

ON THREE SPECIES OF THE NEMATODE GENUS
CUCULLANUS MUELLER 1777, AND A NOTE
ON *LAPPETASCARIS LUTJANI* RASHEED,
1965, FROM INDIAN MARINE FISHES

By

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(With 1 Text-figure)

INTRODUCTION

During January—February, 1976, a faunistic survey of some coastal areas of India was undertaken by the authors in the course of which some nematodes were collected from marine fishes. The present paper deals with three species of the genus *Cucullanus* Müller, 1777 of this collection. One of the species is new and the other known two show interesting variations and form new host and locality records.

The paper also includes some morphological variations observed in *Lappetascaris lutjani* Rasheed, 1965, the material of which was collected by Dr. M. Hafeezullah in November, 1975. This species was first reported from Karachi, Pakistan, but is now recorded from Tamil Nadu.

All measurements are in millimeters.

SYSTEMATIC ACCOUNT

Family CUCULLANIDAE Cobbold, 1864

Genus *Cucullanus* Mueller, 1777

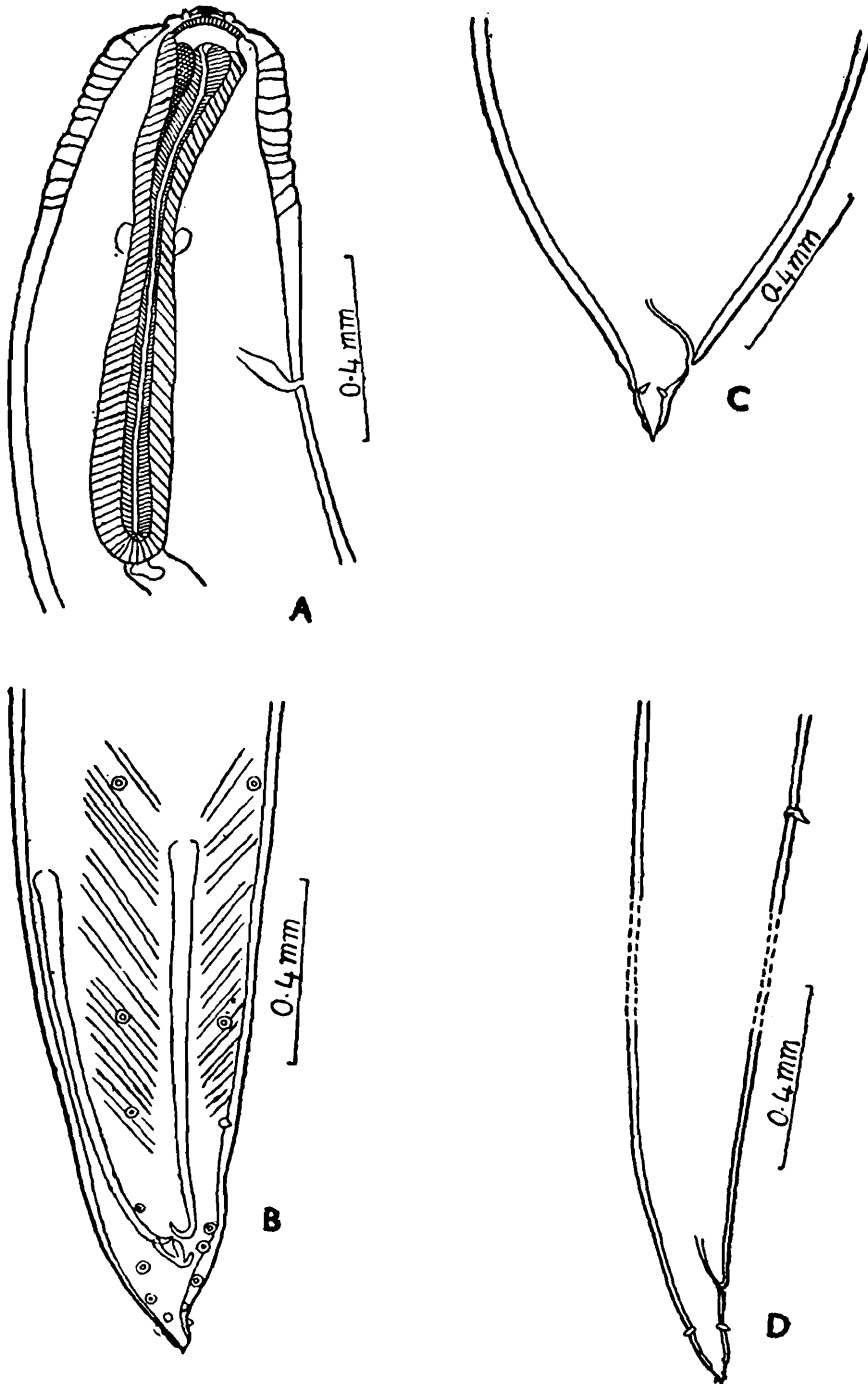
Cucullanus rivulatus sp. nov.

(Text-fig. 1, A-C)

Material : Holotype ♂ ; Z. S. I. Reg. No. WN 203/1 ; host — *Lutjanus rivulatus* ; location—intestine ; locality—Madras ; 3. ii. 1976 ; collector—*T. D. Soota*. Paratypes—one ♂ & 2 ♀♀ ; Z. S. I. Reg. No. WN 204/1 ; other particulars as for holotype. Other material : one ♂

Z. S. I. Reg. No. WN 205/1 ; host—*Pomadasya* sp. ; location—intestine ; locality—Madras ; 2. ii. 1976 ; collector—*T. D. Soota*.

Description : *Male* : Body 4.5-7.5 long, 0.55-0.7 wide ; oesophagus 0.75-1.16 long ; tail pointed, 0.2-0.22 long ; spicules similar and equal, 0.7-0.9 long ; gubernaculum V-shaped, 0.05-0.1 long ; caudal papillae 8 pairs, 3 precloacal, one adcloacal and 4 postcloacal ; caudal muscles well developed.



Text-fig. 1. (A-C) *Cucullanus rivulatus* sp. nov., A. ♂ anterior end, B. ♂ posterior end (Holotype), C. ♀ posterior end (Paratype) ; D. *Cucullanus alii* (Kalyankar), ♀ posterior end.

Female : Body 6.7-7.8 long, 0.77-0.88 wide ; oesophagus 1.2-1.4 long ; tail pointed, 0.16-0.22 long ; vulva 3.08-3.25 from posterior end ;

eggs 0.066×0.044 ; a pair of phasmids present, 0.05-0.08 from posterior end.

Remarks : Ali (1956) established the genus *Indocucullanus* with *I. jaiswali* as its type species for his specimens from a freshwater fish, *Barbus sarana* [= *Puntius sarana*] from Hyderabad. Subsequently another species *I. arabiansae* was added by Ali and Kalyankar (1966) based on a male specimen from a marine cat fish, *Tachysurus maculatus* from Bombay, thus extending the host range of the genus to marine fish. Kalyankar (1971) while giving the description of female of this species also added to the genus three more species viz., *I. jalnaensis*, *I. alii*, and *I. malvanae* respectively from *Labeo rohita*, *Sciaena glaucus* [= *Johnius glaucus*] and *Tachysurus maculatus*, all from Maharashtra. Khan (1969) added another species *I. longispiculum* from *Sciaena diacanthus* [= *Protonibea diacanthus*] from Karachi, Pakistan. But Petter (1974) synonymised *Indocucullanus* with *Cucullanus*. Gupta and Srivastava (1975) described in abstract, and Srivastava and Gupta (1976) in detail two more species viz., *I. puriensis* and *I. ariusi* from *Arius venosus* [= *Tachysurus venosus*] and *Arius platystomus* [= *Tachysurus platystomus*] respectively from Puri, Orissa. Arya and Johnson (1975) added *I. querreroi*, Gupta and Garg (1976) *I. wertheimae*, Bilqees, Fatima and Rehana (1977) *I. longispiculum diacanthi*, and Gupta and Gupta (1979) *I. sciaenai*.

The present species comes closer to *Cucullanus jalnaensis* (Kalyankar, 1971), which was based on a single male, in the absence of cephalic alae and in the number of caudal papillae but differs in body size being 4.5-7.5 (13.03 in *C. jalnaensis*), in having equal spicules 0.7-0.9 (subequal, 0.55 & 0.5 in *C. jalnaensis*) and in the arrangement of caudal papillae being 3 precloacal, one adcloacal and 4 postcloacal (3 precloacal, 2 adcloacal and 4 postcloacal in *C. jalnaensis*).

***Cucullanus alii* (Kalyankar, 1971) Petter, 1974**

(Text-fig. 1, D)

Material : One ♂ ; Z. S. I. Reg. No. WN 206/1 ; host — *Lutjanus johni* ; location—intestine ; locality—Pondicherry ; 4. xii. 1975 ; collector — *M. Hafeezullah*. One ♂ and one ♀ ; Z. S. I. Reg. No. WN 207/1 ; host — *Sillago sihama* ; location—intestine ; locality—Mangalore ; 3. i. 1976 ; collector — *T. D. Soota* ; 2 ♂ ♂ ; Z. S. I. Reg. No. WN 208/1 ; host — *Protonibea diacanthus* ; location—intestine ; locality—Calicut ; 16. i. 1976 ; collector—*T. D. Soota*. 3 ♂ ♂ & 4 ♀ ♀ ; Z. S. I. Reg. No. WN 209/1 ; host — *Caranx* sp. ; location—intestine ; locality—Madras ; 1. ii. 1976 ; collector—*T. D. Soota*. 5 ♂ ♂ & 22 ♀ ♀ ; Z. S. I.

Reg. No. WN 210/1 ; host —*Protonibea diacanthus* ; location—intestine ; locality—Madras ; 3. ii. 1976 ; collector —*T. D. Soota*.

Description : Male : Body 2.4-6.0 long, 0.22-0.38 wide ; oesophagus 0.6-0.7 long ; tail pointed, 0.1-0.2 long ; spicules equal, 0.8-0.9 long ; gubernaculum V-shaped, 0.05-0.1 long ; caudal papillae 10-12 pairs, 5-6 precloacal, one adcloacal, and 4-5 postcloacal ; caudal muscles well developed, though not reported by Kalyankar (*op. cit.*).

Female : Body 3.2-4.8 long, 0.36-0.38 wide ; oesophagus 0.6-0.7 long ; tail pointed, 0.16-0.22 long ; phasmids conspicuous and 0.1 from posterior end ; vulva 1.8-2.2 from posterior end ; eggs round, 0.022×0.022 ; a ventral papilla present in most of the females 1.2-1.5 from posterior end, though not reported by Kalyankar (*op. cit.*).

Remarks : The present specimens show some differences from Kalyankar's description of the species which was based on a male and a female, in a few characters *viz.*, body size, number of caudal papillae and in having equal spicules, but these variations can be taken as intraspecific. However, the presence of a ventral papilla in preanal region of females is indeed significant. Its true nature is not well understood but it may have a sensory function.

The species is recorded here from new hosts and new localities.

Cucullanus arabiansae (Ali and Kalyankar, 1966) Petter, 1974

Material : One ♂ ; Z. S. I. Reg. No. WN 211/1 ; host—*Tachysurus* sp. ; location—intestine ; locality—Mangalore ; 3. i. 1976 ; collector—*T. D. Soota*.

Description : Male : Body 5.4 long, 0.24 wide ; oesophagus 0.9 long ; tail conical, 0.2 long ; spicules equal, 0.13 long ; gubernaculum 0.9 long ; caudal papillae 9 pairs discernible, 3 precloacal, one adcloacal and 5 postcloacal.

Remarks : The present specimen is the smallest example so far recorded for the species and shows variations in body size, size of spicules, and number and arrangement of caudal papillae but these are considered here as intraspecific. The species is recorded here for the first time from a new host and a new locality.

Family ANISAKIDAE (Railliet and Henry, 1912)

Genus **Lappetascaris** Rasheed, 1965

Lappetascaris lutjani Rasheed, 1965

Material : 2 ♂♂ ; Z. S. I. Reg. No. WN 212/1 ; host—*Ilisha feli-*

gera ; location—intestine ; locality—Karaikal ; 28. xi. 1975 ; collector—*M. Hafeezullah*.

Description : *Male* : Body 32.5 long, 0.66 maximum wide ; oesophagus 2.7-2.75 long ; tail 0.09-0.11 long ; spicules with bifid tips, 2.7-2.75 long ; caudal papillae 20 pairs discernible, 17 precloacal, 3 postcloacal.

Remarks : The present specimens show some differences from Rasheed's description of the species *viz.*, in body size, and in number and arrangement of caudal papillae, but these are considered here as intraspecific variations. The genus and species are now recorded here for the first time from Tamil Nadu and also from a new specific host.

SUMMARY

The paper deals with three species of the nematode genus *Cucullanus* of which one is new and two already known. These latter show interesting variations and also form new host and locality records. *Lappetascaris lutjani* Rasheed, 1965, is also recorded here from a new host and from a new locality.

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