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Nematodes from the Indian Ocean: description of six new species of the genus *Molgolaimus* DITLEVSEN, 1921 (Nematoda: Desmodoridae)

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Abstract

Six new species of the genus *Molgolaimus* DITLEVSEN, 1921 are described from the Indian Ocean. *Molgolaimus abyssorum* n.sp. is characterised by a small body (L = 287-370 μm), amphids close to the anterior end (2-3 μm behind the anterior end), short (2 × abd) curved spicules and absence of pre-cloacal supplements. *Molgolaimus tyroi* n.sp. is characterised by a small body size (L = 225-290 μm), amphids close to the anterior end (2 μm behind anterior), long thin spicules curved twice and one or two pre-cloacal supplements. *Molgolaimus gazii* n. sp. is characterised by narrow anterior end with the head region slightly offset, wide amphids (70% cbd) located at 2.6-3.0 × hd behind the anterior end, thin, long spicules with anterior one third parallel to the body axis and posterior two thirds of its length curved. *Molgolaimus sabakii* n. sp. is characterised by narrow anterior end, sexual dimorphism in size of amphids [wide amphids in males (70-80% cbd), smaller ones in females (55% cbd)] located at 17-20 μm (3.4-4.0 × hd) behind the anterior end, thin, long spicules which have anterior half parallel to the body axis and the posterior half curved and two ventral pre-cloacal supplements located within the spicule region. *Molgolaimus kiwayui* n. sp. is characterised by head region off set by a constriction, amphids located close to anterior end (1.0-1.5 × hd behind the anterior end), short slightly curved spicules with a capitulum. *Molgolaimus tanai* n. sp. is characterised by cephalic setae (2-3 μm long) located at 5-6 μm behind the anterior end, amphids located at 7-9 μm behind the anterior end, long slender spicules (3.8-5.1 abd long) and a complex gubernaculum with lateral pieces.
A key to the species of *Molgolaimus* is provided.
Key words: marine nematodes, systematics, Molgolaiminae, Indian Ocean.

Resumé

Six nouvelles espèces du genre *Molgolaimus* DITLEVSEN, 1921 sont décrites de l'Océan Indien. *Molgolaimus abyssorum* n.sp. est caractérisée par un corps assez petit, les amphides près de l'extrémé antérieure, les spicules courts et courbés et l'absence de papilles pré-cloacales. *Molgolaimus tyroi* n.sp. est caractérisée par un corps court, les amphides près de la tête, longues spicules courbés deux fois et une ou deux papilles pré-cloacales. *Molgolaimus gazii* n.sp. est caractérisée par une tête étroite et des amphides larges; spicules étroites avec la partie proximale parallel avec l'axe du corps et la partie distale courbée. *Molgolaimus sabakii* n.sp. est caractérisée par une tête étroite, par une dimorphisme sexuelle dans les mesures des amphides et par des spicules étroites et très longues; deux papilles pré-cloacales. *Molgolaimus kiwayui* n.sp. est caractérisée par une tête avec une constriction entre la tête et la corps, les amphides près de la partie antérieure et par les spicules très courts. *Molgolaimus tanai* n.sp. a les soies céphaliques à une distance de 5-6 μm de la tête et les amphides à 7-9 μm de la tête; spicules étroites et longues; gubernaculum avec des pieces latérales assez complexes. Une clé d'identification pour les espèces de *Molgolaimus* est proposée.
Mots-clés: nématodes marins, systématique, Molgolaiminae, l'Océan Indien.

Introduction

This work is part of the Netherlands Indian Ocean Programme of 1992 cruise A1 and A2 of the R. V. *Tyro*. The aim of the Nertherlands Indian Ocean programme was to assess the monsoon effects along the Kenyan coastal ecosystems where both pelagic and benthic systems were studied. Benthic sampling was done to provide, among others, quantitative samples, which will be investigated for nematode community structure at a later phase.
Molgolaimus is one of the genera most represented in the Indian Ocean samples. The genus is represented by at least six different species at all depths from 21 m to 2000 m. The genus, until recently was in the family Microlaimidae. Jensen (1978), erected the family Molgolaimidae with two sub-families: Aponematinae for the single genus *Aponema* and Molgolaiminae for the genera *Molgolaimus* and *Prodesmodora*.
On the basis of the presence of a single anterior testis and reflexed ovaries, Lorenzen (1981) placed the subfamily Molgolaiminae under the family Desmodoridae and transferred the genus *Aponema* back to Microlaimidae and *Prodesmodora* to Prodesmodorinae leaving *Molgolaimus* the only genus under the sub-family. Platt & Warwick

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(1988) agrees with the arguments of Lorenzen (1981). So far the genus has seventeen species including six new to science that are described in this paper. The key of Jensen (1978) is also adapted and modified to accomodate all the species so far described.

Materials and Methods

The Indian Ocean samples were taken off the Kenyan coast on four transects from North to South: Kiwayu, Tana, Sabaki and Gazi (Table 1). Sampling was done using a box corer from which two subsamples were taken to a depth of 5cm using a plastic core of diameter 2.6 cm. Nematodes were transferred slowly to glycerine. Drawings were made with the aid of a camera lucida on a Leitz DIAPLAN microscope.
Type specimens are deposited in the collection of Koninklijk Belgisch Instituut voor Natuurwetenschappen (KBIN) of Brussels (slide numbers 507-516) and the Marine Biology section of the University of Gent (MBRUG) (slide numbers 10309-10326).

Abbreviations

The abbreviations used in the text are: a: body length divided by maximum body diameter, b: body length divided by pharyngeal length, c: body length divided by tail length, c': tail length divided by anal body diameter, abd: anal body diameter, cbd: corresponding body diameter, hd: head diameter measured at the widest part of the head region (or at the level of the cephalic setae when cephalic setae are on the head region), L: body length, M: maximum body diameter, spic: spicule length, V%: position of vulva as a percentage of body length from anterior, v: vulva distance from the anterior

Formula:
distance from the anterior to;

head	end of the pharynx	M (v)	anus
	cbd		

All measurements are in micrometers, all curved structures are measured along the arc.

Molgolaimus abyssorum n. sp.
(Fig. 1 A-F)

TYPE MATERIAL

Five males and one female on slide no. 507, 508, 512, 10309-10311.

TYPE LOCALITY (Table 1)

Holotype ♂ and allotype ♀ from st 105, other males from st. 120, 107, 119, 118.

MEASUREMENTS

σ'_1	–	60	M	290	342
	5	14	14	10	

a: 24.0; b: 5.7; c: 6.6; spic: 20

φ_1	–	55	136	245	292
	5	14	16	11	

a: 18.0; b: 5.3; c: 6.2; V: 46%

σ'_2-σ'_5 L: 287-370; a: 20.5-24.0; b: 4.8-5.7; c: 6.1-7.4; spic: 18-23

Table 1: Location of the sampling stations

Date	Station	Latitude S	Longitude E	Depth (m)
20/ 6/92	103	04°.25'.83"	39°.33'.58"	62
22/ 6/92	105	04°.24'.06"	39°.45'.99"	511
23/ 6/92	106	04°.20'.35"	40°.21'.70"	1000
23/ 6/92	107	04°.21'.83"	41°.13'.16"	2053
27/ 6/92	114	03°.10'.27"	40°.17'.02"	213
28/ 6/92	117	03°.08'.21"	40°.41'.80"	500
29/ 6/92	118	03°.08'.46"	41°.01'.77"	1112
29/ 6/92	119	03°.10'.67"	41°.14'.20"	2007
30/ 6/92	120	02°.42'.20"	40°.31'.18"	21
23/11/92	528	02°.04'.76"	41°.17'.40"	37
4/ 7/92	131	02°.00'.27"	41°.26'.62"	500
6/ 7/92	136	02°.40'.05"	41°.10'.17"	992

DESCRIPTION

Males: Body cylindrical, narrower in head region and conical cylindrical tail end (Fig. 1D).
Cuticle faintly striated, striations bearly visible. Somatic setae not seen. Cephalic setae short (2 μm long) situated 1-2 μm from the anterior end. Amphids circular, small, 2-3 μm (33-50%) in diameter and located immediately posterior of cephalic setae (Fig. 1C).

Fig. 1. – *Molgolaimus abyssorum* n. sp. and *Molgolaimus tyroi* n. sp. A-E *Molgolaimus abyssorum* n. sp.
A: ♂1 pharyngeal region; B: ♀1 total view; C: ♂1 head region (superficial); D: ♂1 total view; E: ♂1 tail; F: ♀1 tail; G-L *Molgolaimus tyroi* n. sp.; G: ♂1 pharyngeal region; H: ♀1 pharyngeal region; I: ♀1 total view; J: ♂1 tail; K: ♀1 tail; L: ♂1 total view.

Stoma tubular with slightly sclerotized walls and surrounded by pharyngeal muscles on most of the length. Pharynx cylindrical with a well developed terminal bulb with sclerotized valves. Nerve ring located at 60% of the length of the pharynx from the anterior. Ventral gland and its opening were not seen. Cardia 8-9 μm long. Pharyngeal region with pigments just below the cuticle (Fig. 1A).
Reproductive system monorchic with outstretched testis located at the left of the intestine. Spicules arcuate with a short distal part parallel to the body axis. Gubernaculum surrounds the proximal end of the spicules. No pre-cloacal supplements (Fig. 1E).
Tail conico-cylindrical with a pointed tail tip (probably the spinneret), 47-56 μm long (c'= 4.7-5.5). Caudal glands arranged in tandem (Fig. 1E).

Female: Similar to males (Fig. 1B & F). Reproductive system amphidelphic with reflexed ovaries, both anterior and posterior to the right of the intestine. Two short ovaries with a developed ovum on each side and a small germinal zone. No sperm cells or spermatheca in the uterus. Vulva and vagina simple.

DIFFERENTIAL DIAGNOSIS

Molgolaimus abyssorum n. sp. is characterised by a small body (L = 287-370 μm); faint cuticular striations; amphids circular, small (2-3 μm in diameter) and located close to the anterior end; spicules short (2 × abd) and slightly curved on the proximal end and no pre-cloacal supplements.
Molgolaimus abyssorum n. sp. resembles *Molgolaimus minutus* (JENSEN, 1978) in de Man ratios but differs from it in the position of the amphids (7 μm behind the anterior end in *M. minutus*), the spicules shape (distal tip is wide and open and curves dorsally in *M. minutus*), the presence of one or two pre-cloacal supplements in *M. minutus* and the shape of the gubernaculum.

Molgolaimus tyroi n. sp.
(Fig. 1 G-L)

TYPE MATERIAL

Four males and five females on slide no. 509, 510, 10312-10317.

TYPE LOCALITY (Table 1)

Three ♂s and two ♀s from st. 106, three ♀s and one ♂ from st. 105, two ♀s from st. 117 and 119.

ETYMOLOGY

Species is named after R. V. *Tyro*, the Dutch research vessel used for this sampling.

MEASUREMENTS

$♂_1$	–	51	M	200	237
	4	11	11	10	

a: 21.6; b: 4.7; c: 6.4; spic: 29

$♀_1$	–	50	136	250	280
	4	13	15	8	

a: 18.7; b: 5.6; c: 9.3; V: 49

$♂_2$-$♂_4$: L: 213-222; a: 17.8-20.1; b: 3.8-4.5; c: 5.8-6.3; spic: 30-32

$♀_2$-$♀_5$: L: 225-290; a: 15.9-19.3; b: 4.0-5.6; c: 7.2-9.0 V: 48-59%

DESCRIPTION

Males: Body cylindrical, attenuated on both ends but more so at tail end (Fig. 1L). Cuticular striations and somatic setae not observed. Four cephalic setae located close to the anterior end. Amphids circular, 60% cbd, faint and located at 4 μm behind the anterior end. Stoma narrow with slightly sclerotized walls, surrounded by the pharyngeal muscles on almost the entire length.
Pharynx cylindrical, with a well developed terminal bulb. Nerve ring, ventral gland and its opening not seen. Cardia long (5-6 μm) and prominent (Fig. 1G).
Reproductive system monorchic with outstretched testis located at the left of the intestine. Spicules thin, long (3 × abd) and curved twice. Single pre-cloacal supplement at 14-19 μm in front of the cloaca, however in some males there is a faint impression of another supplement at 10-11 μm from the cloaca. Gubernaculum very small and faint (Fig. 1J).
Tail conical with a posterior (10-15 μm) cylindrical part (c' = 3.2-3.7).

Females: Similar to males (Fig. H, I & K). Reproductive system amphidelphic with reflexed ovaries, anterior ovary to the left and posterior to the right of the intestine. Each ovary has a single mature ovum and a short germinal zone. Vulva and vagina simple.

DIFFERENTIAL DIAGNOSIS

Molgolaimus tyroi n. sp. is characterised by its small body size (L = 225-290 μm); amphids close to the anterior end

(4 μm behind anterior); long (3 × abd) thin spicules curved twice and one or two pre-cloacal supplements. *Molgolaimus tyroi* is similar to *M. abyssorum* sp. n. in size (L is about 300 μm) but differs from it in the shape of spicules (double curved).

Molgolaimus gazii n. sp.
(Fig. 2 A-E)

TYPE MATERIAL

Three males and two females on slide nos. 511-512, 10318, 10319.

TYPE LOCALITY (Table 1)

Holotype σ_1 from station 119, two males from st. 106, females from st. 103 and 120.

ETYMOLOGY

Name of the species given after Gazi, one of the sampling sites.

MEASUREMENTS

σ_1	–	69	M	311	385
	5	15	18	13	

a: 27.5; b: 5.6; c: 6.0; spic: 29

φ_1	–	69	173	366	435
	5	14	14	10	

a: 31.1; b: 6.3; c: 6.3; V: 40%

σ_2-σ_3 L: 382-430; b:23.9; c: 6.0-6.1; spic: 29

φ_2 L: 389; a: 25.9; b: 6.1; c: 5.6; V: 42 %

DESCRIPTION

Males: Body cylindrical, narrow anterior and elongated cylindrical tail end (Fig. 2B). Head region slightly set off with a constriction. Cuticle faintly striated. No somatic setae observed.
Four short cephalic setae, located behind the head constriction (Fig. 2A). Amphids circular and very faint, 7 μm in diameter (70% cbd), 13-15 μm (2.6-3.0 × hd) behind the anterior end. Stoma narrow with sclerotized walls and surrounded by the pharyngeal muscles on most of the length (Fig. 2C).
Pharynx cylindrical with a well developed muscular terminal bulb which has sclerotized valves. Nerve ring and the opening of the ventral gland not seen. Ventral gland located at pharyngo-intestinal junction. Cardia short (4-5μm) but prominent (Fig. 2B).
Reproductive system monorchic with outstretched testis located to the left of the intestine. The germinal zone is short, posterior of which are spermatozoa arranged in clusters, and the vas deferens is long. Spicules thin, long (2.2-2.9 × abd) with poorly developed capitulum, they are parallel to the body axis on the anterior 1/3 and curved on the posterior 2/3. Gubernaculum very faint. Two pre-cloacal supplements at 18-20 and 30-32 μm from the cloacal opening (Fig. 2E).
Tail 2/3 conical and posterior 1/3 cylindrical with a short spinneret (c' = 5.5-7.7).

Females: Similar to males in most aspects. The amphids however, are smaller in diameter, 5 μm (55% cbd) (Fig. 2D).
Reproductive system amphidelphic with reflexed ovaries. The anterior ovary to the left, posterior to the right of the intestine. Each ovary is short with a single mature ovum and a short germinal zone. Uterus may have spermatozoa placed singly. Vulva and vagina simple.

DIFFERENTIAL DIAGNOSIS

Molgolaimus gazii n. sp. is characterised by a narrow anterior end with the head region slightly offset; sexual dimorphism in amphids that are located at 2.6-3.0 × hd behind the anterior end; thin, long (2.2-2.9 × abd) spicules with anterior one third parallel to the body axis and posterior two thirds of its length curved and with two pre-cloacal supplements.
Molgolaimus gazii n. sp. resembles *Molgolaimus allgeni* (GERLACH, 1950) JENSEN, 1978 and *M. typicus* Furstenberg & Vincx, 1992 in the shape of copulatory apparatus and the presence of two pre-cloacal supplements and *Molgolaimus sabakii* n. sp. in the presence of two pre-cloacal supplements. *Molgolaimus gazii* can be distinguished from *M. allgeni* by the measurements and ratios (*M. allgeni* is a larger nematode), the arrangement of the spermatozoa in the testis (triangular clusters in *M. allgeni*) and the shape of the tail and the lack of prominent sclerotization on the vagina. It can be distinguished from *M. typicus* by the position of the cephalic setae (located at the level of head constriction) and size (40% cbd) of the amphids; and from *Molgolaimus sabakii* by the position of the amphids (3.4-4.0 × xhd in *Molgolaimus sabakii*), length (3.1-34 × abd in *Molgolaimus sabakii*) and shape (1/2 parallel to the body axis and 1/2 curved) of the spicules and the position of the pre-cloacal supplements (both supplements within the spicular region in *Molgolaimus sabakii*).

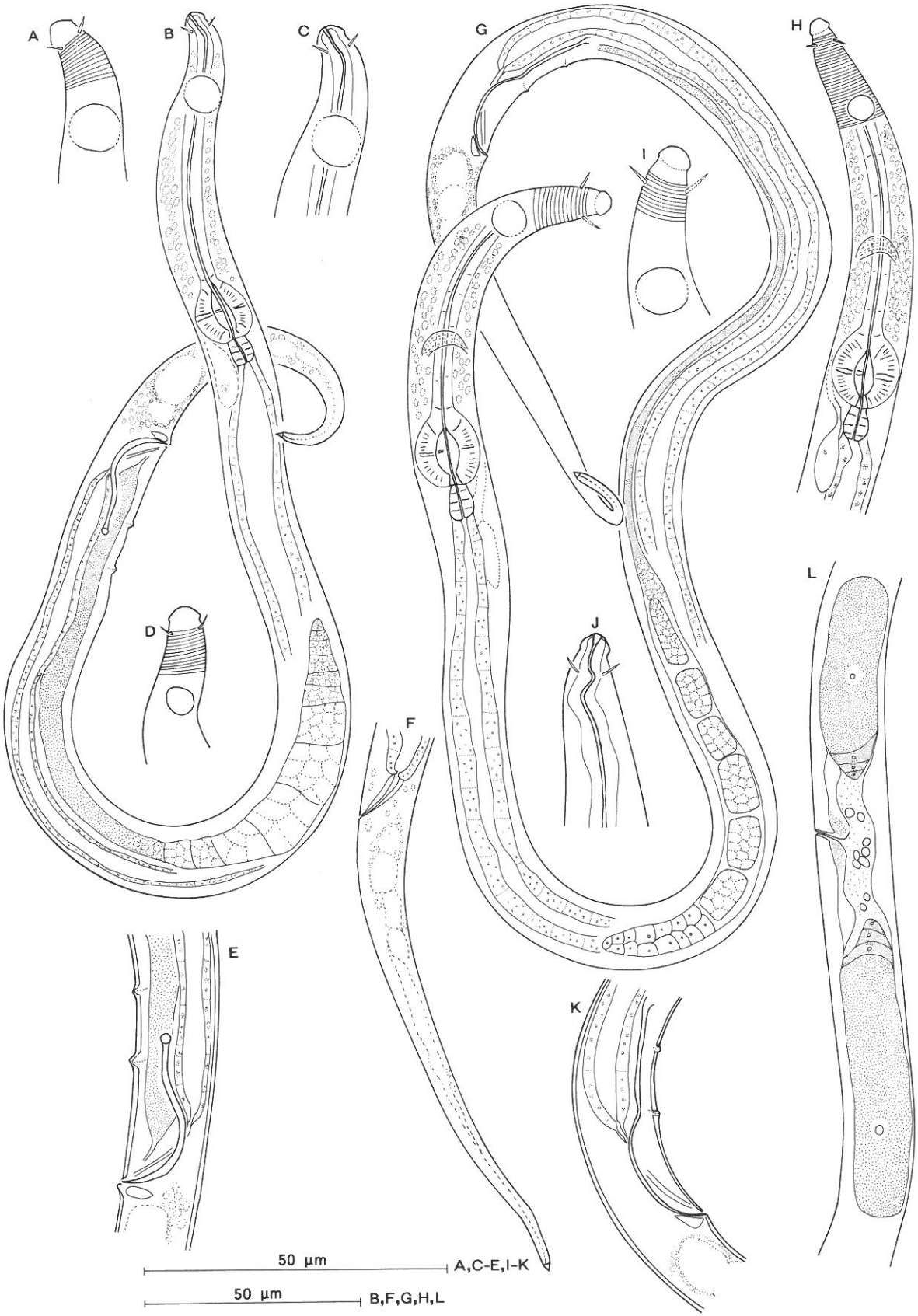

Fig. 2. – *Molgolaimus gazii* n. sp. and *Molgolaimus sabakii* n. sp.
A-E: *Molgolaimus gazii* n. sp.; A: ♂1 head region; B: ♂1 total view; C: ♂1 head region (section); D: ♀1 head region; E: ♂1 spicule; F-L *Molgolaimus sabakii* n. sp.; F: ♀1 tail; G: ♂1 total view; H: ♀1 pharyngeal region; I: ♂1 head region; J: ♂2 head region (section); K: ♂1 spiculesL: ♀1 reproductive system.

Molgolaimus sabakii n. sp.
(Fig. 2 F-L)

TYPE MATERIAL

Six males and one female on slide no. 513, 514, 10320-10323.

TYPE LOCALITY

Four males from station 105, two males from station 106 and 136, female from st. 119.

ETYMOLOGY

Name of the species given after Sabaki, one of the sampling sites.

MEASUREMENTS

σ_1	–	90	M	528	641
	5	16	16	13	

a: 40.1; b: 7.1; c: 5.8; spic: 44 μm

φ_1	–	90	229	469	578
	5	18	16	12	

a: 36; b: 6.4; c: 5.3; V: 40%

σ_2-σ_6 L:497-611; a:31.1-40.7; b:5.8-7.3; c:4.4-6.0; spic:37-40

DESCRIPTION

Males: Body cylindrical, head region narrower and set off from the rest of the body by a constriction; conico-cylindrical tail (Fig. 2G).
Cuticle faintly striated and begins at the level of the constriction. No somatic setae observed. Four cephalic setae 4 μm long and situated within the striations. Amphids circular 7-8 μm (70-80% cbd) in diameter and situated at 15-20 μm (3.4-4.0 × hd) from the anterior end (Fig. 2F) (in two males amphids are 12 μm from the anterior end, however the pharynx appear to be contracted (Fig. 2J) probably contracting the cuticle as well and thereby pulling the amphids more anteriorly). Stoma narrow.
Pharynx cylindrical with a well developed terminal bulb which has cuticularized valves. The nerve ring surrounds the pharynx at 60% of the length of pharynx from the anterior. Ventral gland opening not seen. Ventral gland located posterior of the pharyngo-intestinal junction (Fig. 2G).
Cardia 7-8 μm long and conspicuous.
Reproductive system monorchic with outstretched testis located at the left of the intestine. Short testis, spermatozoa grouped in clusters and long vas deferens. Spicules long (3.1-3.4 × abd) and thin, anterior half is straight (parallel to the body axis) and the posterior half is arcuate. Capitulum poorly developed and partly or completely open at the distal tip. Gubernaculum small and simple. Two pre-cloacal supplements situated at 12-23 and 20-33 μm anterior of the cloaca (Fig. 2K). Tail is conical with an elongate cylindrical posterior end.

Female: Similar to males in most aspects (Fig. 2H & F). However, amphids smaller in diameter (6 μm or 55% cbd). Reproductive system amphidelphic with reflexed ovaries, anterior to the left, posterior to the right of the intestine. Ovaries short, with a single mature ovum on each side and a short germinal zone. The uterus may have spermatozoa but there is no spermatheca. Vulva and vagina simple (Fig. 2L).

DIFFERENTIAL DIAGNOSIS

Molgolaimus sabakii n. sp. is characterised by narrow anterior end; sexual dimorphism in size of amphids [wide amphids in males (70-80% cbd), smaller in females (55% cbd)] located at 17-20 μm behind the anterior end; spicules that are thin and long (3.1-3.4 abd) and have the anterior half being straight and the posterior half curved; two ventral pre-cloacal supplements located within the spicule region.
Molgolaimus sabakii n. sp. resembles *Molgolaimus allgeni* (GERLACH, 1950) Jensen 1978 in the shape of the spicules and *Molgolaimus gazii* n. sp. in the number of pre-cloacal supplements. *Mogolaimus sabakii* differs from *M. allgeni* in the arrangement of the spermatozoa in the testis (triangular clusters in *M. allgeni*), length of the spicules (2.0-2.4 × abd in *M. allgeni*) and the absence of a clearly sclerotized vagina. It differs from *Molgolaimus gazii* in the position of the amphids which are 13-15 μm (2.6-3.0 × hd) behind the anterior end in *Molgolaimus gazii*; in the shape (1/3 anterior part is parallel to the body axis and 2/3 is curved in *Molgolaimus gazii*) and size (2.2-2.4 × abd long in *Molgolaimus gazii*) of the spicules and the position of the pre-cloacal supplements in relation to the spicules (only the posterior supplement is situated within the spicular region in *Molgolaimus gazii*).

Molgolaimus kiwayui n. sp.
(Fig. 3 A-F)

TYPE MATERIAL

Two males and one female on slide no. 515, 10324.

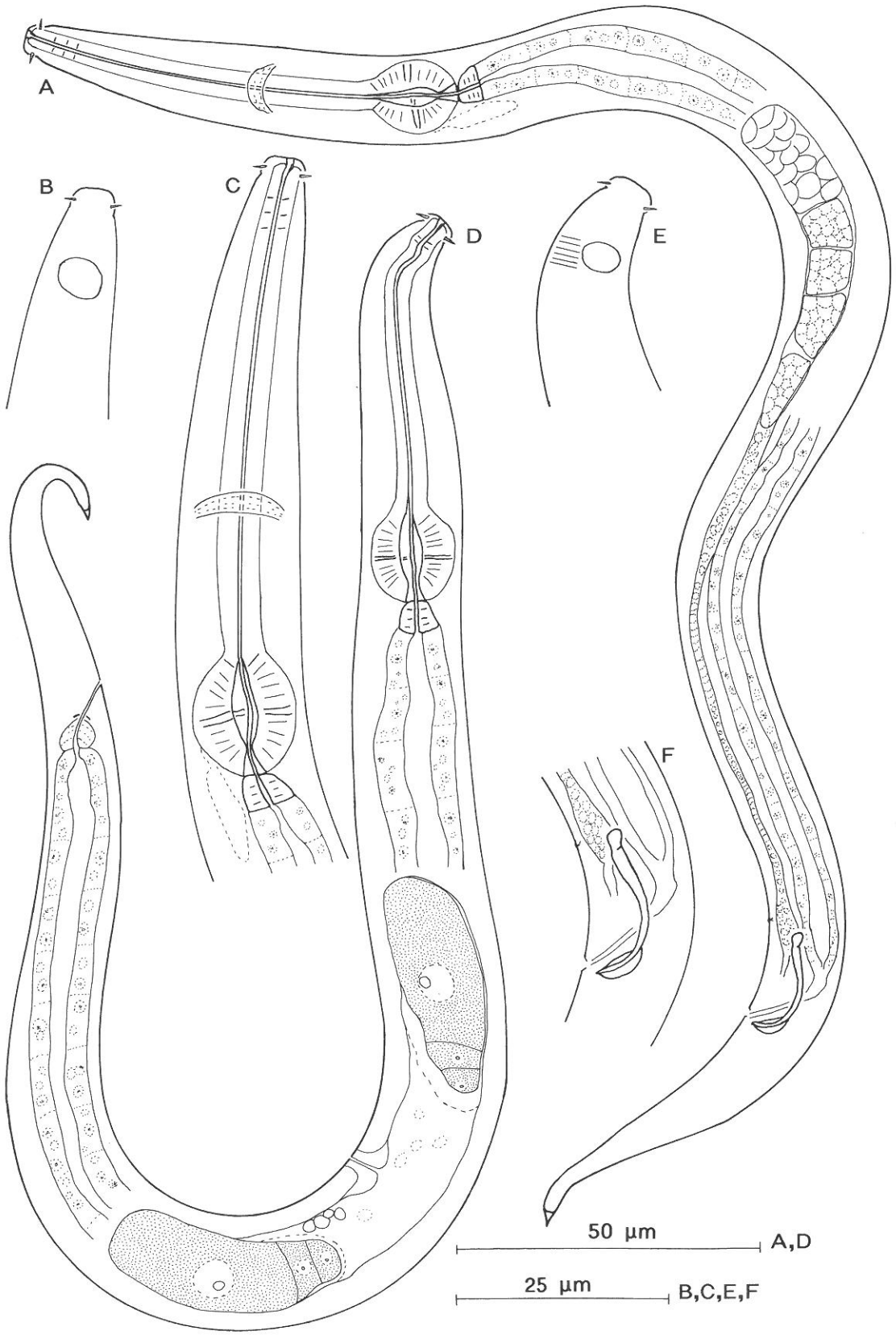

Fig. 3. – *Molgolaimus kiwayui* n. sp.
A: ♂1 total view; B: ♂1 head region; C: ♂1 pharyngeal region; D: ♀1 total view; E: ♀1 head region; F: ♂1 spicules.

TYPE LOCALITY (Table 1)

Station 131.

ETYMOLOGY

Name of the species given after Kiwayu, one of the sampling sites.

MEASUREMENTS

♂1	–	69	M	249	289
	5	15	16	12	

a: 17.0; b: 4.2; c: 5.8; spic: 20

♂2	–	66	M	270	321
	6	16	16	13	

a: 20.1; b: 4.9; c:6.3; spic: 22

♀1	–	63	161	267	312
	5	17	20	10	

a: 15.7; b: 5.0; c: 6.8; V: 51%

DESCRIPTION

Males: Body cylindrical, blunt anterior end and narrow at the tail end (Fig. 3A). Head slightly off set by a fine constriction. Cuticular striations very faint. Somatic setae not seen. Four short cephalic sensilla (2 μm long) at the level of the constriction. Amphids 50-63% cbd in diameter, circular and faint, located at 6-8 μm (1-1.5 × hd) from the anterior end (Fig. 3B). Stoma narrow with a small dorsal tooth and the pharyngeal muscles surround most of its length.
Pharynx cylindrical with a well developed terminal bulb which has sclerotized valves. Nerve ring surrounds the pharynx at 56-59% of the length of the pharynx from the anterior. Opening of the ventral gland not seen. Ventral gland small at the level of the pharyngo-intestinal junction. Cardia (5 μm long) prominent (Fig. 3C).
Reproductive system monorchic with outstretched testis located at the left of the intestine. Testis short, spermatozoa grouped in clusters and long vas deferens (Fig. 3A). Spicules slightly curved with a capitulum. Gubernaculum simple. One (or two) pre-cloacal supplements at 16-19 μm in front of the cloaca (Fig. 3F). Tail conical with a posterior one third cylindrical part (c' = 3.9-4.6).

Female: Similar to males (Fig. 3D & E). Reproductive system amphidelphic, with reflexed ovaries, anterior branch to the left and the posterior to the right of the intestine. Each ovary has a single mature ovum and a short germinal zone. Vulva and vagina simple.

DIFFERENTIAL DIAGNOSIS

Molgolaimus kiwayui n. sp. is characterised by head region off set by a constriction, amphids that are 50-63 % cbd in diameter, located at 1.0-1.5 hd behind the anterior end, short slightly curved spicules which possess a capitulum; one or two pre-cloacal supplements.
Molgolaimus kiwayui n. sp. resembles *Molgolaimus turgofrons* (LORENZEN, 1972) JENSEN, 1978 in the shape of the head region, position of the amphids and the shape of the spicules,; it *Molgolaimus abyssorum* n. sp. in the body and spicules size and *M. minutus* JENSEN, 1978, in the position of the amphids from the anterior. It differs from *M. turgofrons* in measurements (L = 900-930 μm) and ratios (a = 34-40, b = 8.8-9.0, c = 7.8-8.8), longer cephalic sensilla and the gubernaculum has a dorsally directed apophysis in *Molgolaimus turgofrons*. *Molgolaimus kiwayui* differs from *Molgolaimus abyssorum* in the position of the amphids (6-8 μm or 1-1.5 × hd compared to 2-3 μm or 0.5 × hd respectively) from the anterior end and in the spicules which lacks a capitulum in the latter. *Molgolaimus kiwayui* differs from *M. minutus* in the shape of the anterior end (anterior attenuated in *M. minutus*) and the spicules (spicules open and curved dorsally at the distal end in *M. minutus*).

Molgolaimus tanai n. sp.
(Fig.4 A-F)

TYPE MATERIAL

Three males on slide no. 516, 10325, 10326.

TYPE LOCALITY (Table 1)

Station 528.

ETYMOLOGY

Name of the species given after Tana, one of the sampling sites.

MEASUREMENTS

♂1	–	104	M	597	684
	7	25	28	22	

a: 24.4; b: 6.6; c: 7.9; spic: 84

♂2-♂3: L: 538-721; a: 23.3-25.6; b: 5.4-7.1; c: 7.9-8.1; spic: 83-94

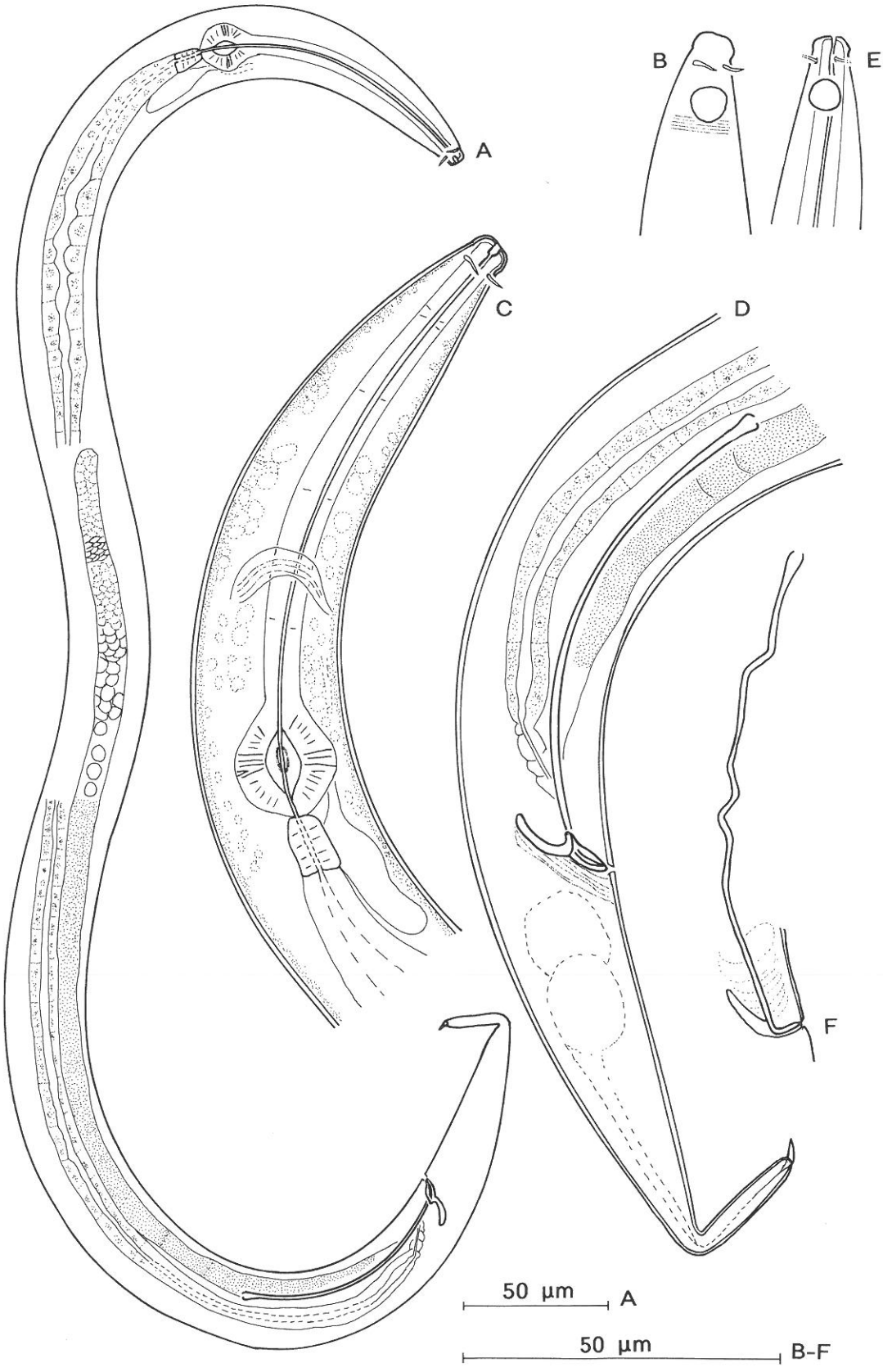

Fig. 4. – *Molgolaimus tanai* n. sp.
A: ♂1 total view; B: ♂1 head region; C: ♂1 pharyngeal region; D: ♂1 tail and spicules; E: ♂2 head region; F: ♂2 spicule.

DESCRIPTION

Body cylindrical, blunt anteriorly and pointed at the tail end. Head slightly off set with a small constriction (Fig. 4A & 4E). Cuticle very faintly striated (Fig. 4B). Somatic setae not seen. Cephalic setae are 2-3 μm long and 4-6 μm from the anterior end. Amphids circular 50-55% cbd and 7-9 μm from the anterior end. Stoma narrow with sclerotized walls, surrounded by the pharyngeal muscles on most of the length (Fig. 4C).
Pharynx cylindrical with a well developed terminal bulb, which has sclerotized valves. Nerve ring surrounds the pharynx at 57-68% of the length of the pharynx from the anterior. Opening of the ventral gland not seen. Ventral gland is long and located at the level of the cardia. Cardia (8-9 μm) prominent (Fig. 4C).
Reproductive system monorchic with outstretched testis, located ventrally to the intestine with only a slight overlap. Spicules, thin, long (3.8-5.1 abd long) and straight, but in one specimen, they were sinusoid (Fig. 4F). Gubernaculum (12-18 μm long) complex with lateral pieces (Fig. 4D). Tail conical with a short (32-41%) posterior cylindrical part (c' = 4.0- 4.8).

Females not found.

DIFFERENTIAL DIAGNOSIS

Molgolaimus tanai n. sp. is characterised by its cephalic setae (2-3 μm long) located at 5-6 μm and amphids (50-55% cbd in diameter) located 7-9 μm behind the anterior end, long slender spicules, 3.8-5.1 abd long / may be sinusoid and a complex gubernaculum with lateral pieces and lacks supplements.
Molgolaimus tanai n. sp. resembles *Molgolaimus tenuispiculum* (DITLEVSEN, 1921) JENSEN, 1978 in the shape of the head region and the position of the amphids, long slender spicules and *Molgolaimus parallgeni* (VITIELLO, 1973) JENSEN, 1978 in having long slender spicules. It differs from the former in the measurements e.g. body length (L= 995-1175 μm) and the de Man ratios (a = 27-33, b = 8.7-9.7, c = 8.0-8.7) in *Molgolaimus tenuispiculum* and from the latter in the tail shape, conical cylindrical with a swollen tip in *M. parallgeni.*

Key to species of the genus *Molgolaimus*

1.a. Spicules short (< 3 × abd long) 2
b. Spicules long (> 3 × abd long) 9

2.a. One or two pre-cloacal supplements present 3
b. No pre-cloacal supplements 7

3.a. Spicules 1 × abd long 4
b. Spicules > 1 × abd long 5

4.a. Body length < 500 μm, cephalic setae (setiform papillae) inserted at the level of head constriction, amphids located at 1.3 × hd behind the anterior end *M. citrus* (GERLACH, 1959), JENSEN 1978
b. Body length > 1000 μm, cephalic setae (4.5-5.0 μm or 0.5 × hd long) inserted behind head constriction, amphids 1.4 × hd behind anterior end
M. cuanensis (PLATT, 1973) JENSEN, 1978
c. Body length > 1000 μm, cephalic setae (6 μm or 0.6 × hd long) inserted at the head constriction, amphids located just posterior of the head constriction*M. parallgeni* (VITIELLO, 1973) JENSEN, 1978

5.a. Body length < 500 μm 6
b. Body length > 500 μm, cephalic setae (3 μm long) inserted at the head constriction or just behind it, amphids located at 1-1.3 hd behind anterior end, spicules 1.9-2.4 × abd long
M. allgeni (GERLACH, 1950) JENSEN, 1978

6.a. Cephalic setae inserted in front of the head constriction, amphids located at 1-1.5 × abd behind anterior end, spicules 1.7 × abd long *M. kiwayui* sp. n.
b. Cephalic setae inserted behind head constriction, amphids located at 2.6-3.0 × hd behind anterior end, spicules 1.7 × abd long *M. gazii* sp. n.
c. Cephalic setae inserted at the head constriction or just posterior of it, amphids situated at 1.4 × hd behind anterior end, spicules 1.9-2.1 × abd long
M. minutus JENSEN, 1978
d. Cephalic setae inserted at the level of the head constriction, amphids located at 2.5 × hd behind the anterior end, spicules 2.7 × abd long
M. typicus FURSTENBERG & VINCX, 1992

7.a. Body length < 400 μm, spicules 2 × abd long
M. abyssorum sp. n.
b. Body length > 600 μm 8

8.a. Spicules 1.4-1.5 × abd, gubernaculum with a curved apophysis
M. turgofrons (LORENSEN, 1972) JENSEN, 1978
b. Spicules 1 × abd, gubernaculum without an apophysis
M. lazonus (VITIELLO, 1971) JENSEN, 1978

9.a. One or two pre-cloacal supplements present 10
b. No pre-cloacal supplement present 12

10.a. Body length > 400 μm 11
b. Body length < 300 μm *M. tyroi* sp. n.

11.a. Spicules > 5 × abd long, amphids situated at 1 × hd behind the anterior end
M. tenuispiculum (DITLEVSEN, 1921) JENSEN, 1978
b. Spicules 3 × abd long, amphids situated at 3-4 × hd behind anterior end *M.sabakii* sp.n.

12.a. Body length 700 μm, cephalic setae, 3 μm long, close to anterior end, amphids 70% cbd and located posterior of the head region, spicules > 8 × abd long, tail (5-7 abd long) conico-cylindrical with a swollen tip*M. longispiculum* (TIMM, 1961) JENSEN, 1978
b. Body length 500-600 μm, cephalic sensilla located in front of the head constriction, amphids located at 1.7 × hd behind anterior end, spicules 3 × abd long, tail conico-cylindrical with a swollen tip
M. demani (DE MAN, 1922) JENSEN, 1978
c. Body length 500-700 μm, cephalic sensilla located behind the head constriction, amphids located around 1-1.3 × hd behind the anterior end, spicules 3.8-4.3 × abd long, tail conico-cylindrical with pointed tip *M. tanai* sp. n.

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