast and from *Rita rita* in Lahore, Pakistan. The description of the former was based on male specimens only while the latter was based on immature females only. The other two species of the genus are known from Yacatan, (Pearse,<sup>2</sup>) Khan and Sudan (Baylis<sup>1</sup>). The present new species is from a related host and same locality as far *D. magna*, Khan and Begum,<sup>3</sup> but is very distinct from this species and regarded as an undescribed species of the genus. The new species name *D. sciaenae* refers to the fish host.

**Materials and Methods**

Viscera of 20 fishes *Pseudosciaena diacanthus* were examined during the year 1973-1974 for helminth parasites which were collected from the West Wharf, Karachi. With other parasites from the intestine of one fish 15 nematodes were recovered. These were examined alive and then fixed in 70% alcohol and cleared in glycerine for detailed examination. Diagrams were prepared with a camera lucida and measurement are given in mm. Holotype, allotype and paratypes are deposited in the School of Parasitology, Department of Zoology, University of Karachi.

**Description**

Species: *Dujardinascaris sciaenae* sp. n. (Heterocheillidae, Railliet et Henry, 1915). (Figs. 1 : 7).

Host: *Sciaena diacanthus* (Lacep), Sciaenidae; Locality: Karachi-coast; Location, Intestine; 4 male, 11 female from a single host; 20 host examined; Holotype male SPUK-265, Allotype female: SPUK-266, Paratypes: SPUK-267-279.

**Male.** Elongated and stout worms, dark brown in colour. The total length of the worm is 15.81–22.74 and their maximum breadth is 0.30–0.51. The cuticle is expanded and striated throughout the body length. At the anterior region these

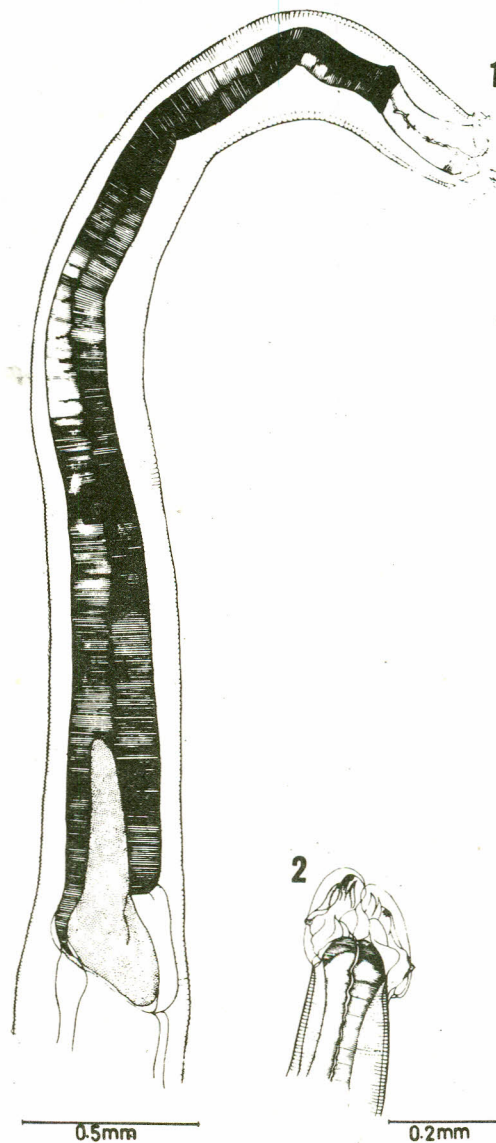


Fig. 1. Anterior region of holotype, male.

Fig. 2. Cephalic-cervical region of the same.

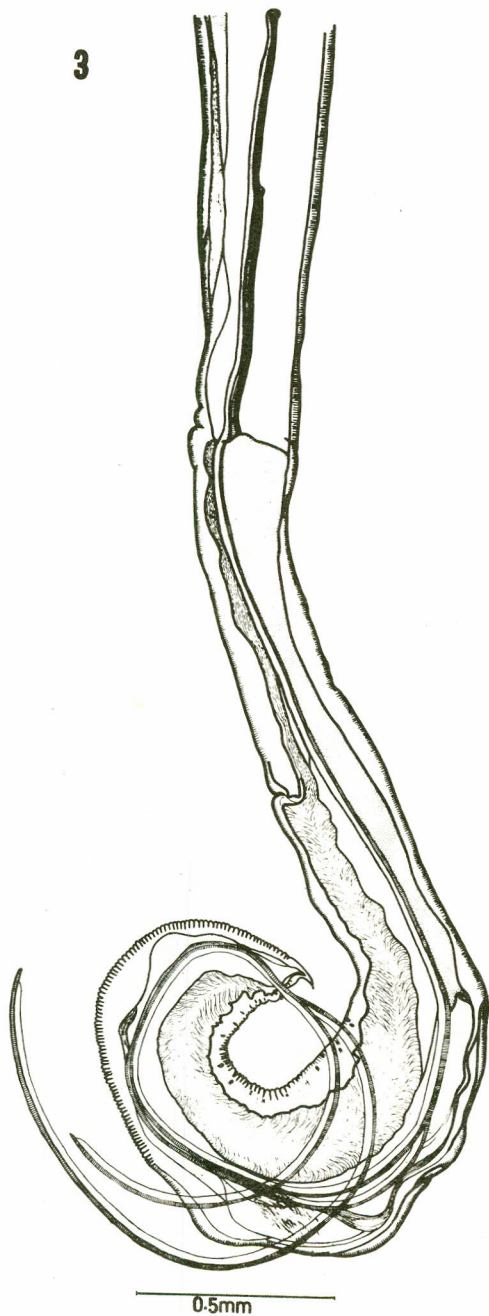


Fig. 3. Posterior region showing spicule and associated structures.

striations become more obvious and form annulations. Lips three, large, without dentigerous ridges measuring 0.088–0.128 in length. The cuticle of the internal surfaces of lips is produced into tooth like structure. Interlabia present, there are well marked grooves running from interlabia to the base of the lips. Cephalic alae 0.012 × 0.028 in size. The nerve ring and excretory pore lie at a distance of 0.160–0.266 and 0.525 from the anterior extremity respectively. The esophagus is a muscular tube which is 3.005–3.300 in length and 0.108–0.133 in its maximum breadth. The esophageal bulb is 0.060–0.120 in length and 0.08 in dia.

It is followed by the intestine which gives rise anteriorly to a small intestinal cecum measuring 0.288–0.348 in length and 0.048–0.072 in breadth. There are two large subequal spicules measuring 5.2–5.3 and 5.4–5.5 in length and approximately 0.024 mm broad. Gubernaculum is absent. There are 23 pairs of caudal papillae, including 12 pairs pedunculate and 11 pairs sessile; 19 pairs preanal, 1 pair is adanal and 3 pairs are post anal in position. Caudal alae is present only in one specimen measuring 0.032–0.038 in size. The tail is 0.120–0.166 in length, coiled ventrally, terminating into a pointed tip.

*Female.* Females larger than males 23.0–27.2 mm in length, 0.144–0.166 mm in its maximum breadth. Cuticle is thick and striated throughout the length of the body. Lips and interlabia are similar to that of male. The nerve ring lies at a distance of 0.252–0.382 from the anterior extremity. Esophagus 1.909–3.648 in length, 0.144–0.166 mm in breadth. The esophagus is followed by a small bulb like structure measuring 0.180–0.216 in length and 0.155–0.156 in dia. Intestinal cecum varies from 0.349–0.540 in length and 0.0996–0.120 in its maxi-

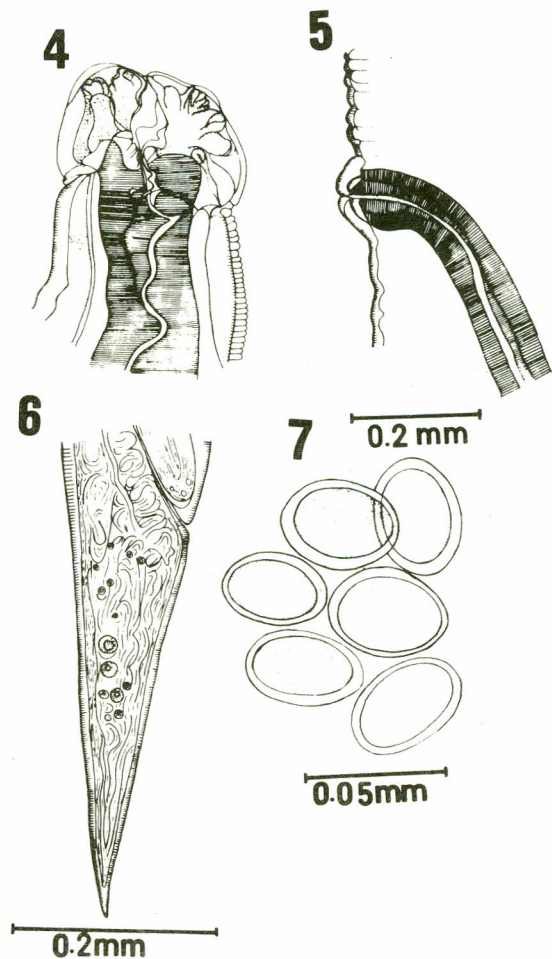


Fig. 4. Cephalic and cervical region of allotype, female. Fig. 5. Region of vulva. Fig. 6. Female, tail region. Fig. 7. Eggs.



TABLE 1. SIZE VARIATIONS IN *Dujardinascarsi* SP. FROM PAKISTAN (IN MM).

Host	<i>Sciaena</i> sp.	<i>Rita</i> <i>rita</i>	<i>Pseudasciaena diacanthus</i>
Locality	Karachi coast.	Lahore	Karachi coast
species	<i>D. magna</i> Khan and Begum <sup>3</sup> , (Male)	<i>D. ritai</i> Zaidi and Khan <sup>4</sup> (Immature females)      Females	<i>D. sciaenae</i> sp. n. Male
Body length	66.463 — 71.604	23.200 — 33.350	23.0 — 27.2
Body width	1.727 — 2.031	0.720 — 0.899	10.144 — 0.166
Length of lips	0.24 — —	0.064 — 0.069	0.088 — 0.128
Width of lips	—	0.038 — 0.043	0.055 — 0.072
Length of cephalic alae	—	—	0.0128
Width of cephalic alae	—	—	0.012
Length of esophagus	4.107 — 4.175	2.085 — 2.600	1.909 — 3.648
Maximum width of esophagus	0.408 — 0.448	0.089 — 0.137	0.144 — 0.166
Nerve ring from anterior	1.088 — 1.156	0.315 — 0.344	0.252 — 0.382
Length of ventriculus	0.476 — 0.530	—	—
Diameter of ventriculus	—	—	—
Length of intestinal cecum	0.489 — 0.748	1.625 — 1.773	0.349 — 0.540
Width of intestinal cecum	0.340 — 0.353	0.197 — 0.217	0.096 — 0.120
Excretory pore from ant	—	—	—
Spicules	equal & alate.	—	—
(1)	1.700	—	—
(2)	1.760	—	—
Width of spicules	0.081	—	—
Number of caudal papillae	30 pairs of caudal papillae. 20 pairs are preanal 10 pairs are post anal.	—	—
Tail length	0.503 — 0.598	0.197 — 0.246	—

mum dia. Vulva situated in the anterior half of body, 8.9–10.0 from the anterior end. Tail pointed, 0.330–0.349 in length. Eggs thick-shelled, rounded, 0.024–0.040 in dia.

#### Discussion

Only four species of this genus have previously been described from marine and fresh water fish. These are *Dujardinascaris cenotae*<sup>1,2</sup> (Pearse,<sup>2</sup>) Baylis,<sup>1</sup> from *Rhamdia guatemalensis* in Yacatan, *D. melapteruri* Baylis,<sup>1</sup> from *Melapterus electricus* in Sudan and *D. magna* Khan and Begum,<sup>3</sup> from *Sciaena* sp. and *D. ritai* from *Rita rita* Zaidi and Khan<sup>4</sup>, from the coast of Karachi and Lahore. The description of *D. cenotae* is based on three poorly described female specimens while the description of *D. malapteruri* and *D. magna* is based only on male specimens and *D. ritai* is described by immature females only, although it is not desirable to create new species on immature females only. Comparison with this species for the body length and width and the position of vulva shows that females of present species are different from the immature females of *D. ritai*. *D. ritai* is from a fresh water fish while the species under consideration is from a marine fish host.

The present species is regarded a new species *D. sciaenae*. It differs from *D. magna* from the related fish host in having a shorter body length (3.5 times shorter than *D. magna*), longer spicules (5 times longer than *D. magna*), shorter esophagus which is long relative to size of the body as compared to *D. magna* and less number of caudal papillae (23 in present species and 30 in *D. magna*). Description of *D. ritai* is based on immature females. The new species is also different from *D. malapteruri* in the body size and size of the spicules and from females of *D. cenotae*. The morphological variations between *D. magna* Khan and Begum,<sup>3</sup> and *D. sciaenae* sp. n. from Karachi coast and

*D. ritai* from Lahore is given in the Table I. The present species shows variations in the diagnostic characters for the genus is given below. Features given for the genus, by Yamaguti,<sup>5</sup> is therefore, amended.

Redescription of the genus *Dujardinascaris* Baylis.<sup>1</sup> 1947 Lips without dentigerous ridges, but with the cuticle of their internal surfaces produced into large tooth-like structure, apparently capable of being interlocked; these structures are carried by three main cuticular lobes on the anterior border of each lip. Interlabia present, with well-marked grooves running from interlabia to bases of lips. Esophagus with a small spherical posterior bulb, but no posterior ventriculus. Intestinal cecum present. *Male*. Caudal alae present in cloacal region, caudal papillae few to many (23 pairs present in the present species and 30 pairs in *D. magna* Khan and Begum<sup>3</sup>, spicules equal or subequal, slender; gubernaculum present or absent (gubernaculum absent in the present species and also in *D. magna* Khan and Begum.<sup>3</sup>) *Female*. Vulva in anterior half of body opening into a muscular almost sucker like atrium. Vagina long, slender. Oviparous; eggs globular or subglobular, with very thin or thick shells, ova unsegmented when deposited. Parasites of reptiles and fishes.

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