



Redescription and a new host record of *Cucullanus cirratus* Müller, 1777 from the Red Sea fish *Mulloidichthys flavolineatus* (Perciformes: Mullidae) in Egypt

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ABSTRACT

Based on light and scanning electron microscopy, a *Cucullanus* species (Nematoda: Cucullanidae Railliet and Henry, 1915) was isolated from the intestine of the commercially important marine fish *Mulloidichthys flavolineatus* (Perciformes: Mullidae) from Hurghada, Egypt, as a new host and locality record. *Cucullanus cirratus* Müller, 1777 is primarily characterized by the dorsoventral oral opening, surrounded by narrow membranous alae (collarete) supported by a row of numerous minute teeth, four submedian cephalic papillae, a pair of small lateral amphids, and a funnel-shaped pseudobuccal capsule. The excretory pore is located at the level of the posterior half of the esophagus between the nerve ring and the intestine. The intestine is simple and without cecum. Males show unequal caudal spicules, with the left spicule measuring 1.20–1.41 mm and the right spicule measuring 0.644–0.736 mm. There are 10 pairs of caudal papillae, including five prelocal and five postlocal pairs as well as a pair of small phasmids. The tail is simple and conical in both sexes.

INTRODUCTION

Cucullanidae is a vast family of parasitic nematodes, with numerous species being described from almost every part of the world **Rasheed (1968)**. Majority of the cucullanids are representatives of the genera *Cucullanus* Müller, 1777 and *Dichelyne* Jägerskiöld, 1902. The genus *Cucullanellus* Tornquist, 1931 is primarily characterized based on a ventral intestinal cecum and a pre-anal sucker lacking the prominent papilliform projection as described by **Yamaguti (1961)**. The genus *Dichelyne* includes the following two subgenera: *Dichelyne* Jägerskiöld, 1902 (prelocal sucker absent; 11 pairs of caudal papillae) and *Neocucullanellus* Yamaguti, 1914 (more than 11 pairs of caudal papillae) **Petter (1974)**. *Cucullanus cirratus* was recorded from the North Atlantic Ocean and the adjacent Seas (**Berland, 1961; Valovaya, 1979; Hemmingsen et al., 1991; Koie, 2000**) and from west coast of Algeria from the Mediterranean Sea (**Hassani and Kerfouf 2015**); however, no previous study has described its occurrence in Egypt.

The genus *Cucullanus* Müller, 1777 includes over 100 nominal species that live as parasites in marine and freshwater fish and rarely in aquatic turtles (Petter, 1974; Hasegawa *et al.*, 1991; Moravec *et al.*, 2005; Timi and Lanfranchi, 2006; Xu *et al.*, 2014; Li *et al.*, 2016). Dzikowski *et al.* (2003) reported the presence of *Cucullanus sigani* Yamaguti, 1959 in *Siganus rivulatus* (Siganidae) in the Gulf of Aqaba, Red Sea. Heckmann *et al.* (2009) reported a new species *Cucullanus gardneri* from the intestine of some Red Sea fish such as *Siganus rivulatus*, *Siganus luridus*, *Mulloides vanicolensis*, and *Parupeneus cyclostomus*. Furthermore, Al-Zubaidy *et al.* (2012) recovered *Cucullanus bourdini* Petter and Le Bel, 1992 from some marine fish in the off coasts of Yemen such as *Lutjanus gibbus*, *Lutjanus fulviflamma*, and *Pristipomoides filamentosus*. Yagoub (2015) investigated helminth parasite-infected *Siganus rivulatus* along the Red Sea Coast, Sudan, and reported that *Cucullanus sigani* Yamaguti, 1959 was the most common Cucullanid nematode in the Red Sea region. *Cucullanus heterochrous* has been recorded in flatfish, primarily the flounder *Platichthys flesus* (Gibson, 1972; Koie, 1993; Moravec, 1994). Adult *Cucullanus heterochrous* has also been described by some authors (Tornquist, 1931; Berland, 1961 & 1970; MacKenzie and Gibson, 1970; Gibson, 1972; Fagerholm, 1982). In addition, Thanapon *et al.* (2011) described the occurrence of *Cucullanus rastrelligeri* n. sp. in the short mackerel *Rastrelliger brachysoma* (Bleeker) (Scombridae) and of *Cucullanus thaiensis* n. sp. in the brown stripe red snapper *Lutjanus vitta* (Quoy & Gaimard) (Lutjanidae) from the intestine of marine perciforms in the coastal region of the Gulf of Thailand.

MATERIALS AND METHODS

Sampling:

In the present investigation, a total of 179 specimens of 39 different species of Red Sea fish were collected during from February 2016 to January 2017 from Hurghada, Egypt. The fish were transported as alive as possible to the laboratory of Parasitology, Zoology Department, Faculty of Science, South Valley University, in Qena Governorate, Egypt. The fish were identified according to previously described criteria (Randall, 1983; Lieske and Myers, 2004; Lieske *et al.*, 2004) and further confirmed through a fish-based website (<http://www.fishbase.org>). The gastrointestinal tract was untangled with fingers (Justine *et al.*, 2012), and the entire digestive system and other viscera were opened longitudinally. Different fish organs were investigated via macroscopic and microscopic examinations to detect the presence of any visible parasites. The collected nematodes were cleaned by washing several times with an isotonic saline solution. The relaxed nematodes were preserved in bottles containing a mixture of 70% alcohol and 5% glycerin.

Light microscopy

For microscopic examination, the nematodes were mounted on slides in a few drops of lactophenol and covered with a cover slip. The nematodes were identified according to the keys for the identification of nematode parasites of vertebrates (Yorke *et al.*, 1926; Yamaguti, 1963; Anderson *et al.*, 2009).

Scanning electron microscopy (SEM)

For SEM, the specimens were fixed for 6 h at 4°C in 3% buffered glutaraldehyde, washed several times with 0.1 M sodium cacodylate buffer, dehydrated in an ascending graded series of ethanol, and finally transferred into pure acetone. The samples were processed in a critical point drier “Bomer – 900” with Freon 13. Next, the samples were sputter-coated with gold using Technics Hummer V (Lee, 1993) and examined using a JEOL JSM-5400LV SEM operated at 15 kV in an electron microscopy unit at Assiut University.

RESULTS

Of the examined fish specimens, only 2 of the 24 specimens (8.4%) of *Mulloidichthys flavolineatus* (Perciformes: Mullidae) were infected with *Cucullanus cirratus* Müller, 1777.

Morphology of *Cucullanus cirratus* Müller, 1777 (Figs. 1–3)

Live specimens were medium-sized and yellowish. The body is the widest just behind the esophagus, gradually tapering toward the nerve ring, anterior to which the diameter increases again, giving the cephalic extremity a slightly swollen, rounded, and slightly dorsally bent appearance. The cuticle is finely striated transversally throughout, except in lateral fields where it is slightly striated; the striae anastomose at irregular intervals. The oral opening is dorsoventrally elongated, slit-like, and surrounded by narrow membranous alae (collarete) supported by a row of numerous minute teeth. Four submedian cephalic papillae and a pair of small amphids are present. The esophagus is muscular and consists of two distinct portions: anterior, with a sclerotized lining expanded anteriorly to form a funnel-shaped pseudobuccal capsule (esophastome), narrowing immediately below the nerve ring, and posterior, with a claviform aspect and a strong muscular structure opening into the intestine through valves. The excretory pore is located at the level of the posterior half of the esophagus between the nerve ring and the intestine. The intestine is simple without cecum. In both sexes, the tail is simple and conical that tapers evenly to a point.

Male:

Body length is 11.81–12.27 mm, and the maximum width is 0.377–0.462 mm (Fig. 1A). The entire esophagus measured 1.22–1.36 mm in length and 142–150 µm in width; the esophastome measured 140–150 µm in length and 127–130 µm in width. The nerve ring measured 0.411–0.434 mm from the anterior extremity (Figs. 1B, C and 3A, B). The excretory pore located 1.19–1.30 mm from the anterior extremity. Spicules are unequal, slender, blunt, and ventrally curved; the left spicule measured 1.20–1.41 mm and the right spicule measured 0.644–0.736 mm in length. A pre-cloacal sucker without a cuticular rim is present. There are no caudal alae. There are 10 pairs of caudal papillae, including five preclonal and five postclonal pairs. The preclonal papillae are arranged as follows: the first pair is anterior to the preclonal sucker, the second pair is at the posterior border of the preclonal sucker, the third pair is present midway between the second pair and the cloacal opening, and the last two pairs of preclonal papillae are located near the cloaca on either side in a longitudinal ventrolateral row. The postclonal papillae are arranged as follows: the first pair is ventrolateral and close to the cloacal opening, the second pair is located lateral to the first pair, and the remaining three pairs are located midway between

the cloaca and the tail tip; two pairs are ventrolateral, and other is dorsolateral. The last pair of ventrolateral papillae is located near the tail tip, and a pair of small phasmids is present anterior to these three pairs of papillae. The gubernaculum is Y-shaped and measured 0.256–0.270 mm in length. The tail is ventrally curved and conical, ending in a pointed tip and measuring 0.201–0.206 mm in length (Figs. 1D and 3C).

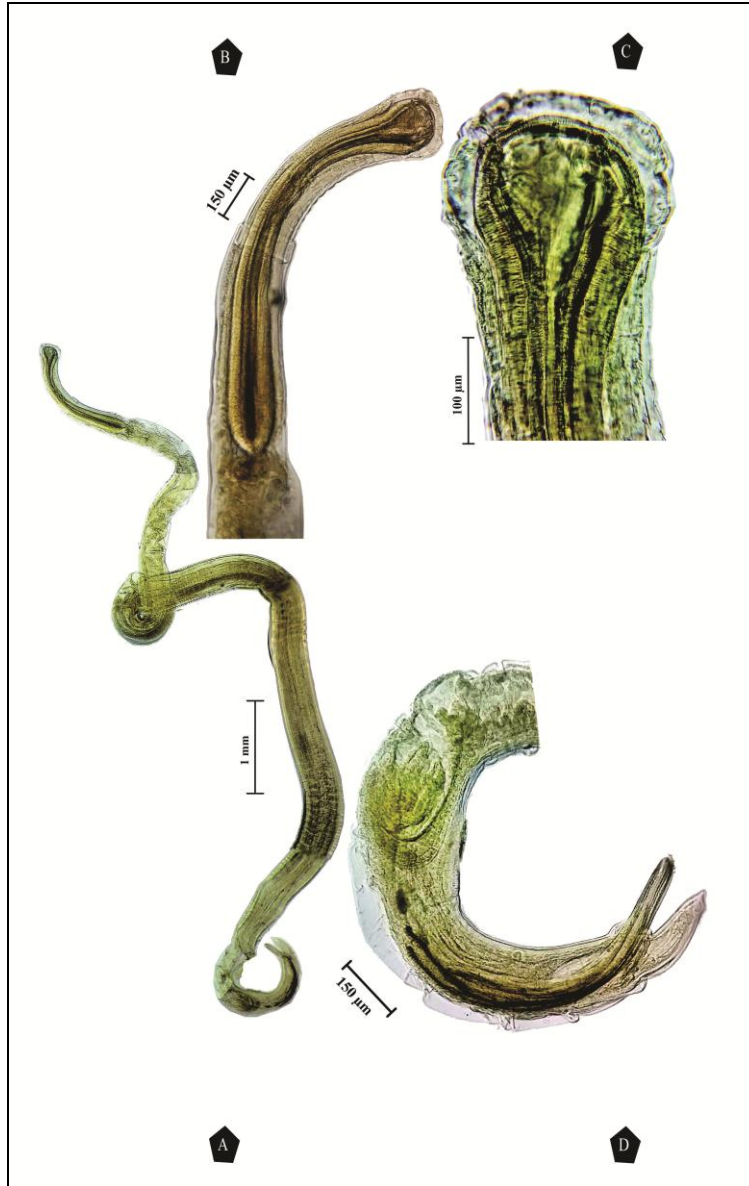


Fig. 1. Light micrographs of an adult *Cucullanus cirratus* male infecting *Mulloidichthys flavolineatus*: **A.** Whole nematode. **B.** Lateral view of the anterior extremity. **C.** Ventral view of the enlarged cephalic end. **D.** Lateral view of the posterior extremity.

Female:

The body is longer than the male, measuring 23.0–25.0 mm in length and 0.418–0.423 mm in the maximum width (Fig. 2A). The entire esophagus measured 1.480–1.500 mm in length and 0.185–0.193 mm in width. The esophastome measured 0.136–0.142 mm in length and 0.108–0.110 mm in width. The nerve ring measured 0.533–0.577 mm from the anterior extremity. The excretory pore measured 1.261–1.311 mm from the anterior extremity as in table 1. The vulva is located posterior to the middle of the body, representing 60.0%–60.8% of the body length from the anterior extremity (Figs. 2B, C and 3A, B). The anterior ovary and the oviduct almost reach the esophagus, whereas the posterior ovary reaches the anus. The vagina is directed anteriorly from the vulva; uteri are opposed and contain immature eggs (Fig. 2F). The tail is long and conical, tapering at the tip to a sharp point and measuring 0.462–0.465 mm in length. A pair of small lateral phasmid is situated midway between the anus and the tip of the tail (Figs. 2D, E and 3D).

Ultrastructure: (Figs. 4 and 5)

The head is rounded, with a dorsoventrally elongated, slit-like, oral opening surrounded by narrow membranous alae (collarete), with short triangular teeth on the inner face ($n = \sim 60$ on each side) (Fig. 4D). Four submedian cephalic papillae and a pair of small lateral amphids are observed external to the collarete. In addition, a smooth, tubular peribuccal rim present internal to the collarete; dorsally and ventrally, the peribuccal rim is narrowed. The peribuccal rim is separated from the more posterior structures by a peribuccal groove. Posterior to the peribuccal rim on each side, there is a large, bilobed, round peribuccal tooth. An inner circle of three pairs of small papillae is present on the peribuccal rim. A smooth, crescent-shaped fold, parallel to the peribuccal rim (Fig. 4B), is present partly overhung on the dorsal lobe of the peribuccal tooth; there is a space between the fold and the lobe, continuous with the dorsolateral limb of the Y-shaped lumen. A similar but less conspicuous fold is found ventral to the pseudobuccal tooth. The dorsal wall of the pseudobuccal capsule is a large convex area with a shallow longitudinal dorsal groove (Fig. 4C). The cuticle is finely striated transversally, where it is slightly striated; the striae anastomose at irregular intervals.

In male, the posterior extremity is tapered but wound at the prelocal sucker ending. The tail is ventrally curved and conical, ending in a point. Transverse striations are fairly conspicuous in the tail region, particularly ventrally in the sucker. There are 10 pairs of caudal papillae, including five prelocal and five postlocal pairs as well as a pair of small phasmids. The cloaca is marked by an anterior transverse lip; the cloacal lumen was Y-shaped, formed by three round rectal bulges, one anterior and two posterolateral. A small spine is present in the groove between the bulges on the posterior cloacal wall (Fig. 5A–D).

In female, the posterior extremity is tapered, and the tail was long and conical, tapering to a point. Phasmids are located at the mid-length of the tail. There is transverse conspicuous striation in the tail region. The anus is represented by a transverse slit. A few small pits are located near the posterior end of the rugose area (Fig. 5E). Uterine eggs are oval and surrounded by a thin-walled shell (Fig. 5F).

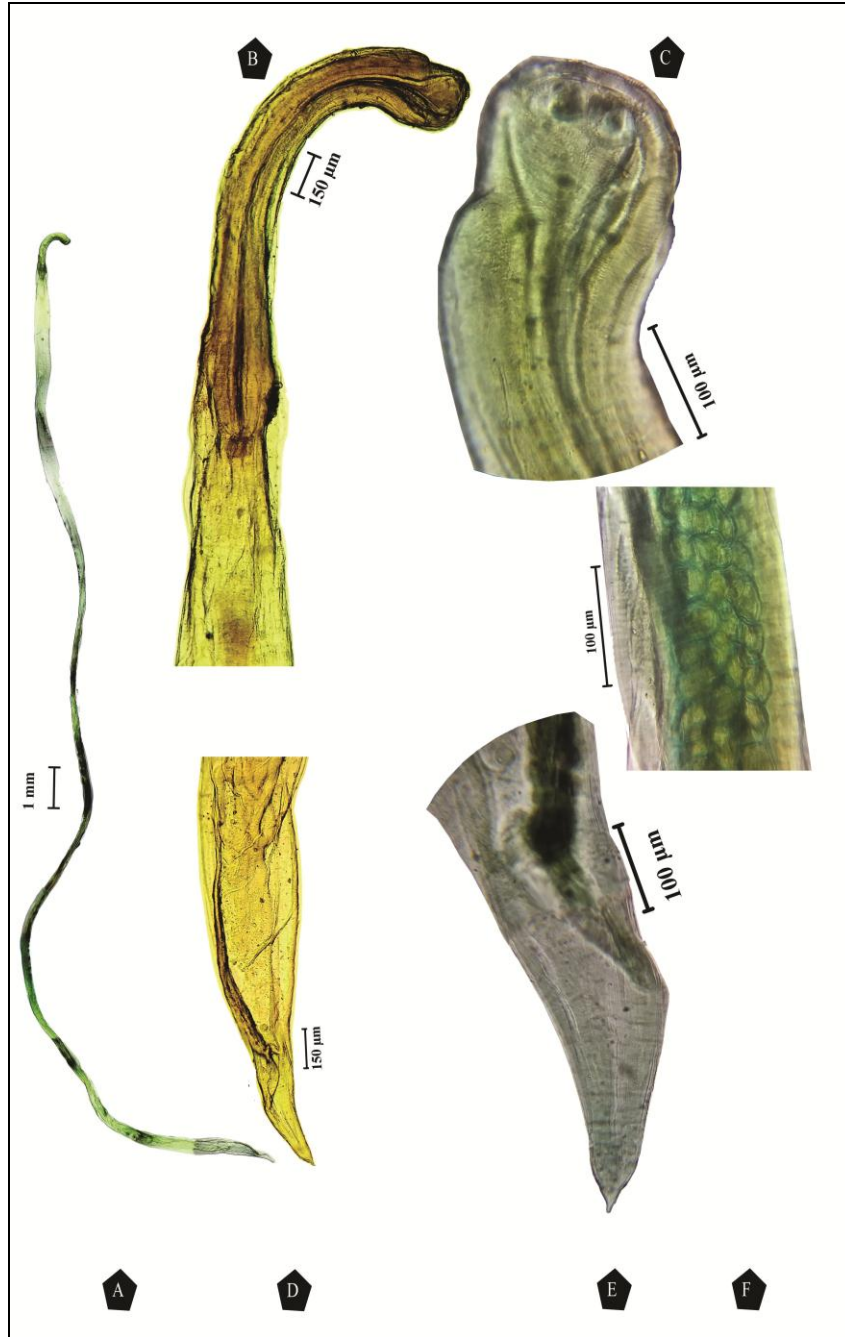


Fig. 2. Light micrographs of an adult *Cucullanus cirratus* female infecting *Mulloidichthys flavolineatus*: **A.** Whole nematode. **B.** Lateral view of the anterior extremity. **C.** Ventral view of the enlarged cephalic end. **D.** Lateral view of the posterior extremity. **E.** Lateral view of the enlarged posterior extremity. **F.** Ventral view of the uterus filled with eggs.

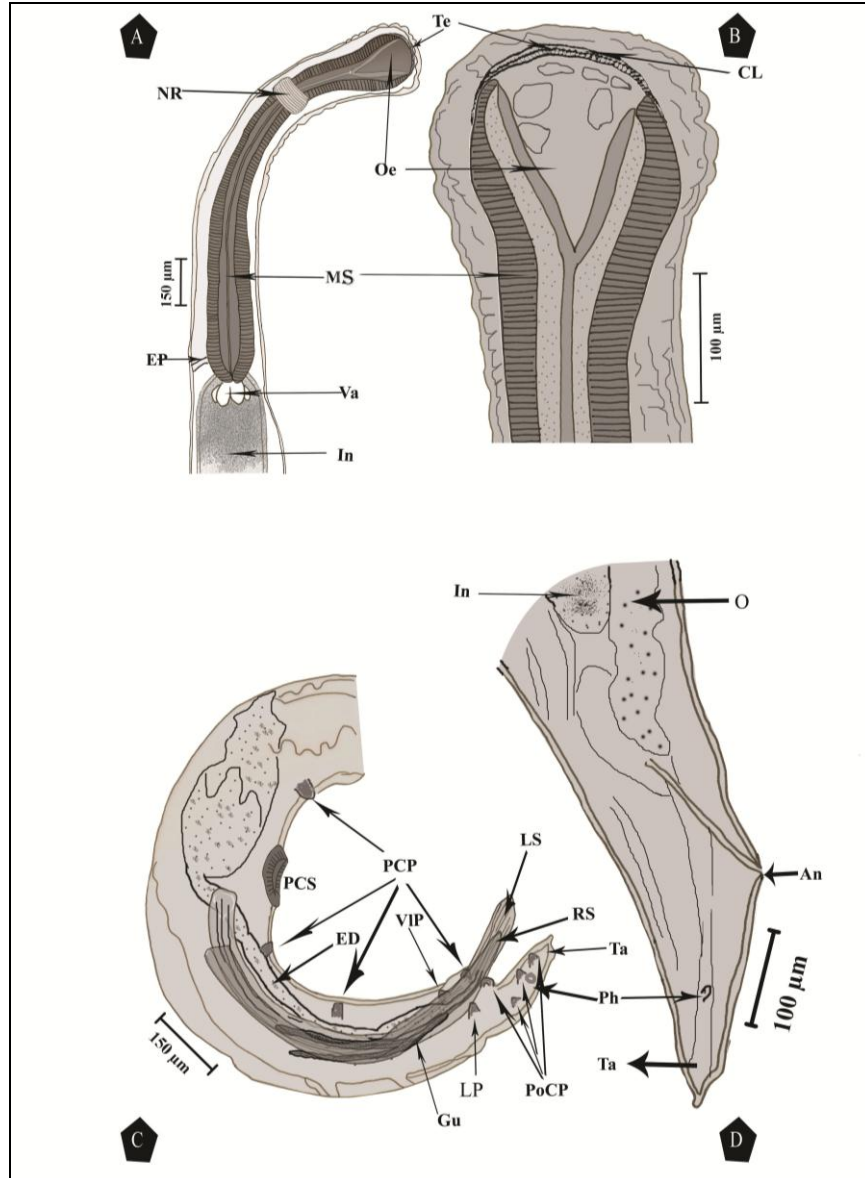


Fig. 3. Camera lucida drawings of *Cucullanus cirratus* infecting *Mulloidichthys flavolineatus*: **A.** Lateral view of the male anterior extremity. **B.** Ventral view of the enlarged male anterior extremity. **C.** Lateral view of the male posterior extremity. **D.** Lateral view of the enlarged female posterior extremity.

Abbreviations: **Te**, teeth; **CL**, cephalic collar; **Oe**, esophastome; **MS**, muscular esophagus; **NR**, nerve ring; **EP**, excretory pores; **Va**, valve; **In**, intestine; **O**, ovary; **An**, anus; **Ta**, tail; **Ph**, phasmids; **ED**, ejaculatory duct; **PCS**, prelocal sucker; **RS**, right spicule; **LS**, left spicule; **PCP**, prelocal papilla; **PoCP**, postlocal papilla; **VP**, ventral papilla; **LP**, lateral papilla; **Gu**, gubernaculum.

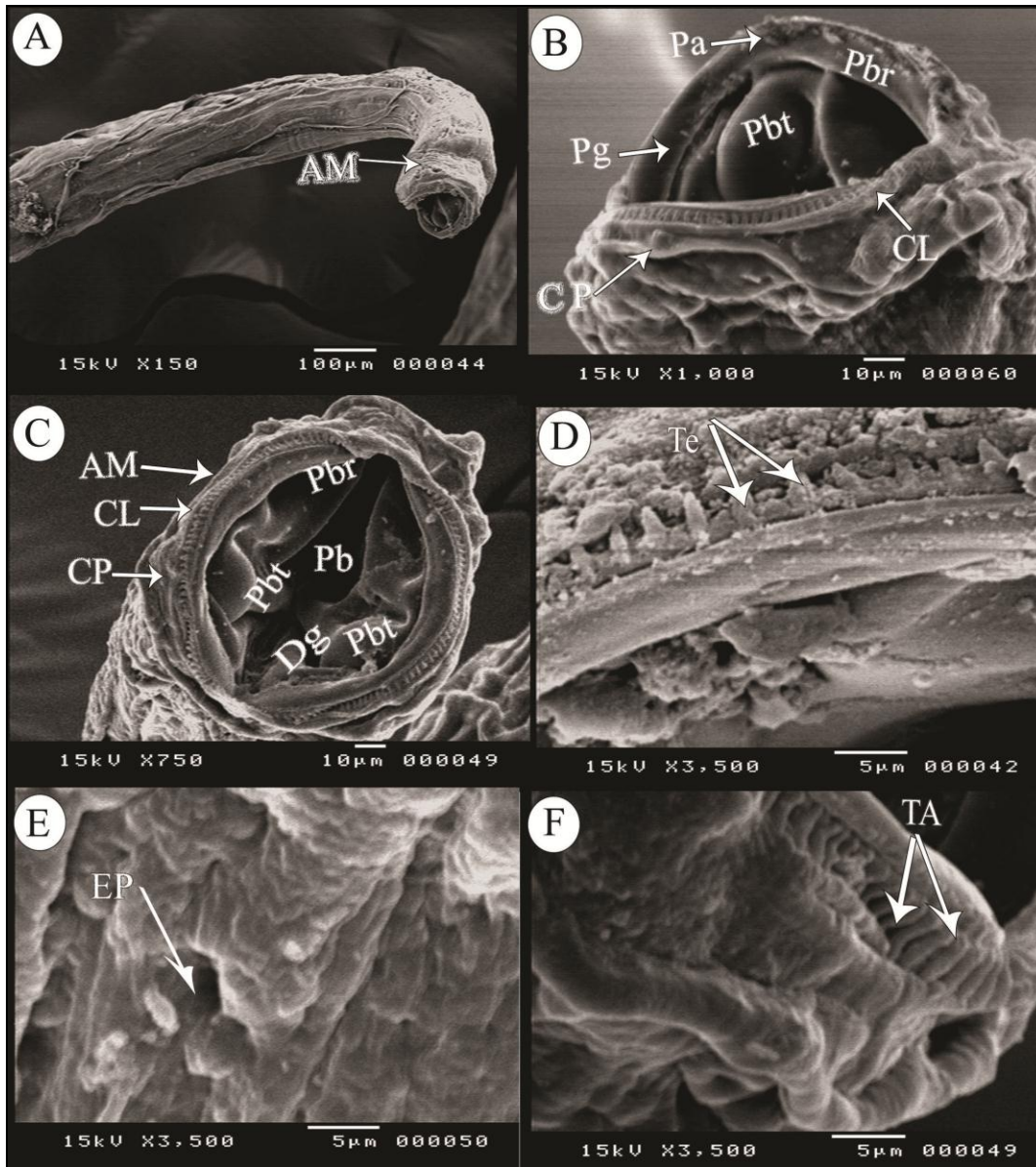


Fig. 4. SEM micrographs of the anterior extremity of *Cucullanus cirratus* infecting *Mulloidichthys flavolineatus* **A.** Lateral view of the female anterior extremity; AM, amphid. **B.** Apical high-magnification view of the male cephalic end showing P, papilla; Pbr, peribuccal rim; Pg, peribuccal groove; Pbt, peribuccal tooth; Cp, cephalic papilla; and CL, cephalic collar. **C.** Apical view of the male cephalic end; Pb, pseudobuccal capsule and Dg, dorsal groove. **D.** Apical view of the female teeth provided on the inner face of the collarette showing Te, teeth. **E.** Lateral view of a part of the male showing EP, the excretory opening. **F.** Lateral view of the part of the male showing TA, transverse annulations.

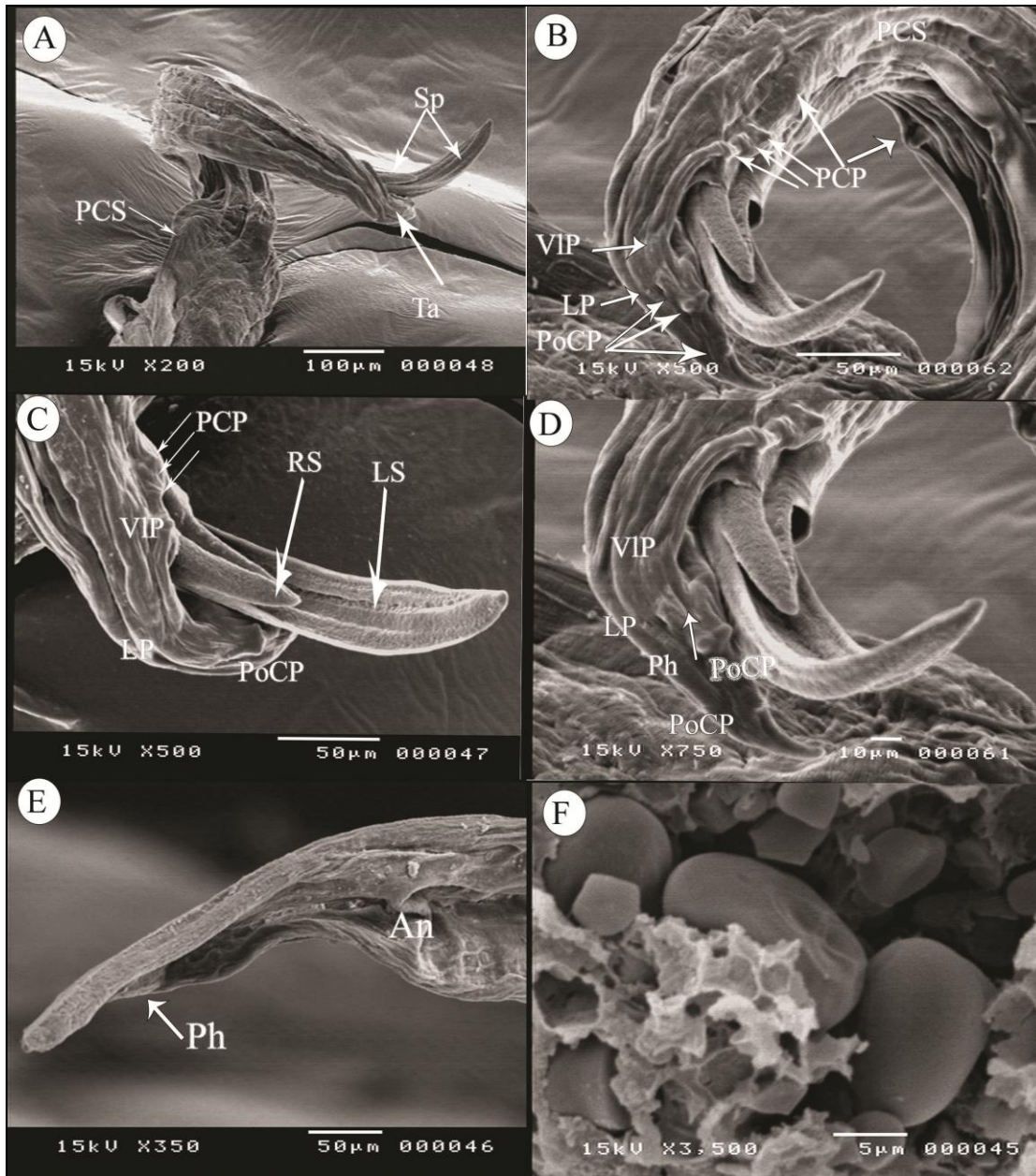


Fig. 5. SEM micrographs of the posterior extremity of *Cucullanus cirratus* infecting *Mulloidichthys flavolineatus*. **A.** Dorsoventral view of the male posterior extremity; PCS, prelocal sucker; Ta, tail; and Sp, spines. **B.** Ventrolateral view of the male posterior extremity illustrating VIP, ventrolateral papilla; PCP, prelocal papilla; PoCP, postlocal papilla; and LP, lateral papilla. **C.** Ventral view of a part of the male posterior extremity; RS, right spicule and LS, left spicule. **D.** Ventrolateral view of a part of the posterior extremity of the male showing Ph, phasmids. **E.** Ventrolateral view of the female posterior extremity; An, anus. **F.** Section of the uterus showing oval eggs.

Table 1. Comparative measurements (in millimeters) of the collected *Cucullanus cirratus* specimens with the previously described forms

Reference		Berland (1970)	Hassani and Kerfouf (2015)	Present study
Fish host(s)		<i>Gadus morhua</i> (Gadidae)	<i>Phycis blennoides</i> (Phycidae)	<i>Mulloidichthys flavolineatus</i> (Mullidae)
Locality		West coast of Norway (a fish market in Bergen)	Oran, Western Algerian coasts	Hurghada, Egypt, in the Red Sea
Site of infection		Intestine	Intestine and rectum	Intestine
Parasite number		10 (5 ♂ and 5 ♀)	3 (1 ♂ and 2 ♀)	6 (3 ♂ and 3 ♀)
Parameters				
Body length	Male	10.4–14.7	7.25–10.75	11.81–12.27
	Female	13.1–20.8	10.75–17.70	23.0–25.0
Maximum body width	Male	0.262–0.315	0.155–0.257	0.377–0.462
	Female	0.288–0.435	0.187–0.325	0.418–0.423
Esophagus length	Male	1.33–1.62	0.89–1.25	1.22–1.36
	Female	1.47–1.95	0.985–1.250	1.480–1.500
Nerve ring from the anterior extremity	Male	0.474–0.586	0.35–0.42	0.411–0.434
	Female	0.525–0.653	0.198–0.450	0.533–0.577
Excretory pore from the anterior extremity	Male	0.960–1.157	Not mentioned	1.19–1.30
	Female	1.02–1.34	Not mentioned	1.261–1.311
Tail length	Male	0.218–0.296	0.178–0.345	0.201–0.206
	Female	0.460–0.514	0.290–0.364	0.462–0.465
Right spicule length	Male	0.915–0.978	0.45–0.98	0.644–0.736
	Female	-	-	-
Left spicule length	Male	0.914–1.02	0.45–0.98	1.20–1.41
	Female	-	-	-
Gubernaculum length	Male	0.160–0.178	0.12–0.14	0.256–0.270
	Female	-	-	-
Vulva from anterior the extremity, %	Male	-	-	-
	Female	7.50–11.72	Not mentioned	14–15
Vulva from the posterior extremity% body length	Male	-	-	-
	Female	56.5–60.5	Not mentioned	60.0–60.8

Table 2. Comparative measurements (in millimeters) of the present *Cucullanus cirratus* and other previously described related species in Egypt

Reference		Abdel-Gaffar <i>et al.</i> (2014)	Adel <i>et al.</i> (2019)	Present study
Related species		<i>Cucullanus egyptae</i>	<i>Cucullanus aliyaii</i>	<i>Cucullanus cirratus</i>
Fish host (s)		<i>Anguilla anguilla</i> (Family: Anguillidae)	<i>Siganus canaliculatus</i> (Family: Siganidae)	<i>Mulloidichthys flavolineatus</i> (Family: Mullidae)
Locality		Gulf of Suez, Egypt in the Red Sea	Hurghada, Egypt in the Red Sea	Hurghada, Egypt in the Red Sea
Site of infection		Intestine	Intestine	Intestine
Parameters				
Body length	Male	7.5-8.9	6.00-8.30	11.81-12.27
	Female	12.9-13.5	7.4-10.3	23.0-25.0
Maximum body width	Male	1.6-1.9	1.59-1.73	0.377-0.462
	Female	2.9-3.2	2.00-2.60	0.418-0.423
Esophagus length	Male	0.69-0.72	0.54-0.89	1.22-1.36
	Female	0.9-1.4	0.83-1.00	1.480-1.500
Esophagus width	Male	0.11–0.14	Not mentioned	0.142-0.150
	Female	0.13–0.16	Not mentioned	0.185-0.193
Esophastome length	Male	0.24–0.27	Not mentioned	0.140-0.150
	Female	0.29–0.31	Not mentioned	0.136-0.142
Esophastome width	Male	0.14–0.18	Not mentioned	0.127-0.130
	Female	0.13–0.16	Not mentioned	0.108-0.110
Right spicule length	Male	0.59-0.62	1.18-1.2	0.644-0.736
	Female	-	-	-
Left spicule length	Male	0.59-0.62	1.18-1.2	1.20-1.41
	Female	-	-	-

DISCUSSION

The collected nematode specimens were identified as belonging to the genus *Cucullanus* Müller, 1777 according to the following criteria: dorsally bent anterior extremity; pseudocapsule formed by dilatation of the anterior end of the esophagus, which is enlarged posteriorly; lack of cephalic glands; and simple intestine. In males the preanal sucker lacks a chitinous rim, caudal alae are absent, and the gubernaculum is present. In addition, the present species similar with *Cucullanus cirratus* Müller, 1777 (type species of the genus) from *Urophycis brasiliensis* that was described by (Vieira *et al.*, 2015; Arai and Smith 2016) in absence of lips and pseudolabia, the pre-cloacal sucker of males lacks a sclerotized rim, and caudal alae are absent, presence of gubernaculums.

In females, the vulva is located near the middle of the body, the vagina is directed anteriorly, and two ovaries are present. Females are oviparous, and the eggs show a thin shell. These nematodes are parasites of the intestine of fish (**Yamaguti, 1963**).

According to **Campana-Rouget (1957)**, the oral side bears a membranous flange termed the “collarete.” The collarete bears on its inner side a number of small teeth. The number of these teeth is between 60 and 70 on each side; in the present species, there were 60 teeth.

Cucullanus longicollis Stossich, 1899 (from *Mullus barbatus* and *Mullus sumuletus*) has been reported in the Mediterranean and Adriatic Seas (**Janiszewska, 1949; Hristovski and Jardas, 1983; Petter et al., 1984**). Hosts of *Cucullanus longicollis* belong to the same family of host of the current specimen (Mullidae) belongs, although the former are larger nematodes collected from a different ecological area.

Cucullanus gardneri inhabits the intestine of four common species of Red Sea fish, including *Siganus rivulatus*, *Siganus luridus*, *Mulloidis vanicolensis*, and *Parupeneus cyclostomus* (**Heckmann et al., 2009**). The fish hosts *Mulloidis vanicolensis* and *Parupeneus cyclostomus* (Mullidae) belong to the same host family to which the host of the current specimen belongs; however, the two species show some variations: *Cucullanus gardneri* is reddish not whitish, the male is larger, and the external surface of the nematode is covered with marked cuticular transverse striations that are branched and intermingled.

Cucullanus bourdini Petter and Le Bel, 1992 inhabits the intestine of three species of Red Sea fish, including *Parupeneus filamentosus*, *Lutjanus fulviflamma*, and *Lutjanus gibbus* (Lutjanidae) from some Red Sea fishes, Yemen (**Al-Zubaidy et al., 2012**); the present specimen was collected from the Red Sea, Egypt, but differed from this species in terms of the spicules that were equal in size as opposed to unequal spicules in the present specimen, and in number and arrangement of the caudal papillae, in present species there are five prelocal and five postlocal pairs, The prelocal papillae are arranged as follows: the first pair is anterior to the prelocal sucker, the second pair is at the posterior border of the prelocal sucker, the third pair is present midway between the second pair and the cloacal opening, and the last two pairs of prelocal papillae are located near the cloaca on either side in a longitudinal ventrolateral row. The postlocal papillae are arranged as follows: the first pair is ventrolateral and close to the cloacal opening, the second pair is located lateral to the first pair, and the remaining three pairs are located midway between the cloaca and the tail tip: two pairs are ventrolateral, and other is dorsolateral. The last pair of ventrolateral papillae is located near the tail tip; and a pair of small phasmids is present anterior to these three pairs of papillae. In *Cucullanus bourdini*, papillae: 3 pairs just in front of the sucker; four pairs of ad-cloacal papillae, three sub-ventral and one lateral pair; four pairs of post-cloacals, 2 pairs sub-ventral, one lateral situated on the level or just in front of the anterior pair of sub-ventrals. Phasmids situated anterior to the other pairs of post-cloacal papillae.

Cucullanus anguillae (**Wang and Ling, 1975**) and *Cucullanus oceaniensis* (**Moravec et al., 2005**) differ than the present species in body shape where they characterized with short and wide body with the presence of equal spicules in male opposed to long and slender with unequal spicules in males of present species.

Cucullanus minutus differed from *Cucullanus cirratus*. Apart from its small size and fusiform shape, there are differences in the head and pseudobuccal capsule. First, the

pseudobuccal capsule is not keyhole-shaped, as in *Cucullanus cirratus*, and resembles a laterally compressed slit. In *Cucullanus minutus*, the lateral structure is a long thin blade, whereas in the present species, it was short and blunt as in (Berland, 1970).

The present species differed from *Cucullanus maldivensis* n. sp Moravec *et al.* (2008) in the arrangement of the genital papillae; the latter has five preanal and no adanal pairs of subventrals.

The spicules of the present specimens are unequal compared with equal spicules in *Cucullanus thaiensis* and *Cucullanus rastrelligeri* (Thanapon *et al.*, 2011).

Abdel-Ghaffar *et al.* (2014) described the new species *Cucullanus egyptae* from Cucullanidae, which was isolated from the intestine of the European eel *Anguilla anguilla* along the coast of the Gulf of Suez (Red Sea, Egypt) and Adel *et al.* (2019) described another species *Cucullanus aliyaii* from the intestine of *Siganus canaliculatus* from Red Sea in Hurghada, Egypt. The present specimens were collected from the same location but differed from them where in present male there are two unequal spicules but *Cucullanus egyptae* have two short equal-sized spicules; *Cucullanus aliyaii* have two long equal spicules, in addition both *Cucullanus egyptae* and *Cucullanus aliyaii* males and females are shorter and more widely body size than those of the present species as shown in (table 2). The description that by Hassani and Kerfouf (2015) similar with the present description in overall appearance and both of them have the same number of caudal papillae except in terms of equal spicules compared with unequal spicules in the present specimen as shown in (table 1).

The present specimen was similar in overall appearance such as body shape, slit-like mouth opening, arrangement of teeth, presence of four sub-median cephalic papillae, unequal male spicules and almost all body part dimensions to *Cucullanus cirratus* Müller, 1777 that was described by Berland (1970) as shown in (table 1).

CONCLUSION

The redescription of *Cucullanus cirratus* Müller, 1777 along with its first record from the Red Sea in Egypt as well as record of the new host *Mulloidichthys flavolineatus* through the light on a very important phenomenon of parasite migration from European seas to the Red sea through the Mideteranean Sea and explore the needs to more extensive studies on the cucullanid life cycles using different fish hosts.

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