

Sonderdruck aus „Zoologischer Anzeiger“ Bd. 175, Heft 2/3, 1965 *d*
Akademische Verlagsgesellschaft Geest & Portig K.-G., Leipzig

Cynura Klunderi (Leptolaimidae), a New Species of
Marine Nematode¹

By

D. G. MURPHY²

With 2 figures

(Eingegangen am 18. Juni 1964)

¹ This investigation was supported by a Public Health Service fellowship GPD-48, 939 from the Nat'l Institute of General Medical Sciences and was conducted at the Zoologisches Staatsinstitut, Hamburg.

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Cynura Klunderi (Leptolaimidae), a New Species of Marine Nematode¹

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(Eingegangen am 18. Juni 1964)

Cynura klunderi n. sp. is the first representative of this small genus to be described from Pacific Ocean waters. Of the two previously described species, *C. uniformis* Cobb, 1920, was taken from the Atlantic coast of Florida, and *C. papillata* Gerlach, 1962, from the Indian Ocean. The new species is named in honor of the late B. W. KLUNDER.

Description of male (s. fig. 1; 2B, E-G, J-J')
 $L = 2.92$ mm, $a = 95.3$, $b = 9.5$, $c = 30.4$ (holotype).

Only one male was present in the collection. The specimen is long and slender, of somewhat greater diameter in the region of the esophagus, and of considerably greater diameter in the tail region, relative to the central body diameter. In the formula given the width used in calculating "a" was that of the mid-body region. Using the greatest width, found slightly forward of the anus, the value is significantly less: $a = 68.5$.

The head is conical, blunt in the lip region. The cuticle is thick and prominently annulated. Annules forward of the cephalic setae number four. There are six prominent lips, each bearing terminally a small labial papilla. The circle of labial papillae is followed by a circle of six cephalic papillae. There are four

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cephalic setae, these being 18 microns in length. Head diameter at the level of the cephalic setae is 16 microns. Somatic setae are not present; however, there is a lateral row of papillae which are regularly spaced and extend the full length of the specimen. Additional papillae are present in the cervical and tail regions (s. fig. 1 and 2J—J'). In some instances a relatively large hypodermal cell could be seen in association with the somatic papillae, suggesting a glandular function. Lateral alae are present: manifested as two rows of punctations. In esophageal and tail regions there are additional scattered punctations in the lateral field.

The amphids are circular, prominent: located opposite the base of the sclerotized portion of the stoma immediately below the cephalic setae. They are 9 microns in diameter (45% of the corresponding head diameter), interrupting 9 striae (8 annules) including those to which tangent. The anterior rim is located 11 microns posterior. The head diameter at the level of the amphids is 20 microns.

The sclerotized portion of the stoma is 23 microns long and 4.5 microns at its greatest diameter. There is no evidence of teeth. The esophageal glands open 35 microns posterior.

The esophagus is 310 microns long and for the greater portion of its length cylindrical, surrounded in the mid-region by numerous cells, presumably esophageal glands. The nerve-ring is located at 43%. At the base there are two modest, bulb-like swellings. The cardia is round, surrounded by intestinal cells.

There are two ventral (excretory) glands lying posterior to the esophagus subventrally, one on either side of the intestine. In relative position they are tandem, not adjacent. The excretory pore opens just posterior to the nerve-ring.

The intestine terminates in a weakly differentiated rectum. Several anal glands are present lying dorsal to the cloacal pouch between the spicules.

The spicules are about 50 microns long: arcuate. The gubernaculum bears a single, prominent, dorsal apophysis. The lateral pieces (see MURPHY and CANARIS, 1964) are weakly sclerotized and are positioned ventrally to the spicular apparatus (s. fig. 2E). The structure of the gonads is similar to that of *Anticoma typica* Cobb, 1891 (s. CHITWOOD & CHITWOOD, 1950, fig. 124 L.) in that the testes are both directed anteriorly (s. fig. 2B). The vas deferens is not of uniform composition, but is composed of cells of differing appearance, and in structure possesses three regions separated in each case by an isthmus of relatively narrow diameter. Copulatory glands are present and are not unlike those reported in *Theristus pratti* Murphy and Canaris, 1964. There appears to be only two per side positioned about 390 microns anterior from the anus. An additional pair of glands is to be found in the cloacal region, one on either side of the ejaculatory duct. I am uncertain as to whether these belong to the copulatory gland complex, which I interpret as opening via the lateral pieces, or if these are ejaculatory glands opening into either the ejaculatory duct or cloaca.

Two prominent, tuboid, preanal supplements are present. The smaller of the two is 47 microns anterior to the anus and is 30 microns long. Fifty microns forward of this is the second supplement which is 30 microns long. The larger

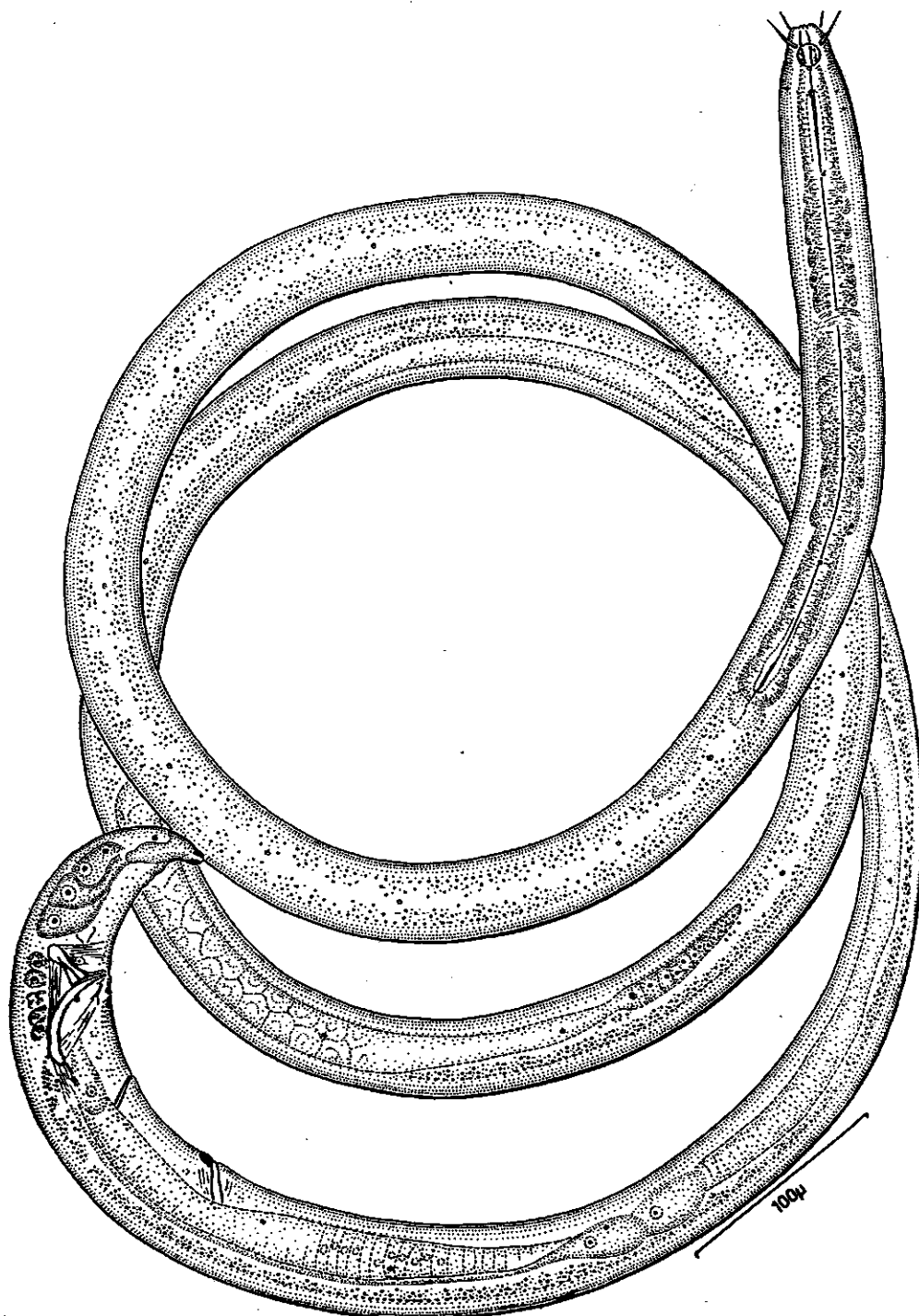


Fig. 1. *Cynura klunderi* n. sp. Male (holotype)

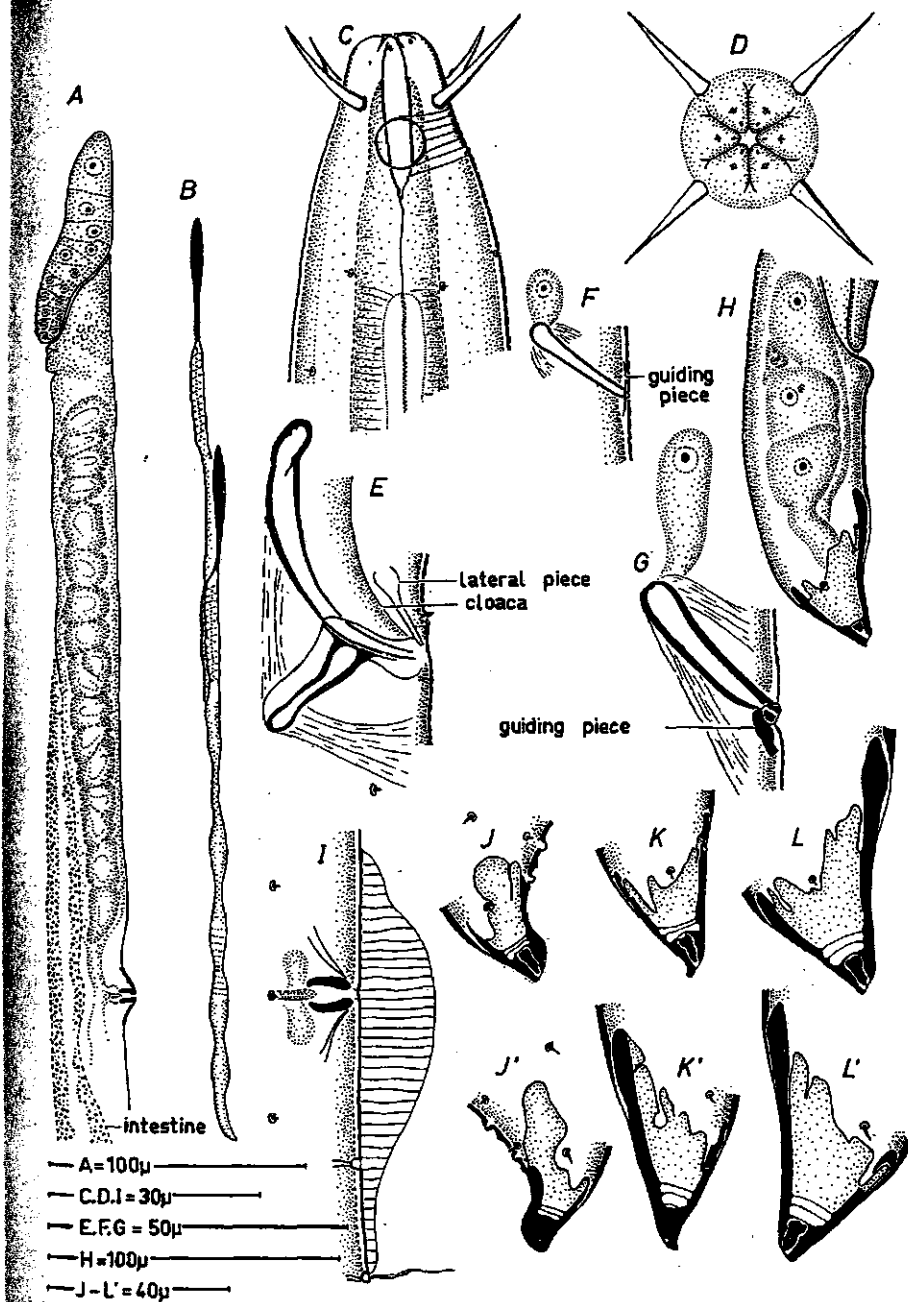


Fig. 2. *Cynura klunderi* n. sp. A, female genitalia (only anterior ovary shown). B., male gonads: schematic. not to scale. C. lateral head view of female. D. face view of female. E., male spicular region. F. male posterior supplement. G. male anterior supplement. H. female tail. I. female vulvular region showing "bursa" and supplements. J-J', terminus of male tail. K-L', termini of tails of two females

of the two is provided with prominent protractor muscles extending from the proximal end to the cuticle. The distal end is provided with a sclerotized guiding piece. In-as-much as no retractor muscles are to be seen, I would suggest that the supplement as such is not protruded, but rather that the tip of the supplement plus the surrounding cuticle combined form a small protuberance upon contraction of the protractor muscles, thus enabling more positive contact during copulation. The smaller of the two supplements is apparently provided with protractor muscles as well, although they are not clearly seen. The guiding piece in the latter is also much simpler, appearing to be a plate-like structure encircling the distal end.

There is a single, ventral, preanal papilla (s. fig. 2E). Located ventrally on the tail are two papilloid structures (s. fig. 2J—J') which I will call postanal supplements to avoid confusion with the genital and somatic papillae which are quite different structures. In both cases the postanal supplement is followed by a small protuberance; however there is no indication of nerve or duct leading to the latter.

The tail is conical, 2.3 anal diameters long (100 microns). The three caudal glands are large and distinct. The tip of the tail is provided with a prominent, sclerotized capsule typical for the genus (s. fig. 2J—J').

Description of female (s. fig. 2A, C, D, H, I, K—L)

$L = 4.01$ mm (3.15—4.49 mm), $a = 94.0$ (78.0—118.0), $b = 11.8$ (9.3—14.7), $c = 43.4$ (34.8—48.6), $V = 41.8\%$ (39.4—43.3%), $Ov1 = 8.0\%$ (5.8—8.9%), $Ov2 = 9.5\%$ (7.3—10.5%). (6 specimens measured).

Allotype: $L = 3.71$, $a = 82.0$, $b = 11.3$, $c = 47.3$, $V = 41.3\%$, $Ov1 = 8.9\%$, $Ov2 = 10.5\%$.

In general appearance the female closely resembles the male with the exception that there is no evidence of enlargement in either the esophageal or tail regions. Cephalic and somatic sensory organs appear identical, as do stomach, esophagus, and intestine. The cardia is relatively smaller in the female. The somatic papillae do not lie in a lateral row, but in most of the body regions lie alternately either dorsally or ventrally of a mid-lateral position.

The ovaries are paired, reflexed. The vagina is prominently sclerotized. A very prominent bursa was observed on three of the five females studied . . . on the remaining two the situation was not clear. It would be reasonable to suggest that such a structure was elaborated during copulation from adhesive excretions from either the male or female, or both. The striations would thus be explained as impressions received from the cuticle. Supplements are present which appear very similar to those found on some chromadorid males, e. g. *Chromadorina germanica* (BÜTSCHLI, 1874). The allotype has five such supplements, all posterior to the vulva: the first being 27 microns posterior, the next three lying at intervals of 15 microns, and the fifth being separated from the fourth by 30 microns. Of the paratypes the supplements number three or four

with the exception of one female which had a single supplement anterior to the vulva in addition to four posterior. In some instances a threadlike substance is to be seen which I believe to be solidified glandular exudate from the supplements (s. fig. 2I).

There are three ventro-lateral papillae on either side of the vulva (s. fig. 2I).

The tail is cylindro-conical, about 2.2 anal diameters long. The terminal capsule is illustrated from both sides for two specimens (s. fig. 2K-L). A definite pattern of sculpture for the sclerotized portion does not seem to be present.

From the measurements given for the male, the female differs significantly only in two instances: the diameter at the base of the esophagus is somewhat greater, averaging 40 microns, and the anal diameter is less than that of the male, about 39 microns.

Designation of Types

Holotype (male) and allotype (female) on slide DM 111 c; paratypes (five females) on slide DM 111 cc. Institutional deposition of the type specimens will be published at a later date. The collection was made by the author on 21 November 1962. Type locality: Moss Landing, California: from inter-tidal sand of a small cove subjected to mild wave action.

Discussion

It is unfortunate that the type species of this genus, *C. uniformis* Cobb, 1920, was described on the basis of a single female. On the basis of female alone, *C. klunderi* is immediately distinguished from both COBB's species and *C. papillata* Gerlach, 1962, in that the former bears distinct genital supplements not to be found on the females of the other two species. It is further distinguished by a more forward location of the vulva, i. e. 42% vrs. 50% for *C. uniformis* and 48% for *C. papillata*. (The probable female for the latter species having been described by GERLACH in 1953 as *C. aff. uniformis*. I would attribute the unusual breadth depicted in figure 6, page 81, of the female in question to the extreme flattening that is characteristic of the type of unsupported formalin mount consistently used in nematode studies published by GERLACH to date.) The position of the caudal glands of *C. uniformis* is not certain, COBB having stated that they "probably lie in front of the anus": those of *C. klunderi* are very distinctly located in the tail. The vulva of *C. uniformis* is elevated and conspicuous and the vagina (sclerotized as in my species) extends halfway across the body, whereas by *C. klunderi* the vulva from lateral view is inconspicuous and the sclerotized portion of the vagina is only about 20% of the corresponding body diameter in length.

The males of *C. papillata* and *C. klunderi* can be readily distinguished by differences in shape of gubernaculum and spicules (s. fig. 7 of GERLACH, 1962). Furthermore, *C. papillata* does not possess the prominent guiding piece found on the anteriormost supplement of *C. klunderi*.

C. uniformis possesses a "large cylindroid cardia, three fifths as wide as the neck". That of *C. klunderi* (female) is small, about one-fourth the corresponding body diameter.

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From Zoological Survey of India, Calcutta

Camallanides hemidenta sp. nov. (Nematoda: Camallanidae), Occurring in *Channa striatus* (Bloch)

By

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With 2 figures and 1 table

(Eingegangen am 24. August 1964)

Introduction

Two males and one female nematodes are collected from the intestine of a fresh water fish, *Channa striatus* (Bloch). The parasites belong to the family *Camallanidae* Railliet and Henry, 1915 (cited from BAYLIS, 1939), Subfamily *Camallaninae* Chakravarty and Majumdar, 1960 and the genus *Camallanides* Baylis and Daubney, 1922. The present specimens do not agree in with the descriptions of any of the known species of the genus *Camallanides*, and so a new specific name is proposed for it.

Host: *Channa striatus* (Bloch).

Location: Intestine.

Locality: Calcutta, India.

Description

The body is finely striated in transverse direction. The buccal capsule is composed of two lateral buccal valves. Each of the buccal valves bear eleven

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