

Desmoscolecids from sublittoral fine-sand of Pierre Noire (West Channel) (Nematoda, Desmoscolecida)

by Wilfrida DECRAEMER *

Résumé. — *Desmoscolecides des sables fins infralittoraux de la Pierre Noire (Manche Occidentale) (Nematoda, Desmoscolecida)*. — L'article concerne les Desmoscolecides des sables fins infralittoraux de la Pierre Noire, baie de Morlaix (France). Deux nouvelles espèces sont décrites : *Hapto-tricoma boucheri* sp. nov. est caractérisée par 218-227 anneaux cuticulaires, chaque anneau orné d'un cercle d'écaillés, et par la présence, dorsalement et ventralement, de deux longues soies glandulaires du côté droit du corps et de trois soies glandulaires du côté gauche du corps ; *Desmoscolex roscoffiensis* sp. nov. se distingue de toutes les espèces connues par la forme des soies céphaliques, fines, longues, flanquées d'une membrane et par la disposition des soies somatiques, caractérisée par l'absence de soies subventrales sur l'anneau 15. Une redescription ou des informations complémentaires sont données sur *Tricoma islandica* Kreis, 1963, *T. polydesmus* (Southern, 1914) Steiner, 1916 ; *T. steineri* de Man, 1922 ; *Desmoscolex deconincki* Decraemer, 1975 ; *D. geraerti* Decraemer, 1975, et *D. longisetosus* Timm, 1970.

Abstract. — The present paper deals with a study of desmoscolecids inhabiting the sublittoral fine-sand of Pierre Noire, bay of Morlaix (France). Two new species are described : *Hapto-tricoma boucheri* sp. nov. characterized by 218-227 body rings, each ring provided with a ring of scales and by two large glandular setae dorsally and ventrally on the right body side and three glandular setae dorsally and ventrally on the left body side : *Desmoscolex roscoffiensis* sp. nov. is distinguished from all known species by the shape of the cephalic setae : fine, long, bearing a flag-like membrane and by its setal pattern, lacking subventral setae on main ring 15.

A redescription or additional information are presented on *Tricoma islandica* Kreis, 1963 ; *T. polydesmus* (Southern, 1914) Steiner, 1916 ; *T. steineri* de Man, 1922 ; *Desmoscolex deconincki* Decraemer, 1975 ; *D. geraerti* Decraemer, 1975, and *D. longisetosus* Timm, 1970.

INTRODUCTION

In spite of their abundance the marine nematodes from the coasts of Brittany (France) have rarely been studied (LUC & DE CONINCK, 1959). Only recently a study of this fauna was started by Guy BOUCHER. Among the nematodes from this region the desmoscolecids, a small group of rather peculiar nematodes, were never reported nor described.

This paper deals with desmoscolecids from a station of the western part of the English Channel, near Roscoff. The material was kindly put at my disposal by G. BOUCHER, during my stay at the "Station Biologique, Roscoff", in June 1977. This study on the Desmoscolecida fits into BOUCHER's study of the marine nematodes from the English Channel (1975, 1976, 1977).

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Two new species are described : *Haptotricoma boucheri* sp. nov. and *Desmoscolex roscoffiensis* sp. nov. Six known species : *Tricoma islandica*, *T. polydesmus*, *T. steineri*, *Desmoscolex deconincki*, *D. longisetosus* and *D. geraerti* are discussed.

MATERIAL AND METHODS

The specimens were found in samples that came from a station situated nord-nordwest from the buoy of Pierre Noire in the bay of Morlaix (France). The samples were taken by a diver with the help of "carottes" (cylinders of 2.7 cm in diameter and 12-15 cm in length); they were fixed with 5 % formaldehyde in seawater. Per season one sampling took place. For more details see BOUCHER (1975).

For the transfer from fixative into pure glycerin the method of SEINHORST (1959) was followed.

All type material and other specimens are deposited in the collection of the Muséum national d'Histoire naturelle, Paris.

LIST OF SPECIES FOUND TOGETHER WITH DATES OF SAMPLING

Subfamily Desmoscolecinae Shipley, 1896.

- Desmoscolex roscoffiensis* sp. nov. : 23.V.1973.
- D. deconincki* Decraemer, 1975 : 23.V.1973.
- D. longisetosus* Timm, 1970 : 24.VIII.1973.
- D. geraerti* Decraemer, 1975 : 23.V.1973.
- D. sieverti* Freudenhammer, 1975 : 23.V.1973.
- D. americanus* Chitwood, 1936 : 24.VIII.1973.
- Desmoscolex* sp. 1 : 23.V.1973.
- Desmoscolex* sp. 2 : 23.V.1973.

Subfamily Tricominae Lorenzen, 1969.

- Haptotricoma boucheri* sp. nov. : 23.V.1973.
- Quadricoma noffsingeriae* Decraemer, 1977 : 23.V.1973.
- Quadricoma* sp. 1 : 5.III.1973.
- Quadricoma* sp. 2 : 23.V.1973.
- Tricoma brevirostris* (Southern, 1914) Steiner, 1916 : 23.V.1973, 24.VIII.1973.
- T. islandica* Kreis, 1963 : 27.XI.1972, 23.V.1973, 5.III.1973.
- T. longirostris* (Southern, 1914) Steiner, 1916 : 23.V.1973, 24.VIII.1973.
- T. polydesmus* (Southern, 1914) Steiner, 1916 : 23.V.1973.
- T. steineri* de Man, 1922 : 27.XI.1973.
- Tricoma* sp. 1 : 23.V.1973.
- Tricoma* sp. 2 : 23.V.1973.
- Tricoma* sp. 3 : 23.V.1973.
- Tricoma* sp. 4 : 24.VIII.1973.

The unnamed species are not dealt with in this paper because of insufficient and (or) poorly preserved material.

EXPLANATIONS OF ABBREVIATIONS USED

a w, anal body width ; a pr spic, anterior protractor spiculi ; bd vulva, body diameter at the level of the vulva ; c s, length of cephalic setae ; ej gl, ejaculatory gland ; gub, length of gubernaculum ; hd, maximum head dimensions (width by length) ; L, length of body ; mbd, maximum body diameter ; (mbd), maximum body diameter (foreign material not included) ; nr, position nerve ring from anterior body end ; oes, length of oesophagus ; p pr spic, posterior protractor spiculi ; p gub, protractor gubernaculi ; r spic, retractor spiculi ; sd_n, length of subdorsal setae on main ring n ; sl_n, length of sublateral setae on main ring n ; s m, somatic muscles ; sp₁, anterior spermatheca ; spic, length of spicules, measured along the median line ; sv_n, length of subventral setae on main ring n ; t, tail length ; te₁, anterior testis ; te₂, posterior testis ; tmr, length of terminal ring ; tmrw, width of terminal ring (foreign material not included) ; tsd, terminal subdorsal setae ; L vulva, distance of vulva from anterior body end.

All measurements are in micrometers (μm).

DESCRIPTIONS

Subfamily DESMOSCOLECINAE Shipley

Genus **DESMOSCOLEX** Claparède

Desmoscolex Claparède, 1863 : 59.

Desmoscolex roscoffiensis sp. nov.

(Fig. 1 A, B)

MATERIAL : 1 ♂ holotype : nr. AN 201.

MEASUREMENTS : *Holotype* ♂ : L = 165, hd = 13 × 11, cs = 16, sd₁ = 13, sd₃ = 12, sd₅ = 11, sd₇ = 11, sd₉ = 11, sd₁₁ = 13, sd₁₃ = 15, sd₁₆ = 19, sd₁₇ = 30, sv₂ = 9, sv₄ = 9.5, sv₆ = 8, sv₈ = 8, sv₁₀ = 8, sv₁₂ = 8, sv₁₄ = 9, t = 40, tmr = 25, spic = 21, gub = 9.5, oes = 24, mbd = 25, (mbd) = 20.

DESCRIPTION

Male : Body very small, tapered towards the extremities : slightly anteriorly, more pronounced in tail region. Cuticle consisting of 17 main rings, separated from each other by narrower or equally broad interzones composed of 2 secondary annules. Each main ring consisting of a rather transparent and finely granular desmos covering three somewhat deformed, narrow cuticular annules.

Somatic setae arranged as follows : subdorsal, left : 1, 3, 5, 7, 9, 11, 13, 16, 17 = 9 ; right : 1, 3, 5, 7, 9, 11, 13, 16, 17 = 9. — subventral, left : 2, 4, 6, 8, 10, 12, 14, — = 7 ; right : 2, 4, 6, 8, 10, 12, 14, — = 7.

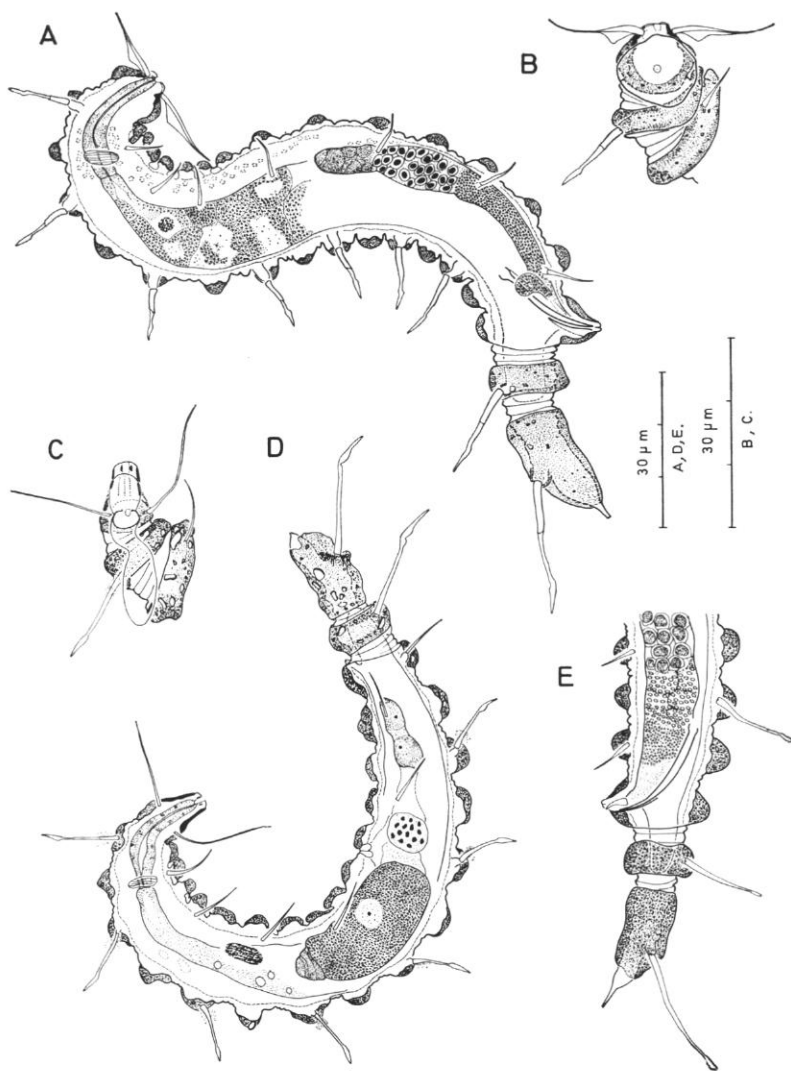


FIG. 1. — *Desmoscolex roscoffiensis* sp. nov., holotype male : A, entire specimen ; B, surface view of the head. *D. deconincki*, female from France : C, surface view of head ; D, entire specimen. *D. geraerti*, male from France : E, posterior body region.

This pattern differs from the typical one of 17-ring species (see TIMM, 1970) by the absence of subventral setae on main ring 15.

Subdorsal setae with a larger basal shaft, distally tapered towards a marked off lance-shaped end, slightly hooked in the terminal pair of setae. Pair of subdorsal setae on main ring 1 hardly longer than the following setae. From main ring 11 on, subdorsal setae becoming longer ; those on main ring 16 and especially those on the terminal main ring

being clearly elongated. Subventral setae fine, distally tapered towards a pointed tip ; all of a similar length, shorter than the subdorsal setae.

Head, somewhat wider than long, broadly rounded and anteriorly tapered towards a truncated end. Its cuticle being thickened and sclerotized in the narrower anterior part, on the rest of the head it is thin and non-sclerotized. From the level of the insertion of the cephalic setae the head cuticle is covered with secretion and finely granular foreign material except for the central region around the amphidial pore ; the labial region remains free of foreign material. No separate lips nor labial sensorial organs could be observed in side view.

Cephalic setae long and fine, bearing a thin flag-like membrane ; inserted far anteriorly on the head i.e. just behind the extreme anterior border.

Amphids large, vesicular, covering head almost completely : anteriorly reaching to insertion places of cephalic setae and posteriorly to anterior end of first main ring. Amphidial canal ending in a small pore in posterior half of head.

Stoma small and shallow. Oesophagus typical (cf. DECRAEMER, 1975). Nerve ring surrounding the oesophagus subterminally, opposite main ring 2. Oesophago-intestinal junction at anterior end of main ring 3. Narrow anterior ventricular intestinal region not clearly offset from intestine proper, a broad cylinder extended apparently to the posterior border of main ring 16, thus dorsally overlapping the rectum. Rectum protruding as a short tube from body wall in posterior half of conically swollen ventral side of main ring 15.

Ocelli dark-yellowish, globular, situated opposite main ring 4.

Reproductive system typical, with single testis (cf. DECRAEMER, 1975). Vas deferens posteriorly flanked on both side by a small rounded glandular structure.

Spicules 21 μm long in the holotype, fine slightly arcuated structures, proximally with an offset capitulum. Muscles of spicular apparatus typical (cf. DECRAEMER, 1975) but rather obscure.

Gubernaculum 9.5 μm long, fine rod-like structure, parallel with spicules. Only protractor muscle being observed.

Tail with two main rings. Large terminal ring 25 μm long, consisting of an annulated anterior part extending to the peduncles of insertion of terminal subdorsal setae and a narrower posterior part, slightly swollen at first and then tapered towards a fine spinneret, 3 μm long. Cuticle of end ring except for spinneret, completely covered with finely granular foreign material.

Female : not found.

TYPE LOCALITY AND HABITAT : Station nord-nordwest of buoy of Pierre Noire in bay of Morlaix (France), at —18 m depth, sublittoral fine sand collected by G. BOUCHER on 23.V.1973.

DIAGNOSIS : *Desmoscolex roscoffiersis* sp. nov. is characterized by its small body length, its setal pattern deviating from the typical setal pattern of 17-ring species by lacking subventral setae on main ring 15, by the rounded head shape and the shape and position of the cephalic setae : long fine setae bearing a flag-like membrane and inserted near the

anterior head border, by the shape of the subdorsal setae provided with an offset lance-shaped distal end, by the presence of elongated setae on main rings 16 and 17 and by the length and shape of the copulatory apparatus.

DISCUSSION

The possibility of overlooking the flag like membrane of the cephalic setae (a diagnostic character) by previous authors was taken into account. Therefore all known species possessing cephalic setae inserted on or near the extreme anterior head border were studied and compared with the new species described. Among them *D. roscoffiensis* sp. nov. could be distinguished from all 17-ring species by its setal pattern, its general habitus and head-shape.

D. roscoffiensis sp. nov. differs from all other species possessing cephalic setae flanked by a membrane in the number of main rings, the setal pattern, the length and shape of the cephalic setae and the shape of the additional membrane.

Desmoscolex deconincki Decraemer, 1975 (Fig. 1 C, D)

MATERIAL : 1 ♀ nr. AN 202.

MEASUREMENTS OF SPECIMEN FROM FRANCE : *Female* : L = 165, hd = 8.5 × 11, cs = 22, sd₁ = 16, sd₃ = 13, sd₅ = 13, sd₇ = 13, sd₉ = 13, sd₁₁ = 13, sd₁₃ = 13, sd₁₆ = 22, sd₁₇ = 24, sv₂ = 10, sv₄ = 10, sv₆ = 10, sv₈ = 10, sv₁₂ = 9.5, sv₁₄ = 9, sv₁₅ = 9, oes = 25, t = 29, tmr = 20, mbd = 23, (mbd) = 19.

DISCUSSION

The specimen from France agrees with the type material in most characteristics such as : general habit, body length, length and shape of cephalic setae, oesophagus, body diameter, tail ; the setal pattern ; the length and shape of the amphids and the length and shape of the subdorsal setae.

It differs from the type material in the following features : 1) head more elongated in regard to its width than in the type specimens ; 2) the amphidial pore is non-sclerotized in the specimen from France, only a weakly cuticularized zone around the amphidial pore is somewhat marked off from the rest of the head ; 3) the anterior most pairs of subventral setae i.e. on main rings 2 and 4 are not elongated, all subventral setae are equally long and the setae on main ring 2 are not laterally shifted ; 4) the terminal ring is somewhat longer in regard to the tail length than in the type specimens.

Desmoscolex geraerti Decraemer, 1975 (Fig. 1 E)

The specimens from Brittany (France) are compared with the type material from Yonge Reef, Great Barrier Reef (Australia).

MATERIAL : 1 ♂ nr. AN 203 ; 1 ♀ nr. AN 204.

MEASUREMENTS OF SPECIMENS FROM FRANCE : *Male* : L = 170, hd = 11 × 11, cs = 13, sd₁ = 12, sd₃ = 10, sd₅ = 11, sd₇ = 10, sd₉ = 9.5, sd₁₁ = 10, sd₁₃ = 18, sd₁₆ = 16, sd₁₇ = 28, sv₂ = 7.5, sv₄ = 8, sv₆ = 8, sv₈ = 8, sv₁₀ = 8.5, sv₁₂ = 8.5, sv₁₄ = 8.5, sv₁₅ = 5, spic = 23, gub = 12, t = 39, tmr = 24, oes = 24, mbd = 25, (mbd) = 20. — *Female* : L = 170, hd = 11 × 11, cs = 16, sd₁ = 12, sd₃ = 11, sd₅ = 11, sd₇ = 11, sd₉ = 10, sd₁₂ = 17, sd₁₅ = 20, sd₁₆ = 22, sv₂ = 7.5, sv₄ = 8.5, sv₆ = 9, sv₈ = 9.5, sv₁₀ = 13, sv₁₁ = 14, sv₁₃ = 9, sv₁₄ = 10, t = 35, tmr = 20, oes = 23, mbd = 34, (mbd) = 30.

DISCUSSION

Male specimen from France largely agrees, with type specimens from Australia ; only a few variations noticed : Last three pairs of subdorsal somatic setae i.e. on main rings 13, 16 and 17 clearly elongated, however with the setae on ring 16 being somewhat shorter than the previous pair instead of longer as in the type specimens. Unlike the type specimens with the subventral setae on main ring 15 being fine and equal in length and shape with the other subventral setae, the specimen from France possesses on main ring 15 stout, short spinelike setae clearly differentiated from the other subventral setae. Spinneret somewhat elongated (4 μm long) in regard to the type specimens.

Female specimen found in samples from Brittany, having only 16 main rings with following setal pattern : subdorsal, right : 1, 3, 5, 7, 9, 12, 15, 16 = 8 ; left : 1, 3, 5, 7, 9, 12, 15, 16 = 8. — subventral, right : 2, 4, 6, 8, 10, 11, 13, 14 = 8 ; left : 2, 4, 6, 8, 10, 11, 13, 14 = 8.

Subdorsal setae on main rings 12, 15 and 16 clearly elongated ; subventral setae on main rings 10 and 14 somewhat longer than the other subventral setae.

If this female is considered as having lost a ring between its 10th and 11th main ring, its setal pattern represents a typical one.

REMARKS

From a study of the literature and type material it appears that among the 17-ring species of *Desmoscolex* no variability was found in the number of main rings except for *D. geraerti* with a male paratype with only 16 main rings (see DECRAEMER, 1975 ; DECRAEMER, in press).

The possession of only 16 main rings in a male paratype and a female from France of *D. geraerti* is considered as aberrant and presumably due to the loss of a ring respectively between the 8th-9th main ring and the 10th-11th main ring as could be deduced from the setal pattern.

***Desmoscolex longisetosus* Timm, 1970**

The male specimen from Pierre Noire, bay of Morlaix resembles the type specimens in many characteristics but also shows variations which are characteristic for the atypical form of *D. longisetosus* (see DECRAEMER, 1975).

MATERIAL : 1 ♂ nr. AN 205.

MEASUREMENTS OF SPECIMEN FROM FRANCE : *Male* : L = 215, hd = 16 × 13, cs = 29, sd₁ = 17, sd₃ = 16, sd₁₁ = 18, sd₁₃ = 26, sd₁₆ = 26, sd₁₇ = 36, sl₂ = 21, sv₄ = 13, sv₆ = 13, sv₁₂ = 14, sv₁₅ = 13, spic = 22, gub = 11, t = 44, tmr = 23, oes = 30, mbd = 28, (mbd) = 24.

REMARKS

Body length of the specimen from France somewhat longer than in the atypical form of *D. longisetosus* (215 μm compared with 160-170 μm in ♂), but smaller than in the type specimens of *D. longisetosus* (215 μm compared with 295 μm in ♂); its body length similar to that of the Australian specimen (220 μm in ♀) (see DECRAEMER, 1975).

Main rings with fine and relatively coarse concretion particles separated from each other by interzones consisting of 2-3 secondary rings. Some of the secondary rings give an impression of possessing a transverse row of very fine spines such as in the type specimens.

Setal pattern similar with that in the type specimens and a female specimen of the atypical form i.e. deviating from the typical pattern of 17-ring species (TIMM, 1970) by the absence of subventral setae on main rings 10 and 14. Somatic setae comparable in length with those of the type specimens, possessing a similar relation in length to one another, with the elongation of the terminal pair of subdorsal setae even more pronounced than in the type specimens.

Cephalic setae slender, jointed, nearly as long as in the type specimens (29 μm compared with 32-36 μm), but longer than in the atypical form (29 μm compared with 18-23 μm).

Head shape and measurements comparable with specimens of atypical form i.e. broader head than the type specimens. Head usually wider than or as wide as long instead of being elongated as in the type specimens; especially in the anterior third of the head with sclerotized cuticle.

In relation to the shorter head, elongation of amphids less pronounced than in type specimens. Amphidial pore small, located halfway head length, being posteriorly connected with an elevated more or less triangular structure, stronger sclerotized than in the type specimens.

In all other characters, shared by both typical and atypical form of *D. longisetosus* the male specimen from France agrees with previous descriptions (see TIMM, 1970; DECRAEMER, 1975).

Subfamily TRICOMINAE Lorenzen

Genus **HAPTOTRICOMA** Lorenzen

Haptotricoma Lorenzen, 1977 : 117-124.

Haptotricoma boucheri sp. nov. ¹

(Fig. 2)

MATERIAL : 1 ♀ holotype : nr. AN 206.

MEASUREMENTS : *Holotype* ♀ : L = 710, hd = 21 × 18, cs = 18, sv₁₁ = 18, sv₂₇ = 17, sv₄₆ = 16, sv₇₅ = 15, sv₁₄₅ = 16, sv₁₇₇ = 15, sv₁₉₄ = 37, sv₂₀₇ = 41, sd₁₇ = 18, sd₃₈ = 16, sd₆₀ = 16, sd₁₃₁ = 14, sd₁₆₂ = 14, sv₁₈₇ = 35, sv₁₉₇ = 41, sv₂₀₅ = 40, sd₁₆₅ = 34, sd₁₈₆ = 36, sd₂₁₁ = 39, oes = 78, nr = 46, t = 140, tnr = 30, bd vulva = 28, mbd = 28, a w = 22, L vulva = 360.

INDICES OF DE MAN : a = 28.9, b = 9.1, c = 5.0.

DESCRIPTION

Female : Body relatively long and slender. Cuticle consisting of numerous small annules : 218-220 on the ventral body side, 224-227 on the dorsal body side ; each annule provided with a ring of more or less pear-shaped scales (3-4 μm long), some of them showing an obscure fine central bar. Where scales are missing, fine short bars or pegs (2 μm long) are observed (cf. fig. 2 B). Scale-like structures are presumably being formed by secretion around a peg. Scales being larger and more abundant on the dorsal and ventral body sides than on both lateral sides where scales are slightly smaller and on several places presumably accidentally removed.

Somatic setae consisting of two different types of setae : 1) fine setae, 14-18 μm long, tapered towards a fine open tip and 2) large glandular setae, 34-41 μm long, with flattened open tip (see "Haftborsten" in LORENZEN (1977)), situated only at posterior body region. Two glandular setae present dorsally as well as ventrally on the right body side ; on the left side of the body three glandular setae were observed dorsally and ventrally.

Somatic setae arranged as follows : subdorsal, right : 11, 27, 46, 75, 145, 177, 194, 207 = 8 on 220 body rings ; left : 31, 60, 92, 120, 144, 167, 187, 197, 205 = 9 on 218 body rings ; with glandular setae on rings 194, 207 (right body side) and on rings 187, 197, 205 (left body side). — subventral, right : 17, 38, 60, 99, 131, 162, 169, 217 = 8 on 227 body rings ; left : 48, 96, 126, 154, 165, 186, 211 = 7 on 224 body rings ; with glandular setae on rings 169, 217 (right body side) and on ring 165, 186, 211 (left body side).

All somatic setae directly inserted on to cuticular rings, without peduncle. No glandular cells were observed at the base of the large glandular setae (see also LORENZEN, 1977).

Head more or less triangular in lateral view, anteriorly tapered towards a truncated end, 7.5 μm wide. Its cuticle thickened and well sclerotized, except for the labial region. No separate lips observed. Only one crown of six minute labial papillae visible in side view ; papillary nerves obscure, disappearing into six finely granular masses or glandcells at level of insertion of cephalic setae.

Cephalic setae slender, distally tapered and over their whole length flanked by a membrane ; setae 18 μm long and inserted on low peduncles situated just posterior to half the head length.

1. This species is dedicated to G. BOUCHER.

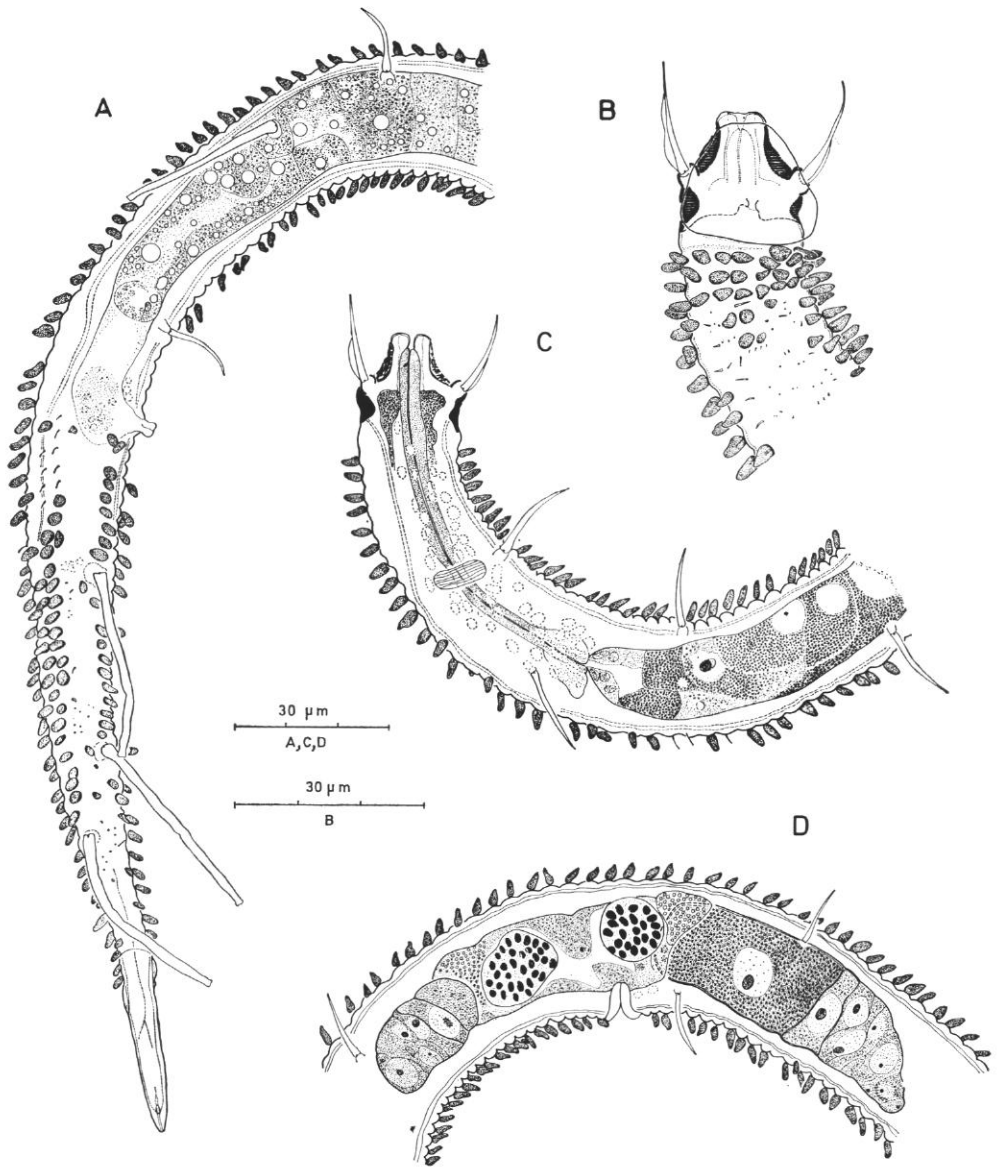


FIG. 2. — *Haptotricoma boucheri* sp. nov., holotype female : A, posterior body region with surface view of tail ; B, surface view of head and anterior body region ; C, oesophageal region with oesophago-intestinal junction ; D, reproductive system.

Amphids large, vesicular, extending anteriorly to labial region and posteriorly to just beyond the head border. Amphidial canal ending in a small groove situated in the posterior sclerotized region of the head, behind the peduncle of the cephalic setae.

Stoma narrow and shallow, 2.5 μm deep. Oesophagus narrow cylindrical, surrounded by the nerve ring at 59 % of its length. In posterior oesophageal region, oesophageal glands observed as obscure protruding lobes ; numerous nuclei present in this area, obscuring the internal organs on this level. Oesophago-intestinal junction opposite body ring 20.

Cardia hardly marked off from intestine proper ; its wall in longitudinal optical section provided on each side with two nuclei.

Intestine broad, cylindrical, provided with small globules and fine granula. Its wall consisting in the anterior intestinal region of large finely granular cells with a large nucleus. Anus protruding from ventral body wall as a short tube in ring 184.

Ocelli being small structures consisting of a dark-yellowish globular part, 2.5 μm diameter, and a small triangular non-pigmented part, situated opposite body ring 20.

Reproductive system didelphic-amphidelphic with out-stretched ovaries ; anterior branch situated at the right side of the intestine, posterior branch at the left side. Two obvious globular spermathecae with numerous spermatozooids present. Each branch of the genital system possessing a glandular structure with small granules at the level of the uterus, close to the spermatheca. Uterus with finely granular wall provided with a few large nuclei with distinct nucleolus. Vulva situated between rings 117 and 118 i.e. at 50,7 % of total body length from anterior extremity. Vagina thick-walled.

Tail slender, tapered, posteriorly towards a naked (= without scales) conical end ring with spinneret. Phasmata not observed. Caudal glands obscure.

Male : not found.

TYPE LOCALITY AND HABITAT : Pierre Noire, bay of Morlaix (France), at —18 m depth, sublittoral fine sand, collected by G. BOUCHER on 23.V.1973.

DIAGNOSIS : *Haptotricoma boucheri* is characterized by 1) its body cuticle consisting of 218-227 annules, each annule provided with a ring of scales, 2) the presence of two large glandular setae subdorsally and subventrally on the right body side and three large glandular setae subdorsally and subventrally on the left body side.

DIFFERENTIAL DIAGNOSIS : *H. boucheri* is closely related to *H. arenaria* Lorenzen, 1977, and forms with the latter species the only two species from the genus *Haptotricoma* Lorenzen, 1977, known until now. *H. boucheri* can be distinguished from *H. arenaria* by the presence of scales and bars instead of only bars as in *H. arenaria* ; in the total number of somatic setae : 7/8 subdorsal setae and 8/9 subventral setae instead of 18 subdorsal setae and 16 subventral setae on each side of the body in *H. arenaria*, in the number and arrangement of the large glandular somatic setae : 2 setae (right body side) — 3 setae (left body side) dorsally as well as ventrally instead of 14 setae dorsally and only one seta ventrally in *H. arenaria* (♀ holotype) and in possessing a slender body with demanian index $a = 28.9$ against $a = 19$ in holotype ♀ of *H. arenaria*.

REMARK

I doubt that $\text{♀}2$ of *H. arenaria* in the original description of LORENZEN (1977) is really an adult female especially because of the smaller number of somatic setae and also because

of its smaller body length and smaller number of body rings in comparison with the holotype female showing a well developed genital system. Comparing with what is known on juveniles in the Desmoscolecida especially in the genus *Tricoma* (see DECRAEMER, 1977) the differences formerly mentioned between ♀2 and the holotype ♀ in *H. arenaria* are juvenile characteristics e.g. in *Tricoma*, juvenile stages possess a smaller number of somatic setae, a smaller body length and a smaller number of body rings than the adults.

DISCUSSION

Including *H. boucheri* sp. nov. within the genus *Haptotricoma* Lorenzen, 1977, involves a slight extension of the diagnosis of this genus concerning body rings : "Body rings provided with a ring of short fine bars, surrounded or not by secretion material forming scales".

Genus **TRICOMA** Cobb

Tricoma Cobb, 1894 : 389-391.

Tricoma islandica Kreis

(Fig. 3)

Tricoma islandica Kreis, 1963 : 24-25.

As far as I know, *T. islandica* is rediscovered for the first time. The original description is based on a single male specimen ; in the material from Pierre Noire (France) both sexes were present.

MATERIAL : ♂ nr. AN 207 ; ♀1 nr. AN 208 ; ♀2 nr. AN 209.

MEASUREMENTS OF SPECIMENS FROM FRANCE : *Female 1* : L = 605, hd = 19 × 14, cs = 18, sd₁₃ = 9.5, sd₂₁ = 13, sd₃₄ = 11, sd₄₆ = 15, sd₆₀ = 14, sd₇₃ = 15, sd₈₉ = 16, sd₁₀₁ = 15, sd₁₁₁ = 16, sd₁₁₉ = 15, sd₁₂₉ = 12, sl₁ = 4.5, sv₇ = 12, sv₁₆ = 11, sv₂₂ = 12, sv₂₆ = 11, sv₃₂ = 12, sv₄₀ = 12, sv₄₇ = 10, sv₅₄ = 9, sv₆₃ = 10, sv₆₉ = 7.5, sv₇₈ = 8.5, sv₈₄ = 8.5, sv₉₆ = 10, sv₁₀₅ = 8.5, sv₁₃₁ = 11, oes = 62, nr = 35, t = 72, tmr = 23, mbd = 25, (mbd) = 21. — *Female 2* : L = 580, hd = 19 × 13, cs = 15, oes = 60, nr = 36, t = 62, tmr = 22, mbd = 29, (mbd) = 21. — *Male* : L = 605, hd = 18 × 14, cs = 18, sd₁₁ = 12, sd₄₆ = 13, sd₁₀₇ = 14, sd₁₂₆ = 11, sd₁₃₅ = 8, sl₁ = 7.5, sv₆ = 10, sv₁₄ = 11, sv₂₀ = 12, sv₃₂ = 12, sv₃₈ = 14, sv₁₀₃ = 9.5, sv₁₁₀ = 9.5, sv₁₁₈ = 8, sv₁₂₇ = 8, sv₁₃₄ = 9, oes = 78, nr = 40, t = 73, tmr = 21, spic = 27, gub = 18, mbd = 21.

DESCRIPTION

Female : Body slender, about cylindrical only slightly tapered in tail region. Cuticle with 137-146 main rings with a large variability in number of rings between specimens, mainly due to the presence of partial additional rings ; a difference of two rings possible

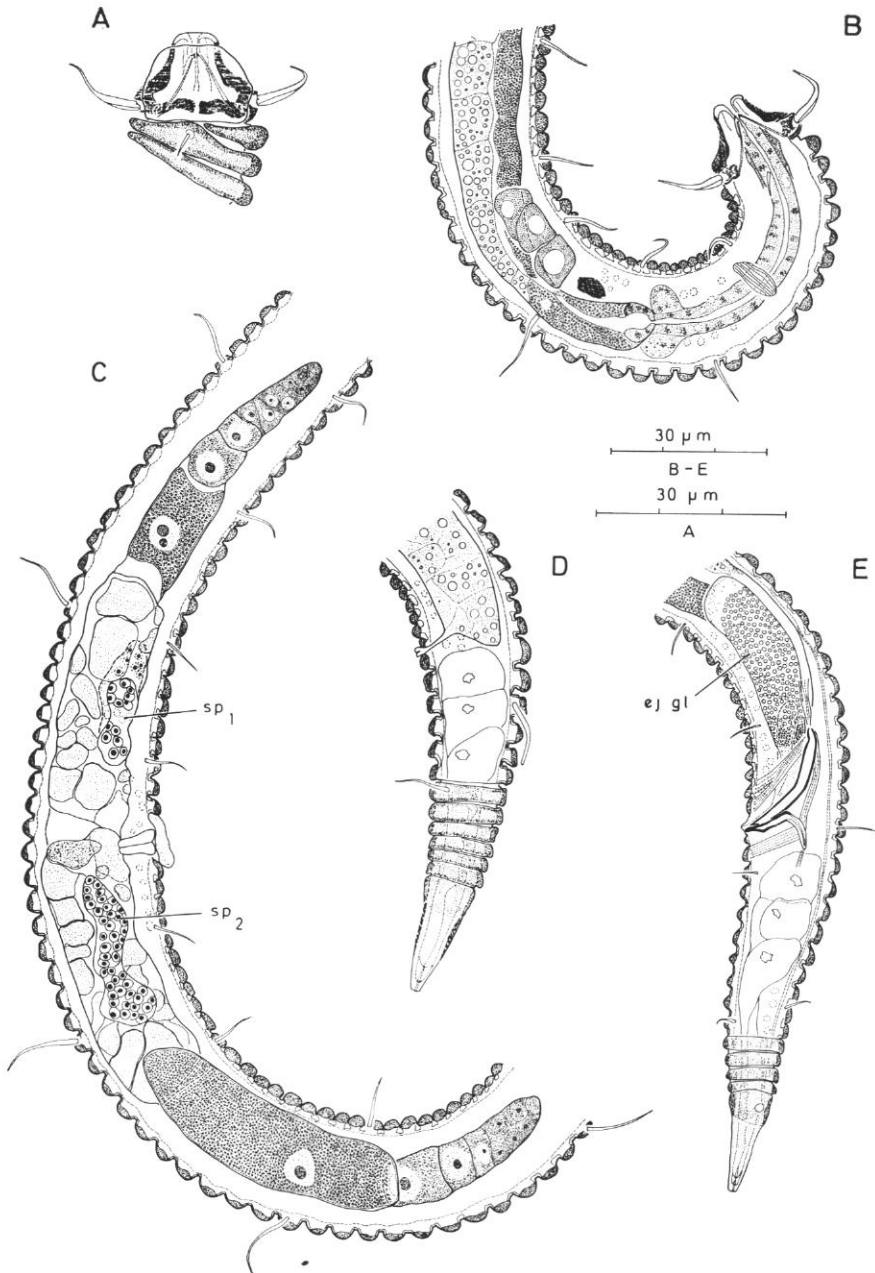


FIG. 3. — *Tricoma islandica* : A, surface view of head (female) ; B, oesophageal region with oesophago-intestinal junction (female) ; C, female reproductive system ; D, tail region (female) ; E, posterior body region (male).

between dorsal and ventral body side within the same individual. Main rings consisting of a relatively small cuticular ring covered by a thin layer of secretion and fine foreign material, separated from each other by a very narrow, low interzone.

Somatic setae arranged as follows e.g. ♀1 with 137-139 main rings : subdorsal, left : 13, 21, 34, 46, 60, 73, 89, 101, 111, 119, 129 = 11 ; right : 11, 20, 33, 42, 54, 66, 85, 95, 107, 119, 130 = 11. — subventral, left : 1, 7, 16, 22, 26, 32, 40, 47, 54, 63, 69, 78, 84, 96, 105, 131 = 16 ; right : 1, 7, 14, 20, 25, 30, 37, 45, 51, 58, 65, 71, 79, 86, 96, 106, 132 = 17.

With the anterior most pair of setae on ring 1 or 2 laterally inserted. Number of subdorsal setae 11 ; number of subventral setae varying between 16-19.

Somatic setae slender, slightly distally tapered towards a fine tip. Subdorsal setae slightly lengthening posteriorly except for the terminal pair which is somewhat shorter again. Subventral setae somewhat shorter than subdorsal ones. Behind the conspicuously short anteriormost pair of setae i.e. on ring 1, all other subventral setae with about the same length in the anterior half of the body ; posteriorly being somewhat shorter.

Cephalic setae as long as or somewhat shorter than the maximum head width, distally tapered towards a fine tip and over their whole length flanked by a narrow membrane, difficult to observe in side view. They insert on short peduncles in the posterior part of the head.

Amphids large vesicular, covering head almost completely ; reaching nearly to labial region anteriorly, and to extreme head end posteriorly. Amphidial canal ending in a groove in posterior sclerotized head wall i.e. shortly behind peduncles of cephalic setae.

Stoma narrow, 3.5-4 μm deep. Three fine muscles (1 dorsal, 2 ventrosublateral) inserting at basal part of stoma on the slightly protruding cuticularized end of oesophagus (teeth ?) and extending obliquely posteriorly towards base of peduncles of cephalic setae. Oesophagus typical i.e. narrow cylindrical, extending to interzones 15-16 or 16-17. Nerve ring surrounding oesophagus opposite main ring 8 or 9. In posterior oesophageal region, oesophageal glands observable as obscure, protruding lobes.

Cardia 5-6 μm long, cellular, demarcated from the intestine proper.

Anterior finely granular part of intestine narrow, with a rather short arch dorsally, beginning shortly behind the cardia. Behind arch i.e. from main ring 27 (♀1) on, intestine widens to a broad cylinder ; with fine granules in ventral wall, small and large spherical inclusions in dorsal and lateral walls. Ventrally at level of intestinal arch no ventral organ observed ; three successive finely granular pseudocoelomocytes present on each side of the body in this zone.

Postrectal blind sac absent or minute. Anal tube protruding from medioventral part of body wall between main rings 124-125 (♀1) or in main ring 132 (♀2).

Ocelli dark-yellowish, small rounded (♀2) to larger elongated, 5.5 \times 3 μm diameter (♀1) situated opposite main rings 19-20 (♀1), ring 20 or 21 (♀2).

Reproductive system didelphic-amphidelphic with outstretched ovaries. Anterior branch situated on right side of intestine, posterior branch on left side of intestine. Both uteri with large amorphous inclusions, spread over the uterus (cf. fig. 3 C). Both spermathecae varying in size and shape from large rounded to narrower elongated, provided with many rounded spermatozooids. Vulva and vagina well developed. Vulva clearly protruding from medio-ventral body wall in main ring 75 (♀1) or 80 (♀2).

Tail with 13 main rings (♀1) or 14 main rings (♀2). Terminal ring conical ; cuticle

in anterior third or anterior half of endring covered by a thin layer of a finely granular substance. Phasmata obscure. Three caudal glands with distinct nucleus visible.

Male : In many characteristics identical with the female. Body cuticle with 139 main rings ventrally and 141 rings dorsally.

Somatic setae arranged as follows : subventral, left : 1, 6, 14, 20, 26, 32, 38, 44, 50, 58, 64, 70, 78, 87, 95, 103, 110, 118, 127, 134 = 20 ; right : 1, 6, 13, 19, 25, 31, 36, 42, 50, 57, 65, 73, 81, 89, 97, 105, 112, 120, 127, 134 = 20. — subdorsal, left : 11, 21, 35, 46, 57, 67, 75, 83, 93, 107, 126, 135 = 12 ; right : 9, 21, 34, 44, 56, 68, 75, 84, 101, 115, 127, 135 = 12.

With the setae on main ring 1 laterally inserted.

Amphids large vesicular, covering nearly completely the head.

Reproductive system typical (see DECRAEMER, 1977). A large ejaculatory gland is present on both sides of the body along the posterior end of the vas deferens.

Spicules 27 μm long, slightly curved ; proximally provided with a somewhat narrower and offset capitulum. Muscles of spicular apparatus typical.

Gubernaculum 18 μm long ; consisting of a distal part 9.5 μm long, with strongly sclerotized wall and 2 obliquely dorsocaudally orientated, weakly sclerotized apophyses. Muscles of gubernaculum typical.

Tail with 15 main rings ; terminal ring more or less conical, anteriorly covered by desmos. Phasmata small, 2 μm diameter. Three large caudal glands with distinct nucleus.

DISCUSSION

In addition to the original description by KREIS (1960) the setal pattern is given and the internal organs are described.

The specimens from France (♀♀ : 580-605 μm ; ♂ : 605 μm) are somewhat smaller than the type specimen (772 μm). The amphids are large vesicular organs, instead of very small circular structures as mentioned in the original description. As can be deduced from the b-value of the Demanian indices ($b = 3.9$ type specimen ; $b = 9.6-9.7$ (♀), $b = 8.2$ (♂)) the oesophagus is apparently shorter in relation to the body length in the specimens from France than in the type specimen.

The tail consists of a larger number of main rings (15) in the male from France than in the male type specimen (12 rings).

Tricoma polydesma (Southern)

(Fig. 4)

Desmoscolex polydesmus Southern, 1914 : 64-65.

Tricoma polydesma : STEINER, 1916 : 339.

Original description emended, based on a female from France ; data on the arrangement of the somatic setae and on the internal organs are added.

MATERIAL : ♀ nr. AN 210.

MEASUREMENTS OF SPECIMEN FROM FRANCE : *Female* : L = 550, hd = 25 × 16, cs = 20, sd₇ = 17, sd₁₄ = 16, sd₂₃ = 16, sd₃₃ = 14, sd₄₃ = 15, sd₅₃ = 13, sd₆₃ = 13, sd₇₅ = 13, sd₈₄ = 14, sl₀ = 12, sv₆ = 16, sv₁₂ = 19, sv₁₇ = 18, sv₂₄ = 16, sv₂₉ = 16, sv₃₆ = 15, sv₄₄ = 15, sv₅₃ = 15, sv₆₃ = 14, sv₇₃ = 15, t = 85, tnr = 29, oes = 67, nr = 38, mbd = 30, (mbd) = 24.

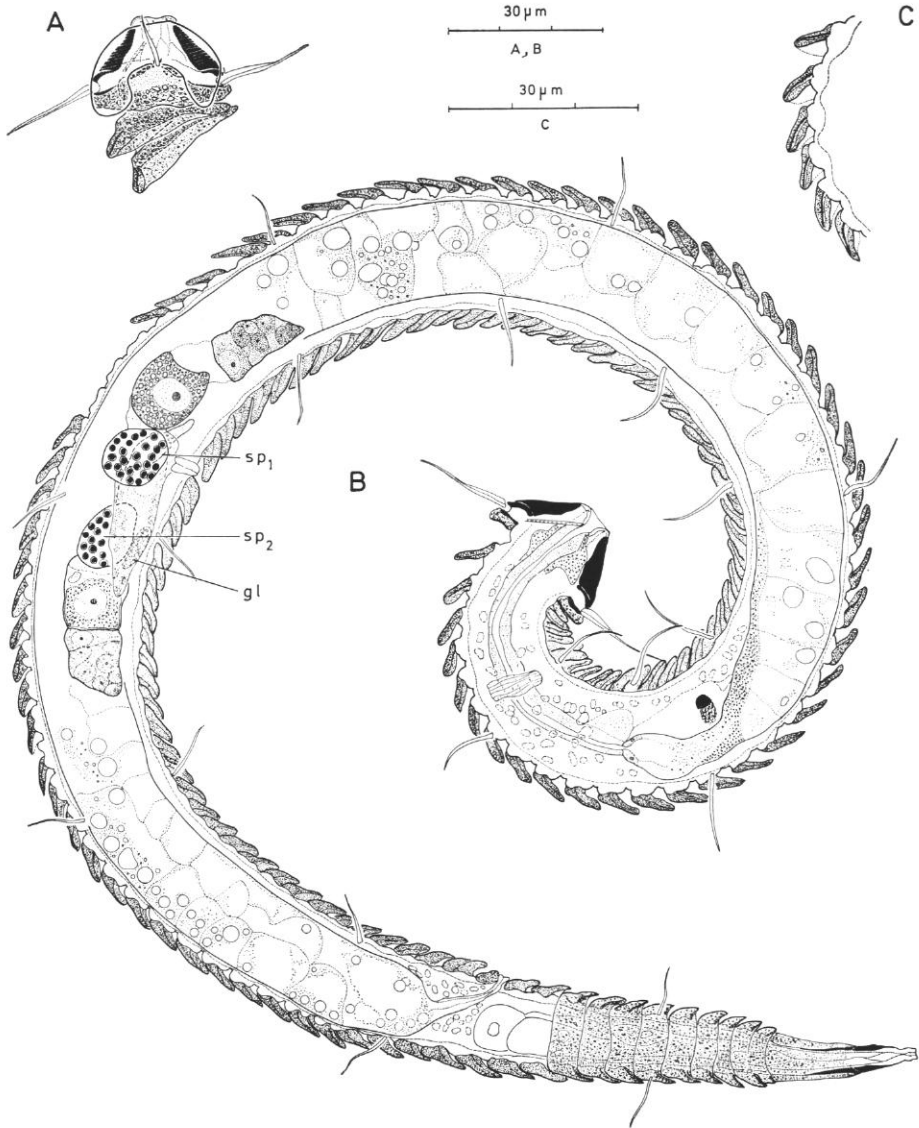


FIG. 4. — *Tricoma polydesma*, female : A, surface view of head ; B, entire specimen ; C, detail of dorsal body wall at level of main rings 1-6.

DESCRIPTION

Female : Body relatively slender, about uniform in width, only slightly tapered in tail region. Cuticle with 90 main rings ventrally and 89 rings dorsally ; all main rings directed posteriorly partly overlapping each other, thus giving an imbricate appearance. In longitudinal optical section each main ring with an elongated outline. Large cuticular ring of main ring showing in its middle a slight involution ; desmos of main ring consisting of secretion, fine and coarse foreign material and provided in its middle with a fine rod-like structure or canal (?) (fig. 4 C).

Somatic setae arranged as follows : subdorsal, left : 8, 14, 24, 33, 43, 57, 67, 82 = 8 ; right : 7, 14, 23, 33, 43, 53, 63, 75, 84 = 9. — subventral, left : 0, 6, 12, 17, 24, 31, 39, 47, 58, 67, 84 = 11 ; right : 0, 6, 12, 17, 24, 29, 36, 44, 53, 63, 73, 84 = 12.

Peculiar is the position of the anteriormost pair of somatic setae i.e. situated laterally on the head, at the beginning of the covered posterior head region ; they are given number 0 in the scheme.

Somatic setae slender, slightly tapered towards a fine tip and directly inserted onto the cuticular ring, without peduncle. Subdorsal setae slightly shortening posteriorly. Apart from the shorter pair of setae on the head and the following pair of subventral setae on main ring 6, the other subventral setae become slightly shorter posteriorly.

Head broad triangular in lateral view, from the peduncles of insertion of the cephalic setae gradually anteriorly tapered towards a truncated anterior end. Cuticle broadly thickened and sclerotized, except for the very short labial region and the posterior head region i.e. behind the peduncles of cephalic setae.

Labial region with thin and non-sclerotized cuticle, apparently provided with a crown of 6 minute papillae. (More detailed study of head region and anterior sensorial organs e.g. from an "en face" view was impossible since only one specimen was available). Cuticle in posterior head region i.e. behind peduncles of cephalic setae, covered by a large layer of secretion and foreign material. Latter covered zone bearing a pair of lateral setae inserted just posterior or at the border of the naked, sclerotized anterior head region.

Cephalic setae slender, slightly tapered towards a pointed tip and flanked over their whole length by a narrow membrane, difficult to observe ; nearly as long as the head width and inserted on rather short peduncles in posterior half of the head.

Amphids vesicular and C-shaped, extending anteriorly to the labial region ; both arms of the C reaching posteriorly to the extreme head border while the narrow middle part extends to just in front of the laterally inserted somatic setae. Amphidial canal ending in a small groove situated at posterior end of naked, sclerotized head region.

Stoma 3.5 μm deep. In each sector (1 dorsal, 2 ventrosublateral) a fine muscle extending from basal part of stoma, obliquely posteriorly towards base of peduncles of cephalic setae. Oesophagus, a narrow cylinder, extending to beginning of main ring 12. Nerve ring surrounding oesophagus opposite posterior end of main ring 5 and anterior part of main ring 6 ; with some nuclei of nerve cells anterior and numerous nuclei posterior. Oesophago-intestinal junction at level of posterior end of main ring 11.

Cardia short, not clearly marked off from the intestine proper.

Intestine narrow anteriorly, finely granular and clearly shifted dorsally by a rather pronounced arch; arch beginning shortly behind cardia anterior to the ocelli and ending between main rings 15-16; behind it, intestine broadly cylindrical. Fine granulation of intestinal wall extending farther posteriorly ventrally than dorsally; replaced dorsally by large and small spherical inclusions; since these are few or absent, large polygonal cells of the wall become easily visible. "Ventral organ" (see DECRAEMER, 1977) under the intestinal arch indistinct. 2-3 successive finely granular pseudocoelomocytes flank on each side a part of pseudocoel and part of the intestine at the level of the intestinal arch. Postrectal blind sac absent. Anal tube protruding from naked medioventral part of body wall at the posterior end of main ring 78.

Ocelli light-yellowish, rounded, $5.5 \times 3 \mu\text{m}$ diameter, situated opposite main ring 15 on right side of body and main rings 14-15 on left side of body.

Reproductive system typical i.e. didelphic-amphidelphic with outstretched ovaries. Anterior branch situated on right side of intestine, posterior branch on left side of intestine. Both spermathecae rounded, provided with numerous globular spermatozooids. Vulva situated between main rings 50-51. In each branch uterus apparently extending beyond the vulva; at the end of each uterus i.e. near the spermatheca of the opposite branch lies a small narrow glandular (?) structure (cf. fig. 4 B).

Tail consisting of 12 main rings. Terminal ring more or less conical, cuticle of anterior two-thirds covered by desmos; in covered anterior third of terminal ring and spinneret, cuticle thin, non-sclerotized; in rest of end ring cuticle thickened and sclerotized.

Phasmata rounded, obscure. Three caudal glands with nucleus visible.

DIAGNOSIS EMENDED : *Tricoma polydesma* (Southern, 1914) Steiner, 1916, is characterized by the large number of body rings : 89-91, by the shape of the main rings : all directed posteriorly, partly overlapping each other, by the head shape : broad triangular with truncated anterior end and posterior to peduncles of cephalic setae covered by foreign material; covered head region bearing on each side a laterally inserted seta (♀) and by the C-shape of the amphids.

DISCUSSION

The female specimen from France largely agrees with the original description only based on a single male specimen. The original description however was restricted to some of the outer characteristics (the arrangements of the somatic setae not mentioned). The original figure of the head closely resembles that of the female specimen from France : it is also provided with a covered posterior region, however, without a pair of laterally inserted setae.

Apart from the four cephalic setae, the presence of additional setae on the head region is very peculiar. Other *Tricoma* species as e.g. *Tricoma rostralis* Decraemer, 1977, are known having a head posteriorly provided with a zone covered with foreign material, however without additional setae. In most *Tricoma*-species the anteriormost pair of somatic setae is situated laterally, often on the first main ring. Consequently we could presume

that the anteriormost body ring invaded the head region. Since the head is clearly offset, the covered posterior part is not counted as a main ring; therefore the laterally inserted setae are given number 0 in the scheme.

Tricoma steineri de Man

(Fig. 5)

Tricoma steineri de Man, 1922 : 259-260.

Tricoma spinosa Chitwood, 1936 : 643.

Redescription based on specimens from Pierre Noire, Brittany (France).

MATERIAL : ♂ nr. AN 211 ; ♀ nr. AN 212.

MEASUREMENTS : *Male* : L = 310, hd = 15 × 13, cs = 17, sd₄ = 12, sd₁₀ = 12, sd₁₃ = 13, sd₁₆ = 13, sd₂₀ = 14, sd₂₆ = 14, sd₃₂ = 13, sd₃₇ = 14, sd₄₁ = 14, sd₄₆ = 14, sd₅₄ = 16, sl₂ = 10, sv₅ = 12, sv₉ = 12, sv₁₃ = 13, sv₁₇ = 13, sv₂₀ = 14, sv₂₄ = 15, sv₃₀ = 14, sv₃₆ = 14, sv₄₁ = 15, sv₄₆ = 15, sv₅₀ = 14, sv₅₈ = 15, t = 74, tmr = 26, spic = 24, gub = 17, oes = 47, nr = 27, mbd = 26, (mbd) = 22. — *Female* : L = 310, hd = 15 × 12, cs = 13, sd₆ = 11, sd₁₀ = 11, sd₁₄ = 13, sd₁₈ = 13, sd₂₃ = 14, sd₂₈ = 13, sd₃₃ = 14, sd₃₇ = 15, sd₄₁ = 15, sd₄₃ = 16, sd₅₀ = 22, sd₅₃ = 20, sl₄ = 11, sv₅ = 13, sv₈ = 13, sv₁₂ = 14, sv₁₅ = 14, sv₁₉ = 13, sv₂₃ = 15, sv₂₇ = 14, sv₃₂ = 15, sv₃₆ = 15, sv₄₀ = 16, t = 77, tmr = 30, oes = 41, nr = 27, mbd = 27, (mbd) = 24.

DESCRIPTION

Male : Body short, tapered towards the extremities, especially in tail region. Cuticle with 63 main rings ventrally and 64 rings dorsally consisting of finely granular foreign material.

Somatic setae arranged as follows : subdorsal, right : 4, 10, 13, 16, 20, 26, 32, 37, 41, 46, 54 = 11 ; left : 4, 9, 13, 17, 20, 25, 31, 36, 41, 47, 51, 57 = 12. — subventral, right : 2, 5, 9, 13, 17, 20, 24, 30, 36, 41, 46, 50, 58 = 13 ; left : 3, 6, 11, 15, 20, 24, 29, 34, 39, 43, 47, 51, 58 = 13.

With 1st pair of subventral setae sublaterally inserted. Somatic setae tapering to a fine open tip, directly inserted into cuticular rings or on a very low peduncle. Subdorsal setae subequal in length, posterior setae slightly longer than anterior ones. Subventral setae (except for the shorter anteriormost pair) all about subequally in length and as long as the subdorsal setae.

Head slightly wider than long, tapering gradually anteriorly from peduncles of cephalic setae to a broadly truncated end. Cuticle of head thickened and sclerotized with exception of labial region. Labial region apparently provided with one crown of six minute papillae. More details on the anterior sensorial organs and on the presence or absence of separate lips could not be observed in side view of head.

Cephalic setae tapering distally to a fine open tip ; slightly longer than the maximum head width and inserted on low peduncles, slightly protruding just more than halfway along the head.

Vesicular amphids covering the head almost completely, reaching to the labial region

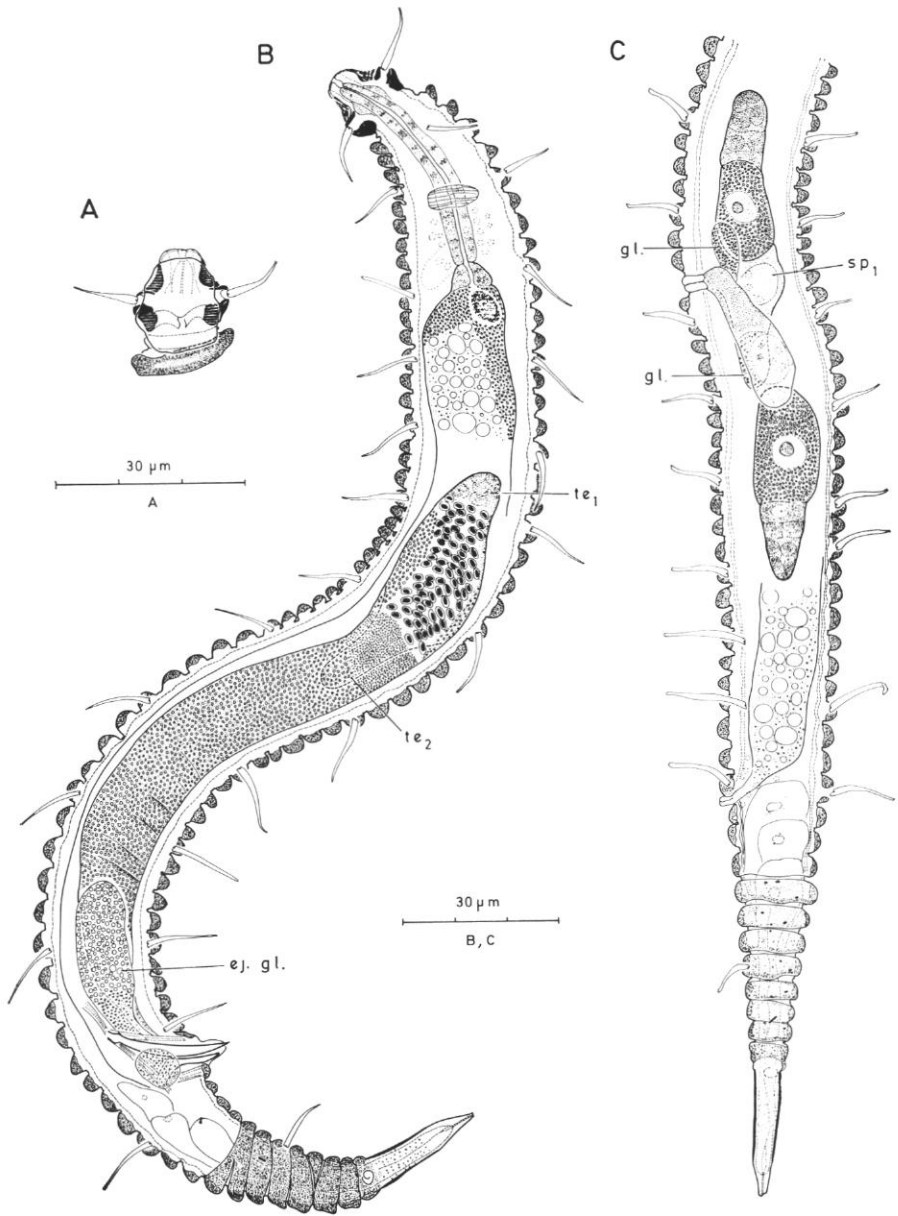


FIG. 5. — *Tricoma steineri* : A, surface view of head (male) ; B, entire specimen (male) ; C, female reproductive system and tail region.

anteriorly and to anterior border of main ring 1 posteriorly. Amphidial canal ending in a groove in the sclerotized posterior head border.

Stoma short, 1.5 µm deep. Oesophagus typical : narrow, cylindrical, surrounded

by the nerve ring opposite main ring 5. Oesophago-intestinal junction opposite posterior end of main ring 8. Cardia $5.5 \mu\text{m}$ long, marked off from the much wider intestine.

Intestine, a broad cylinder with short finely granular anterior part. Behind it, in ventral wall, fine granulation extending farther posteriorly; dorsal wall, on the contrary, provided with small and large spherical inclusions. Ventral excretory (?) organ not observed. Postrectal blindsac absent. Cloacal tube protruding medioventrally from body wall in interzone between main rings 51 and 52.

Ocelli dark-yellowish, rounded elongated, $7.5 \times 5 \mu\text{m}$ diameter, situated opposite main rings 10 and 11.

Reproductive system typical (see DECRAEMER, 1977 : 11-12). Terminal part of vas deferens flanked on each side by a large ejaculatory gland with small spherical inclusions in the swollen anterior part and finely granular in the narrow terminal part. Laterally from both apophyses of the gubernaculum lies a smaller, rounded glandular cell with small granules.

Spicules $24 \mu\text{m}$, nearly straight structures, proximally with an offset capitulum, distally tapered to pointed end. Muscles of spicular apparatus typical (DECRAEMER, 1977).

Gubernaculum $17 \mu\text{m}$ long, consisting of a distal part, $9.5 \mu\text{m}$ long, with sclerotized wall and two obliquely dorsocaudally orientated, weakly sclerotized apophyses, $7.5 \mu\text{m}$ long. Muscles of gubernaculum typical (DECRAEMER, 1977).

Tail consisting of 12 main rings. Terminal ring more or less conical; cuticle of short anterior region covered by desmos, naked in rest of end ring. Phasmata well developed, consisting of a single internal spiral structure situated in covered anterior part of end ring. Three caudal glands observed.

Female : In most characters identical with male. Body with 64 tricomoid main rings.

Somatic setae with comparable pattern to male : subdorsal, left : 6, 10, 14, 18, 23, 28, 33, 37, 41, 43, 50, 53 = 12 ; right : 5, 10, 14, 18, 22, 27, 33, 38, 43, 47, 52, 57 = 12. — subventral, left : 4, 5, 8, 12, 15, 19, 23, 27, 32, 36, 40, 47, 50, 53, 60 = 16 ; right : 4, 5, 9, 13, 17, 20, 24, 28, 33, 37, 40, 45, 49, 52, 59 = 15.

With 1st pair of subventral setae sublaterally inserted ; subventral setae on main rings 47 and 50 (left body side) and on main ring 49 (right body side) slightly laterally shifted. Subdorsal and subventral setae subequal in length, setae slightly lengthening as in the male. However in contradiction with the male the last two pairs of subdorsal setae and the last four or three pairs of subventral setae are clearly elongated in regard to the other somatic setae in the female specimen found.

Ocelli opposite main ring 12, $2.5 \times 3.5 \mu\text{m}$ diameter.

Oesophagus typical, extending to posterior end of main ring 9. Cloacal tube protruding medioventrally from body wall in interzone between main rings 53 and 54.

Reproductive system didelphic-amphidelphic with outstretched ovaries. Anterior branch situated at right side of intestine, posterior branch at left side of intestine. Both branches extending beyond the vulva, thus partly overlapping each other. Spermathecae obscure. Vulva situated in main ring 30.

Tail with 11 main rings. Phasmata obscure, only observed on right body side. Three caudal glands well developed, with distinct nucleus ; anteriormost gland reaching beyond the anus.

DISCUSSION

The specimens from France closely resemble the type specimens of DE MAN (1922) and the specimens described by CHITWOOD (1936, 1951) as *T. spinosa* and synonymized with *T. steineri* by TIMM (1970).

Some slight variabilities were noticed e.g. 1) in number of main rings : 63-64 in specimens from France compared with 66 rings in previous described specimens, 2) in number of somatic seta : 11/12 sd — 13 sv (♂) and 12 sd — 15/16 sv setae (♀) in specimens from France in regard to 13 sd — 16 sv in type specimens and 12 sd — 14 sv in specimen of CHITWOOD and 3) in length of spicules : about as long in specimen from France and as in type specimen : 24-27 μm but somewhat longer in the specimen described by CHITWOOD.

In contradiction with previous descriptions the internal organs were studied more in detail as far as possible ; they agree completely with the other species of the genus.

CONCLUSIONS

Striking is the resemblance concerning the desmoscolecids and also the other nematode groups (Guy BOUCHER, personal communication) between the fauna of the sublittoral fine sand of Pierre Noire, bay of Morlaix (France) and a station in Clew Bay (W 84.25, V'14 1.4 miles NW by N.1/4 N of Corwell, off Crump Island) described by SOUTHERN (1914). Most of the species described by former author were found in the samples from Pierre Noire.

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