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# SCIENTIFIC REPORT ON THE BELGIAN EXPEDITION TO THE GREAT BARRIER REEF IN 1967 NEMATODES XIV

## *Prototricoma dherdei* sp. nov. and *Desmolorenzenia cooleni* sp. nov. with a discussion of the genus *Prototricoma* Timm (Nematoda, Desmoscolecida)

by

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ABSTRACT

Two new species are described : *Desmolorenzenia cooleni* sp. nov. characterized by the very small body length and by the head shape, with the extreme anterior border provided with six fine labial setae; *Prototricoma dherdei* sp. nov. characterized by its habit, the head shape, anteriorly tapered to a narrow truncated end and by the shape of the spicules in males.

The genus *Prototricoma* Timm, 1970 is discussed. A redescription is given of the type species *Prototricoma longicauda* Timm, 1970.

RÉSUMÉ

Deux nouvelles espèces sont décrites : *Desmolorenzenia cooleni* sp. nov. charactérisé par sa petite taille et la forme de la tête avec le bord antérieur portant six fines sètes labiales; *Prototricoma dherdei* sp. nov. charactérisé par son habitus, la forme de la tête, se terminant sur un bord antérieur étroit et tronqué et par la forme des spicules chez les mâles.

Le genre *Prototricoma* Timm, 1970 est discuté. Une rédescription est donné de l'espèce typique *Prototricoma longicauda* Timm, 1970.

## INTRODUCTION

The genus *Prototricoma* Timm, 1970 is discussed; its diagnosis is amended based on the type species and the new species. Its position in the phylogenetic scheme of the Desmoscolecida (Freudenhammer, 1975; Decraemer, 1977) is discussed.

## MATERIAL AND METHODS

All samples from the Great Barrier Reef were collected by Professor Dr. A. Coomans. The type material is deposited in the collection of the Instituut voor Dierkunde, Rijksuniversiteit, Gent, Belgium.

Both new species described in this paper : *Desmolorenzenia cooleni* sp. nov. and *Prototricoma dherdei* sp. nov. were respectively found in 1) sand between

*Palythoa*, from Low Island, in channel towards a mangrove, collected on 7-10-1967 and 2) in sandy bottom at — 40 m depth, from between Cairns and Hyman Island, collected on 20-10-1967.

Both samples were fixed in a mixture of 7 ml 40 % formaldehyde, 2 ml triethanolamine and 91 ml distilled water. Methods : see Decraemer (1978).

The male holotype of *Prototricoma longicauda* from the University of California Nematode Collection, Davis (UCNC), N° 1165 was studied.

ABBREVIATIONS USED

c s = length of cephalic setae;
g.pr = genital primordium;
hd = maximum head dimensions (width & length);
L = length of body;
mbd = maximum body diameter;
nr = position of nerve ring from anterior body end;
oes = length of oesophagus;
$sd_n$ = length of subdorsal setae on main ring $n$;
$sp_1$ = anterior spermatheca;
$sp_2$ = posterior spermatheca;
sp.pr = spicular primordium;
$sv_n$ = length of subventral setae on main ring $n$;
t = tail length;
te = testis;
tmr = length of terminal ring;
All measurements are in micrometers (μm).

Description of the species :

*Desmolorenzenia cooleni* (*) sp.nov.
Figs. 1-2

Type locality and habitat : Low Island.

Measurements :

Holotype ♀ : (slide nr. 207) : L = 135, hd = 10 × 10, cs = 6.5, $sd_1$ = 8,5, $sd_3$ = 7.5, $sd_5$ = 8, $sd_7$ = 7,5, $sd_9$ = 8; $sd_{11}$ = 8, $sd_{13}$ = 10, $sd_{17}$ = 8.5, $sd_{18}$ = 17, $sv_2$ = 4.5, $sv_4$ = 5.5, $sv_6$ = 7.5, $sv_8$ = 7, $sv_{10}$ = 8, $sv_{12}$ = 8.5, $sv_{14}$ = 8.5, $sv_{16}$ = 7.5, oes = 20, nr = 18, t = 27, tmr = 18, mbd = 24, (mbd) = 22.

Paratype $♀_1$ (slide nr. 207) : L = 135, hd = 10 × 9, cs = 7.5, $sd_1$ = 8, $sd_3$ = 6, $sd_5$ = 7, $sd_7$ = 6.5, $sd_9$ = 7, $sd_{11}$ = 8, $sd_{13}$ = 9, $sd_{17}$ = 8.5, $sd_{18}$ = 13, $sv_2$ = 6, $sv_4$ = 6.5, $sv_6$ = 7, $sv_8$ = 7, $sv_{10}$ = 8, $sv_{12}$ = 7, $sv_{14}$ = 7.5, $sv_{16}$ = 7, oes = 21, nr = 17, t = 28, tmr = 20, mbd = 24, (mbd) = 19.

Paratype $♀_2$ (slide nr A 4373) : L = 140, hd = — × 9.5, cs = 9, $sd_7$ = 8, $sd_9$ = 7.5, $sd_{11}$ = 8, $sd_{13}$ = 11, $sd_{17}$ = 8, $sd_{18}$ = 17, $sv_2$ = 6, $sv_{16}$ = 8, oes = 21, nr = 19, t = 20, tmr = 17, mbd = 26, (mbd) = 20.

(*) The new species is named after Dr. Ir. W. Coolen, « Rijksstation voor Nematologie en Entomologie », Merelbeke, Belgium.

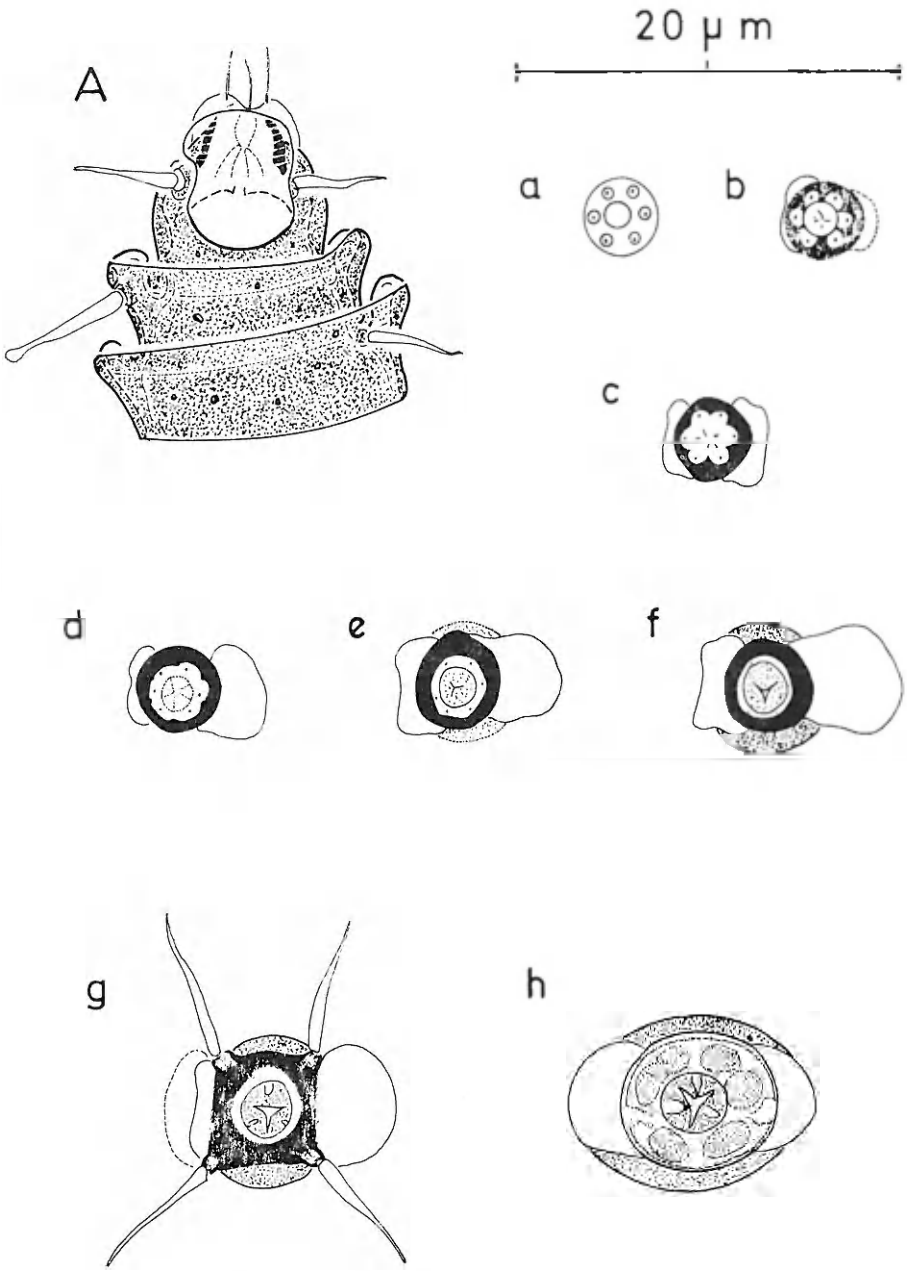


Fig. 1. — *Desmolorenzenia cooleni* sp. nov.

A : surface view of head of female holotype.
a-h : transverse optical sections trough head region;
a : anterior view of head;
b-d : at level of stoma;
e-h : oesophagus.

Female. Body very small, slightly s-curved, tapering towards the extremities. Cuticle with 18 broad quadricomoid rings with desmen of finely granular material, partly or completely extending into the interzones. Inversion of direction of the main rings between rings 14 and 15; the latter rings not separated from each other by a broad interzone and covered by a continuous layer of secretion and foreign material.

Somatic setae arranged according to the typical desmoscolecoid pattern (Lorenzen, 1969; Timm, 1970) :

$$\text{subdorsal} \quad \frac{1, 3, 5, 7, 9, 11, 13, 17, 18 = 9}{1, 3, 5, 7, 9, 11, 13, 17, 18 = 9}$$

$$\text{subventral} \quad \frac{2, 4, 6, 8, 10, 12, 14, 16 = 8}{2, 4, 6, 8, 10, 12, 14, 16 = 8}$$

Somatic setae with differentiation in subdorsal setae with a small spatulate apical tip (except for the setae on main ring 17 with a larger, more pronounced spatulate end) and in subventral setae with a fine open tip. Nearly all somatic setae have about the same length and are inserted on very low peduncles. The setae on main ring 13 are slightly longer and the setae on main ring 18 are remarkably longer than the other subdorsal setae. The two anteriormost pairs of subventral setae i.e. on main rings 2 and 4 are somewhat shorter than the following subventral setae.

Head as long as maximally wide, consisting of a wider rounded posterior part and a narrower anterior part with truncated end. Cuticle thin, covered by a layer of secretion and finely granular material, except in the anteriormost part with labial region and central part covered by the amphids. On both lateral sides two small cuticular dots are lying at the anterior end. At the extreme anterior head border six very fine labial setae, 3-4 μm long, are observed around the oral opening. In anterior view the head is rounded; six labial setae with supporting canal of corresponding labial papillary nerve are observed (Fig. 1a). Posteriorly the head becomes slightly laterally flattened in a transverse optical section; its cuticle is sclerotized and the supporting canals of the labial papillary nerves open and disappear (Fig. 1 c, d). A transverse optical section at the level of the insertion of the cephalic setae shows a more or less rectangular head shape with the minute peduncles of the cephalic setae at the corners.

Cephalic setae distally tapering to an open tip. They are somewhat shorter than the head length and inserted on minuted peduncles about halfway the head length.

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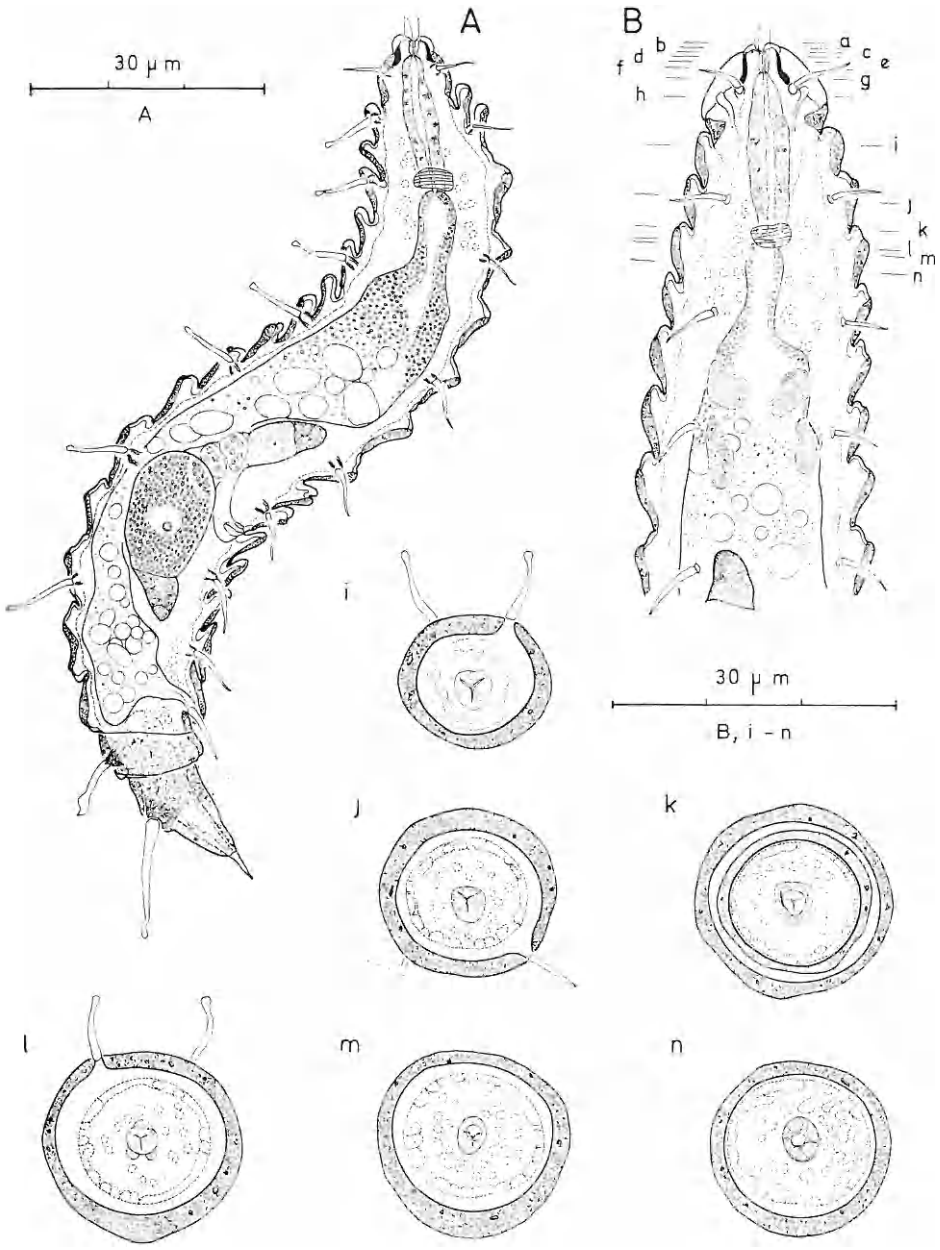
Fig. 2. — *Desmolorenzenia cooleni* sp. nov.

A : holotype female;
B : ventral view of anterior body region of a female, showing levels at which transverse sections a-n were made.

a-h : head region;
i : oesophagus (1ste main ring);
j : oesophagus (2nd main ring);
k : oesophagus at level of nerve ring;
l : oesophagus (3rd main ring);
m : at level of oesophago-intestinal junction;
n : anterior end of intestine.


A
30 µm
A
B
a
b
c
d
e
f
g
h
i
j
k
l
m
n
30 µm
B, i - n
i
j
k
l
m
n

Amphids thin-walled, rounded, largely covering the head laterally. Anteriorly they reach the labial region, posteriorly they almost reach the head end. Amphidial canal ending in a small groove situated at the level of the posterior end of the peduncles of the cephalic setae.

Stoma narrow, 2 μm deep. Oesophagus short cylindrical, extending to the anterior end of main ring 3 and subterminally surrounded by the nerve ring. A detailed study of the oesophageal region was made, based on a series of transverse optical sections. In the female specimen sectioned the stoma, apparently hexaradial, was closed (Fig. 1 c, d). A transverse optical section of the oesophagus at the level of the amphidial pores shows the ending of the oesophageal glands into a typical triradial oesophageal lumen (Fig. 1 h).

Intestine anteriorly with narrower finely granular ventricular part with circular lumen (Fig. 2 n, transverse optical section); posteriorly, intestine proper consisting of a broad cylinder with large and small globular particles, overlapping the rectum by a small postrectal blindsac. Anal tube small, protruding from the medioventral body wall at the posterior end of main ring 16.

Ocelli not observed.

Reproductive system didelphic-amphidelphic with outstretched ovaries. Two globular spermathecae with a few spermatozoids present. Vulva small, situated between main rings 10 and 11.

Tail with two main rings. Terminal ring 17-20 μm long, consisting of a broad cylindrical part to the peduncles of the terminal pair of subdorsal setae and a conical part with terminal spinneret.

Diagnosis. *Desmolorenzenia cooleni* sp.nov. is characterized by its very small body, by its head shape with truncated anterior end and the possession of six fine labial setae at the extreme anterior head border.

Discussion.

*D. cooleni* is the only species of the genus that possesses six fine labial setae at the anterior head border. In the key to the species of *Desmolorenzenia* (cf. Decraemer, 1977, p. 52-53) one will come to *D. hupferi* (Steiner, 1916) Freudenhammer, 1975. It differs however from *D. hupferi* by its body length, its head-shape and the shape of the amphids.

## *Prototricoma* Timm, 1970

For the first time another species *P. dherdei* (*) sp.nov. belonging to *Prototricoma* Timm, 1970 is found. On the base of characters of the type species and the new species, the original diagnosis of Timm (1970) is amended.

Diagnosis. Desmoscolecinae. Cuticle with narrow homonomous rings without desmen, each ring provided or not with a band of hairy spines. Body covered by a continuous layer of secretion and foreign particles. Somatic setae in desmoscolecoid arrangement, with of without differentiation in shape between subdorsal and subventral setae. Oesophagus short, cylindrical, subterminally surrounded by the nerve ring. Intestine with anterior finely granular ventricular part. Male reproductive system with a single outstretched testis.

(*) The new species is named after Ir. C. J. D'Herde, director of Rijksstation voor Nematologie en Entomologie, Merelbeke, Belgium.

Type species : *Prototricoma longicauda* Timm, 1970.

Other species : *P. dherdei* sp.nov.

Discussion.

The genus *Prototricoma*, at first described as a monotypic genus, belongs to the desmoscolecoid branch in the phylogenetic scheme by possessing a desmoscolecoid setal pattern and a male reproductive system with 1 testis (Freudenhammer, 1975; Decraemer, 1977). The other internal organs e.g. the oesophagus, are also typical desmoscolecoid.

*Prototricoma* is closely related to the genus *Desmoscolex* Claparède, 1863 in having a comparable head shape, structure of internal organs and setal pattern.

The adults of *Prototricoma* differ however from males and females of *Desmoscolex* in the structure of the body rings : body cuticle with homonomous annulation without desmen, each ring provided or not with a band of hairy spines instead of having a body cuticle provided with desmen (cf main rings), separated by interzones with narrow annules as in *Desmoscolex*. The structure of the body rings in *Prototricoma* is comparable with that of juvenile specimens in *Desmoscolex* and other genera of the Desmoscolecida such as *Tricoma* Cobb, 1894. Therefore the structure of the body rings in *Prototricoma* is considered to be a neotenic character. Based on the structure of the body cuticle Timm (1970) compared *Prototricoma* with *Prodesmoscolex* Stauffer, 1924 and *Eudesmoscolex* Steiner, 1916, two genera which later on appeared to be juvenile forms of *Desmoscolex* (Lorenzen, 1970).

Considering the absence of desmen and the neotenic character of the body rings, *Prototricoma* can be classified in the phylogenetic scheme within the branch comprising the Desmoscolecinae and, more precisely, within the subdivision containing a genus without desmen : *Pareudesmoscolex* Weischer, 1962 (close to *Desmoscolex*).

*Prototricoma* may also differ from *Desmoscolex* in the absence of a differentiation in shape between the subdorsal and subventral setae.

*Prototricoma longicauda* Timm, 1970

Fig. 3

From a detailed study of the male holotype it appeared that each narrow cuticular body annule is provided with a band of hairy spines. The body cuticle without desmen, is covered by a continuous layer of secretion and fine foreign particles caught between hairy spines.

Somatic setae arranged as follows :

| | | |
|---|---|---|
| subdorsal | right | 18, 31, 52, 80, 98 = 5 |
| | left | 8, 17, 25, 54, 79, 97 = 6 |
| subventral | right | 18, 25, 33, 52, 64, 72 = 6 |
| | left | 18, 25, 34, 53, 64, 72 = 6 |

The setal pattern can be considered as desmoscolecoid (cf Lorenzen, 1969; Timm, 1970). It differs, however from the typical desmoscolecoid pattern in having only six pairs of subdorsal and subventral setae and in the absence of a clear differentiation in shape between the subdorsal and subventral setae. The subdorsal setae become longer posteriorly, the terminal pair is elongated. The subdorsal

setae are somewhat longer than the subventral setae which have all about the same length.

Head small, rounded posteriorly and from the peduncles of the cephalic setae onwards, anteriorly tapered towards a conspicuously widened, truncated labial region. Cuticle, except in the widened anterior region and zone with amphids, covered by a similar layer of secretion and fine foreign particles as on the rest of the body.

Amphids large, rounded, thick-walled and nearly completely lying beyond the head on the anterior cuticular annules; anteriorly reaching to the base of the peduncles of the cephalic setae. Amphidial pore situated opposite the 2nd body annule.

Digestive system typical desmoscolecoid (Decraemer, 1975). Intestine with large postrectal blindsac, ending in the widened medioventral part of the body wall, between rings 71 and 72, without protruding cloacal tube.

Ocelli large, rounded, brownish, situated opposite body annules 17 and 18 and accompanied on both sides of the body by several small pigment spots distributed along the anterior intestinal region.

Male reproductive system typical desmoscolecoid with 1 testis (Decraemer, 1975, 1977).

Spicules cephalate, nearly semi-circularly arcuated, long and fine.

Gubernaculum parallel with the spicules, showing a widened, rounded distal end.

Tail long, fine and annulated except at terminal end.

Discussion :

*P. longicauda* Timm, 1970 differs from all other Desmoscolecida in the position of the amphidial pore i.e. situated on the 2nd cuticular ring instead of on the head region. This exceptional position is perhaps a neotenic character because in juvenile specimens of the Desmoscolecida the head is not set off from the body and the amphidial pore is situated on the anteriormost cuticular annule following the peduncles of the cephalic setae (cf. *Desmoscolex membranosus* in Decraemer (1975) Fig. 6). In adults of e.g. *Desmoscolex* the anteriormost annules of juveniles become enclosed in the head region, consequently the amphidial pore is always situated on the head.

In *P. longicauda* however, the head is small, short, clearly marked off and the anteriormost cuticular rings are not included in the head region in adults. Unfortunately no juvenile specimens of this species are available for comparison.

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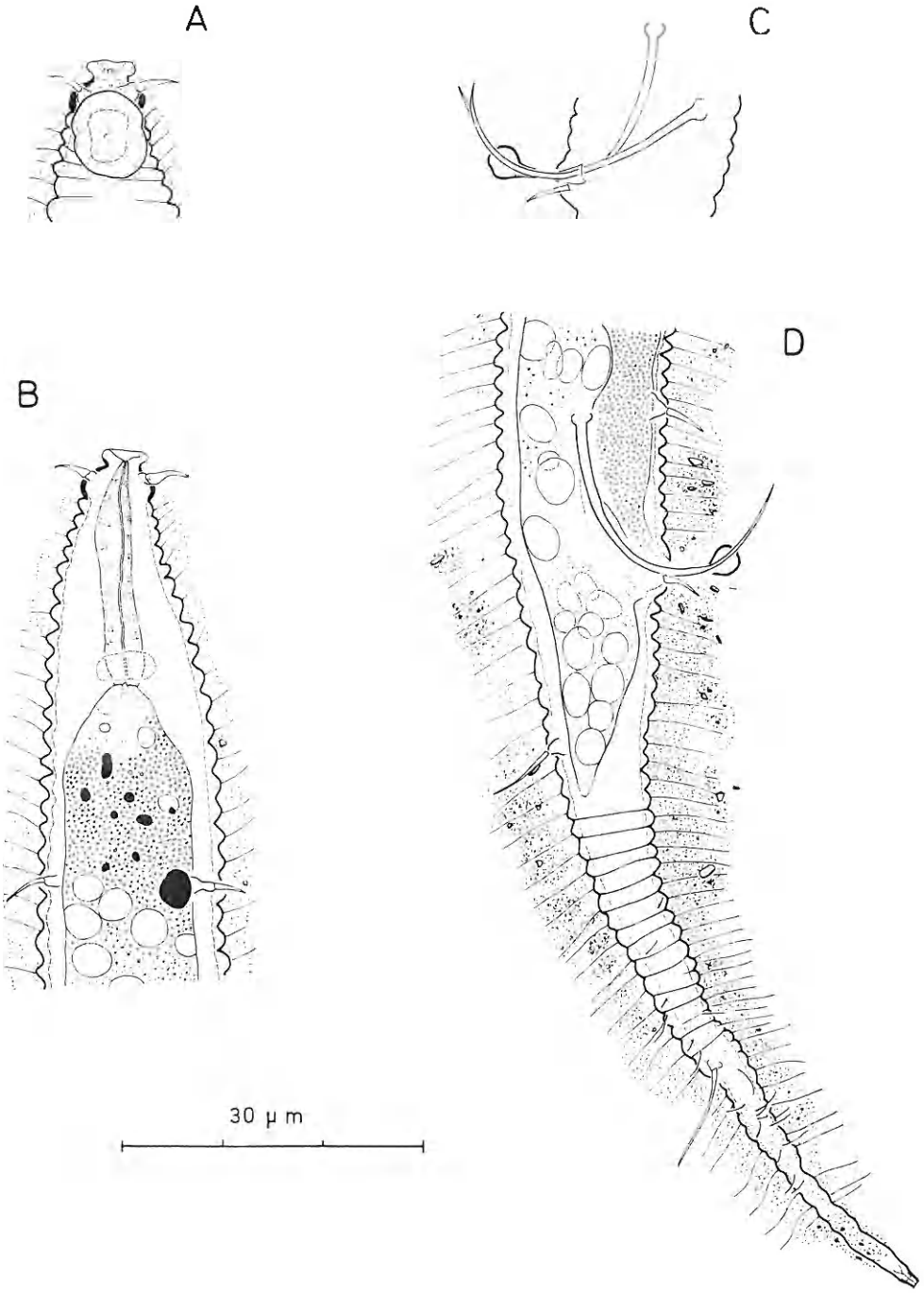
Fig. 3. — *Prototricoma longicauda* Timm. 1970 = male holotype.

A : surface view of head;
B : anterior body region;
C : copulatory apparatus;
D : posterior body region with posterior tail region in surface view.


A
C
B
D
30 µ m

*Prototricoma dherdei* sp.nov.
Figs 4-5

Measurements :

Holotype ♂ : L = 480, hd = 18 × 23, cs = 26, $sd_4$ = 37, $sd_{12}$ = 32, $sd_{20}$ = 32, $sd_{29}$ = 33, $sd_{38}$ = 31, $sd_{48}$ = 32, $sd_{59}$ = 36, $sd_{66}$ = 33, $sd_{73}$ = 45, $sv_8$ = 21, $sv_{16}$ = 27, $sv_{24}$ = 25, $sv_{33}$ = 25, $sv_{42}$ = 26, $sv_{50}$ = 26, $sv_{59}$ = 27, $sv_{64}$ = 25, oes = 49, nr = 43, t = 109, tmr = 67, spic = 43, mbd = 47.

Paratype juvenile : L = 400, hd = 15 × 18, cs = 18, $sd_6$ = 22, $sd_{14}$ = 20, $sd_{21}$ = 24, $sd_{31}$ = 23, $sd_{42}$ = 25, $sd_{51}$ = 25, $sd_{61}$ = 25, $sd_{76}$ = 26, $sd_{86}$ = 37, oes = 39, nr = 34, t = 113, mbd = 39.

Type locality and habitat : Between Cairns and Hyman Island.

Material.

Holotype ♂ : slide nr. 160.
Paratype juv. : slide nr. 160.

Male. Body relatively broad, clearly tapering towards both extremities. Cuticle with 75-79 narrow homonomous rings (long terminal part counted as 1 ring) without desmen but covered by a continuous layer of fine transparant substance with small foreign particles.

On a few rings in the anterior part of the body e.g. on ring 17 some fine hairy spines were observed; on the other body rings spines are apparently absent.

Somatic setae in desmoscolecoid arrangement (cf Timm, 1970; Lorenzen, 1969) :

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| subdorsal Right | 4 | 12 | 20 | 29 | 38 | 48 | 59 | 73 | 79 | = 9 |
| subventral | 8 | 16 | 24 | 33 | 42 | 50 | 59 | 64 | | = 8 |
| subdorsal Left | 4 | 12 | 20 | 29 | 38 | 48 | 57 | 71 | 77 | = 9 |
| subventral | 8 | 16 | 24 | 33 | 41 | 49 | 57 | 62 | | = 8 |

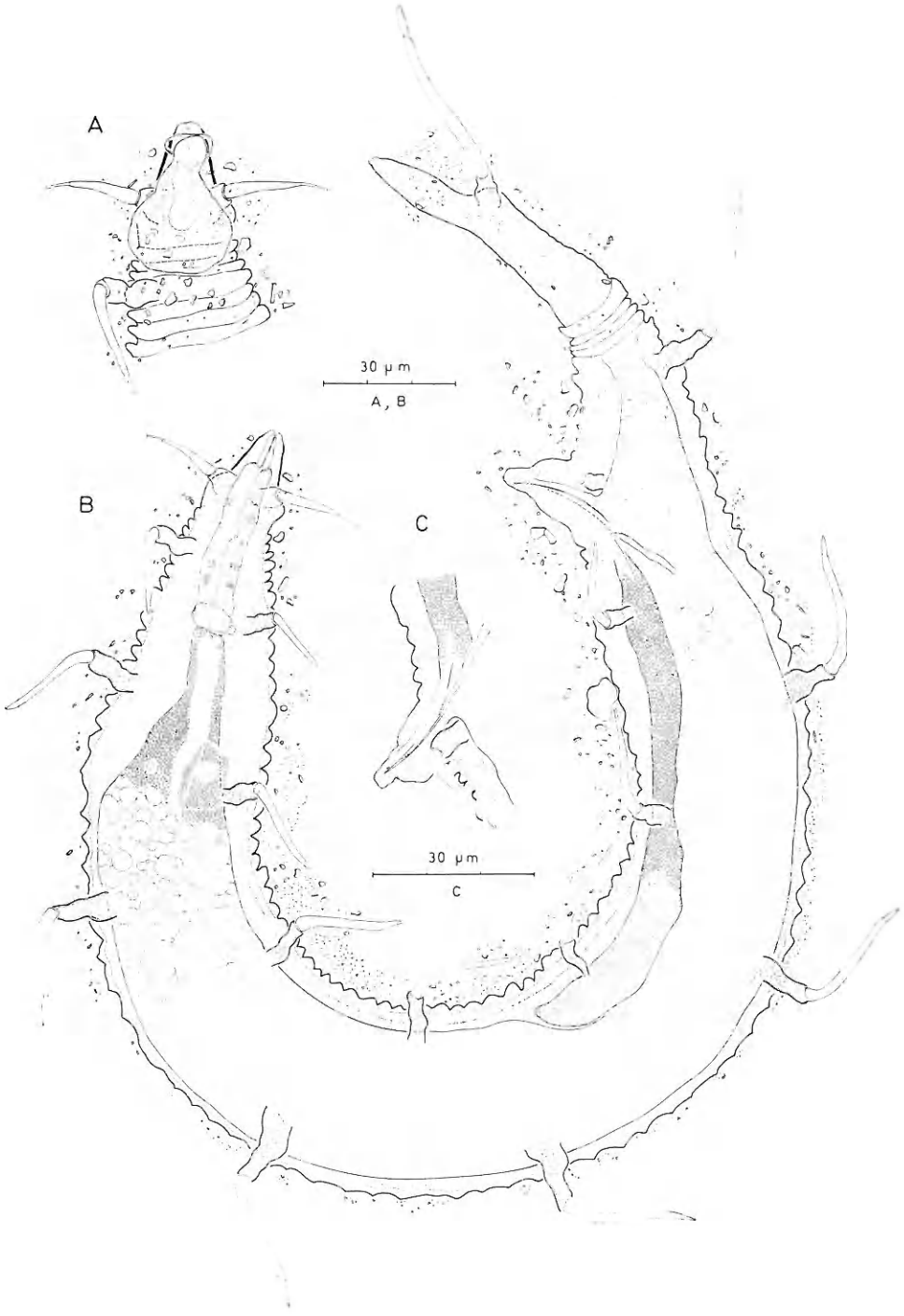
Somatic setae with differentiation in shape between the subdorsal and subventral setae (cf *Desmoscolex*). The subdorsal setae are long, stout hollow setae, distally provided with a slightly marked off spear-shaped tip (3.5-7 µm long). The first pair of subdorsal setae (i.e. on ring 4) are longer than the following subdorsal setae which have about the same length; the terminal pair of subdorsal setae is conspicuously elongated. The subventral setae slightly taper towards a fine open tip. The subventral setae are shorter than the subdorsal ones, apart from the shorter anteriormost pair (i.e. on ring 8). They all have about the same length.

All somatic setae insert on high peduncles, 10-14 µm long, consisting of a narrower distal part and a wider proximal part containing a finely granular gland.

Head longer than wide, from the peduncles of the cephalic setae distinctly

Fig. 4. — *Prototricoma dherdei* sp. nov. = male holotype.

A : surface view of head ;
B : male holotype = total view ;
C : copulatory apparatus.


A
30 µm
A, B
B
C
30 µm
C

tapered towards a narrow slightly truncated anterior end. Cuticle thin, hardly sclerotized anterior to the peduncles of the cephalic setae. Labial sensory organs indistinct.

Cephalic setae jointed, with fine distal part with open tip. They are slightly longer than the head and inserted on relatively high peduncles posteriorly protruding from the head. At the base of each peduncle of the cephalic setae lies a finely granulated glandular structure, well developed subdorsally.

Amphids thick-walled, complex, consisting of 1) a large raised vesicular main part covering the head almost completely : posteriorly, extending to the 3rd body ring, anteriorly, from the level of the peduncles of the cephalic setae onwards, tapering to 2) a smaller, lower part that at the very anterior border encircles the head. The amphidial canal ends at the level of the posterior end of the peduncles of the cephalic setae.

Stoma narrow, 9 μm deep. Oesophagus short cylindrical (cf. *Desmoscolex*), extending to body ring 9 and subterminally surrounded by the nerve ring. Dorsal oesophageal wall anteriorly with enlarged glandular zone. Intestine anteriorly with narrower finely granular ventricular part; posterorly, intestine proper consisting of a broad cylinder with numerous globular particles, conspicuously overlapping the rectum by a large postrectal blindsac. Large cloacal tube protruding from the medioventral body wall at the level of body rings 63-64.

Ocelli not observed.

Reproductive system with one outstretched testis.

Spicules 43 μm long, slender, provided with a hardly marked capitulum. Corpus in proximal third straight, narrow, well cuticularized, continuing distally into a slightly arcuated, tapering part with well cuticularized dorso-caudal wall and weakly cuticularized ventro-anterior wall.

Dorsal wall of cloaca completely cuticularized, representing by definition the gubernaculum. However, due to its position partly antero-ventrally and between the spicules it seems not functional in this case.

Tail tapering posteriorly, composed of an annulated anterior part with 9 annules and a long smooth end part counted as one ring. The terminal ring, 67 μm long, consists of a nearly cylindrical anterior part until the peduncle of insertion of the terminal pair of subdorsal setae and a shorter slightly swollen posterior part tapering towards a minute spinneret. The short end part bears on each side a somewhat raised pore (phasmata) situated subventrally; the pore on the right side of the body lies more anteriorly than the pore on the left body side.

Female : not found.

*Juvenile male.* Since only one specimen is available the developmental stage cannot be determined with certainty. Based on the body length and development of the reproductive system it probably belongs to the 3rd juvenile stage.

Body relatively stout, tapering towards the extremities. Cuticle with about 88 narrow homonomous rings bearing numerous hairy spines : 7 μm long in anterior body region, 12 μm long in posterior body region. Fine material and small particles are cought between the hairy spines.

Setal pattern without subventrally inserted somatic setae; subdorsal setae arranged as follows :

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| right side | 6 | 14 | 21 | 31 | 42 | 51 | 61 | 76 | 88 | = 9 |
| left side | 6 | 14 | 21 | 30 | 39 | 48 | 59 | 75 | 88 | = 9 |

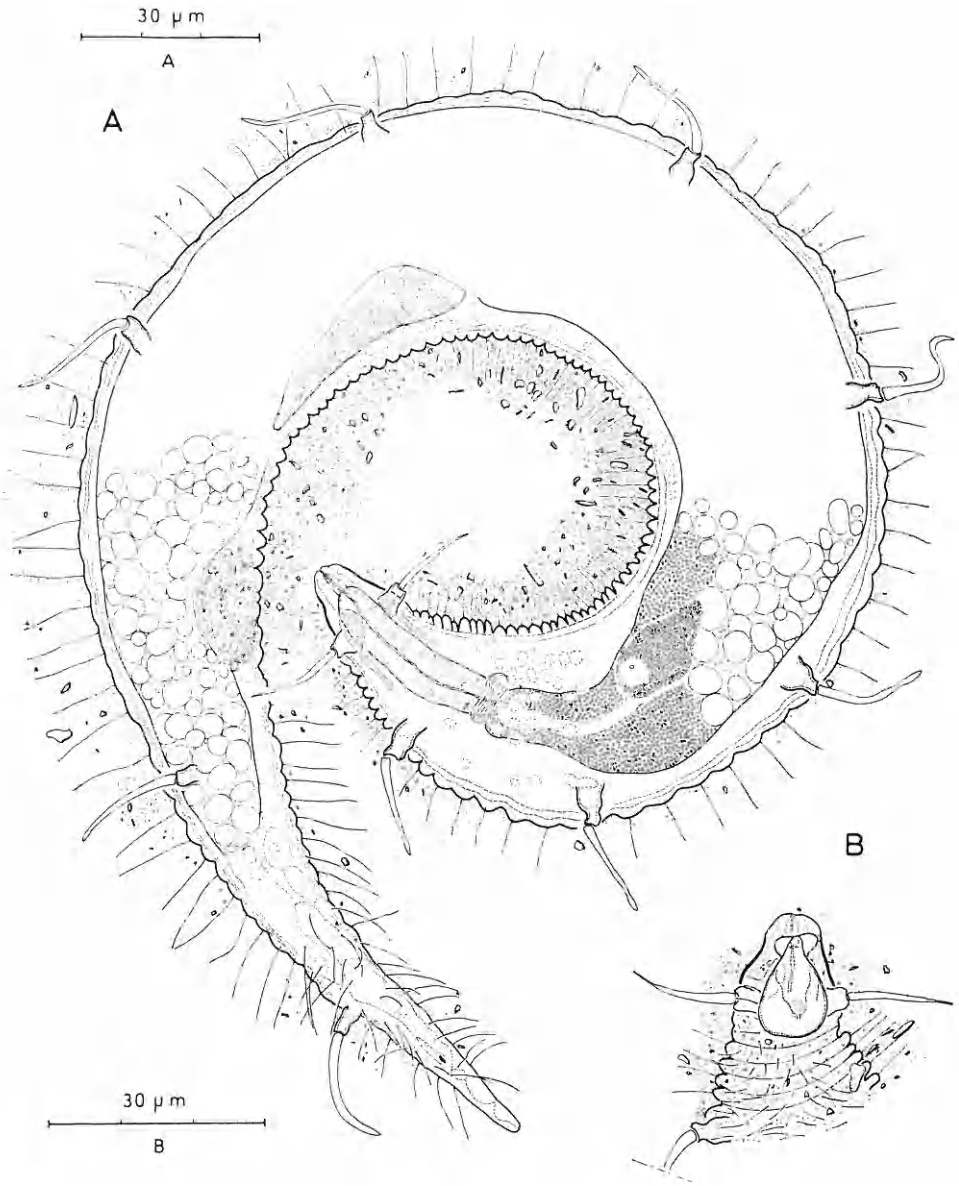



Fig. 5. — *Prototricoma dherdei* sp. nov.

A : juvenile ;
B : surface view of head of juvenile.

The subdorsal setae differ little in length, except for the somewhat shorter two anteriormost pairs and the conspicuously elongated terminal pair. The setae are slender, distally tapered; they all insert on rather high peduncles with glandular basal part.

Head with comparable shape as in the adults; the anterior part however being somewhat broader and less elongated. Cephalic setae fine, as long as the head.

Amphids comparable in shape with the adult, but smaller i.e. restricted to the head; the lower anterior part is less developed, both amphids donot reach each other at this level.

Digestive system as in the adult; intestine with large postrectal blindsac. Rectum fine, rather obscure, ending presumably in ring 70, without protruding tube.

Genital primordium consisting of an elongated cellular mass. An accumulation of numerous cells and nuclei is found along the rectum representing the spicular primordium.

Tail with about 18 annules untill the insertion of the terminal pair of subdorsal setae. Posterior to the latter setae the terminal part is narrow, conical, 33 µm long. The tail is, apart from a short end part, completely provided with hairy spines. No pores were observed.

Diagnosis. *Prototricoma dherdei* sp. nov. is characterized by its general habit with 75-79 homonomous rings and setal pattern with typical desmoscoleecid arrangement and number of setae (8 pairs of subventral, 9 pairs of subdorsal setae); by the long and stout somatic setae with differentiation in shape between the subdorsal and subventral setae, all inserted on high peduncles; by the shape of the head : longer than wide, anteriorly tapered to a narrow truncated end; by the shape of the amphids : thick-walled, complex, anteriorly embracing the head. The male specimens can be recognized by the shape of the spicules : slender, with straight proximal part and slightly arcuated distal part with weakly cuticularized ventral wall.

Discussion

*P. dherlei* sp. nov. differs from the type species *P. longicauda* Timm, 1970 in 1) habit : body stouter, twice as long as in the type species and body annules without a band of long hairy spines as in *P. longicauda;* 2) in setal pattern and length and shape of somatic setae : without differentiation between subdorsal and subventral setae in *P. longicauda;* somatic setae inserted on high peduncles in *P. dherdei* and low, minute peduncles in *P. longicauda;* 3) in head shape : long, clearly anteriorly tapered in *P. dherdei* against broad, rounded with widened truncated anterior end in *P. longicauda;* 4) in shape of the amphids : complex, pear-shaped against rounded in *P. longicauda* and 5) in tail shape : in *P. dherdei* comparable with the tail shape in *Desmoscolex* Clarapède, 1863 i.e. possessing an end ring consisting of a more or less conical anterior part (sometimes slightly annulated) extending to the peduncles of the terminal pair of subdorsal setae and a ventrally bent, slightly swollen smootly posterior part tapering to a distal end with spinneret instead of having a tail without differentiation in a distinct end ring and possessing a largely annulated straight end part posterior to the insertion of the terminal pair of subdorsal setae as in *P. longicauda.*

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