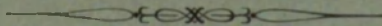


MÉMOIRES
DU
MUSÉE ROYAL D'HISTOIRE NATURELLE
DE BELGIQUE

MÉMOIRE N° 58

VERHANDELINGEN
VAN HET
KONINKLIJK NATUURHISTORISCH MUSEUM
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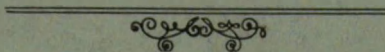


THE
FREELIVING MARINE NEMAS
OF THE BELGIAN COAST. II

WITH GENERAL REMARKS ON THE STRUCTURE AND THE SYSTEM OF NEMAS

BY

L. A. DE CONINCK AND J. H. SCHUURMANS STEKHOVEN Jr.
(Ghent) (Utrecht)



BRUXELLES
MUSÉE ROYAL D'HISTOIRE NATURELLE DE BELGIQUE
RUE VAUTIER, 31

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Voir la liste ci-dessous.

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1. — A. C. SEWARD. *La Flore wealdienne de Bernissart* 1900
2. — G. GILSON. *Exploration de la Mer sur les côtes de la Belgique* 1900
3. — O. ABEL. *Les Dauphins longirostres du Boldérien (Miocène supérieur) des environs d'Anvers. I.* 1901
4. — C. E. BERTRAND. *Les Coprolithes de Bernissart. I. Les Coprolithes attribués aux Iguanodons* 1903

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5. — M. LERICHE. *Les Poissons paléocènes de la Belgique* 1902
6. — O. ABEL. *Les Dauphins longirostres du Boldérien (Miocène supérieur) des environs d'Anvers. II.* 1902
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13. — G. GILSON. *Exploration de la Mer sur les côtes de la Belgique. Variations horaires, physiques et biologiques de la Mer* 1907
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16. — J. LAMBERT. *Description des Echinides crétacés de la Belgique. II. Echinides de l'Etage sénontien.* 1911

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17. — P. MARTY. *Etude sur les Végétaux fossiles du Trieu de Leval (Hainaut).* 1907
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23. — M. LERICHE. *La Faune du Gedinnien inférieur de l'Ardenne* 1912
24. — M. COSSMANN. *Scaphopodes, Gastropodes et Céphalopodes du Montien de Belgique.* 1913

TOME VII. — DEEL VII.

25. — G. GILSON. *Le Musée d'Histoire Naturelle Moderne, sa Mission, son Organisation, ses Droits* 1914
26. — A. MEUNIER. *Microplankton de la Mer Flamande. I. Les Diatomacées : le genre Chaetoceros.* 1913
27. — A. MEUNIER. *Microplankton de la Mer Flamande. II. Les Diatomacées, le genre Chaetoceros excepté.* 1915

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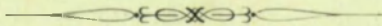
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30. — M. GOETGHEBUER. *Ceratopogoninae de Belgique* 1920
31. — M. GOETGHEBUER. *Chironomides de Belgique et spécialement de la zone des Flandres* 1921
32. — M. LERICHE. *Les Poissons néogènes de la Belgique* 1926
33. — M. ASSELBERGHS. *La Faune de la Grauwacke de Rouillon (base du Dévonien moyen).* 1923

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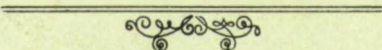


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INTRODUCTION

Sooner than expected a second monograph on the free-living marine nemas of the Belgian Coast proved to be necessary. Collections of mud and sand made in the environment of the Canal of Zeebrugge, between Heyst and Zeebrugge (LELOUP), made in and around the harbour of Ostende (DE CONINCK, DE SAEDELEER), made in the Zwyn (DE CONINCK), contained a bulk of very interesting forms. In total no less than 2,408 individuals were studied, divided over 63 species, belonging to 39 Genera.

Moreover the study of the structure of these nemas revealed to us a quantity of new facts, which may help to give a better understanding of some nemic features and do as to our opinion throw a new light on the systematic relationships of several of the studied forms (Confer the General Part IV, pp. 21-24, where the relationship of *Araeolaimus* is treated).

Meanwhile the number of species found in this region raised to 85, more than the double of former records.

The study of the nemic fauna of the Belgian Coast is of special importance as may easily be understood. The Zwyn reaches to the Dutch frontier and partly even surpasses it. In its interior the water is brackish; to the west its salinity equals that of the North Sea. Opposite to the Zwyn, on the island Walcheren lays Veere and other places along the Schelde, which DE MAN studied in former years. So it was certainly no pure luck that we rediscovered several of the species described by DE MAN during the period running from 1888-1893 and not found back until now.

At the other hand the Belgian Coast water stays in continual communication with the coastal seas of France and England, which point was already mentioned in the first monograph (SCHUURMANS STEKHOVEN & ADAM).

The scope of the present work (which is the result of 2 years intimate collaboration), was not only to enlarge our knowledge of the marine freeliving nemas of the Belgian Coast, but also to find out the relationships of the treated nemas and to give a better understanding of the structure of marine nemas in general.

Since we have made a thorough examination of several genera and of the families to which they belong, a regrouping of the freeliving marine nemas proved to be necessary.

At the other hand this study brought us to synonymize many species and even Genera. This is no surprise when one takes into consideration that several authors have not given themselves enough trouble to make an elaborate study of the present literature while others apparently had an incomprehensible lack of understandig of nemic structure and of the fact that this may change in different manners after fixation!



GENERAL PART

I. — COMPOSITION OF SEVERAL BIOCOENOSES.

We have studied the nemic faunas of 10 samples of marine habitats. The samples were sieved through several sieves of fine gauze, composed of different kinds of plankton-netting. So we could be rather sure to collect all nemas present in a certain sample. This quantitative method gives a much better output than a picking out of nemas at random and is absolutely required when different biocoenoses should be compared.

The following Tables give a survey of the obtained results.

TABLE I

Oostende, breakwater on the South-side of the harbour entrance; IX-1931; coll. DE SAEDWLEER.

N.	ORDER	SPECIES	JUV.	♀	♂	TOTAL	%
1.	C.	<i>Chromadora nudicapitata</i>	26	130	114	270	60,4
2.	M.	<i>Theristus acer</i>	23	28	9	60	13,42
3.	M.	<i>Monhystera parva</i>	7	15	9	31	6,93
4.	M.	<i>Monhystera disjuncta</i>	10	8	8	26	5,72
5.	C.	<i>Chromadorina macrolaima</i>	1	5	7	13	2,91
6.	E.	<i>Metaparancholaimus campylocercus</i>	10	—	1	11	2,46
7.	C.	<i>Paracanthochus caecus</i>	9	2	—	11	2,46
8.	Ar.	<i>Axonolaimus paraspinosus</i>	4	2	1	7	1,56
9.	C.	<i>Chromadora</i> spec. (<i>kreisi</i> ?)	—	3	—	3	0,67
10.	E.	<i>Enoplus communis</i>	2	—	—	2	0,45
11.	E.	<i>Oncholaimellus calvadosicus</i>	1	—	1	2	0,45
12.	Ar.	<i>Odontophora armata</i>	1	—	1	2	0,45
13.	Ar.	<i>Halaphanolaimus pellucidus</i>	1	—	1	2	0,45
14.	C.	<i>Prochromadorella germanica</i>	—	—	1	1	0,22
15.	C.	<i>Chromadorina microlaima</i>	—	1	—	1	0,22
16.	C.	<i>Sabatieria vulgaris</i>	1	—	—	1	0,22
17.	M.	<i>Theristus setosus</i>	—	1	—	1	0,22
18.	M.	<i>Theristus</i> spec.	1	—	—	1	0,22
19.	M.	<i>Monhystera</i> spec. 1	1	—	—	1	0,22
20.	M.	<i>Monhystera</i> spec. 2	1	—	—	1	0,22

TOTAL.. 99 195 153 447 100

Nemic index : 13,1.

Division of the specimens after the orders :

<i>Chromadoroidea</i>	300	67,16
<i>Monhysteroidea</i>	121	26,95
<i>Enoploidea</i>	15	3,36
<i>Araeolaimoidea</i>	11	2,46

Sand and mud. The sample contained many Algae, a great number of annelids, Hydrozoa and mussels. Ebb tide.

TABLE II

Oostende, breakwater; 18-XI-1931; NaCl : 30,77 ‰.

N.	ORDER	SPECIES	JUV.	♀	♂	TOTAL	%
1.	M.	<i>Theristus acer</i> ...	83	48	29	160	46,5
2.	M.	<i>Monhystera microphthalma</i>	9	20	11	40	11,6
3.	C.	<i>Paracanthochus caecus</i>	16	10	14	40	11,6
4.	C.	<i>Microlaimus honestus</i>	7	3	12	22	6,4
5.	An.	<i>Rhabditis marina</i>	17	1	1	19	5,5
6.	C.	<i>Chromadora nudicapitata</i>	3	5	9	17	4,9
7.	M.	<i>Theristus calceolatus</i>	5	3	2	10	2,9
8.	Ar.	<i>Araeolaimus filipjevi</i>	5	1	1	7	2
9.	E.	<i>Oncholaimus brachycercus</i>	2	2	3	7	2
10.	Ar.	<i>Triploides marinus</i>	2	1	3	6	1,7
11.	E.	<i>Enoplus communis</i>	4	—	1	5	1,4
12.	C.	<i>Chromadorita obtusidens</i>	2	2	—	4	1,1
13.	Ar.	<i>Axonolaimus spinosus</i>	2	—	1	3	0,8
14.	C.	<i>Chromadorina macrolaima</i>	—	—	1	1	0,29
15.	Ar.	<i>Ascolaimus elongatus</i>	—	1	—	1	0,29
16.	M.	<i>Theristus setosus</i>	—	—	1	1	0,29
17.	C.	<i>Chromadora spec.</i>	—	1	—	1	0,29
TOTAL...			157	98	89	344	100

Division of the specimens after the orders :

<i>Monhysteroidea</i>	211	61,3
<i>Chromadoroidea</i>	85	24,7
<i>Anguilluloidea</i>	19	5,5
<i>Araeolaimoidea</i>	17	4,9
<i>Enoploidea</i>	12	3,4

A biocoenosis of Algae and mussels attached to stones. Ebb tide.

TABLE III

Oostende, breakwater; 30-XII-1931; snow; NaCl : 16,4 ‰.

N.	ORDER	SPECIES	JUV.	♀	♂	TOTAL	%
1.	C.	<i>Sabatieria vulgaris</i>	—	2	—	2	6,45
2.	C.	<i>Dichromadora</i> spec.	—	—	—	1	3,23
3.	M.	<i>Monhystera</i> spec.	—	—	—	1	3,23
?		not identifiable	—	—	—	27	87,09
TOTAL...			—	—	—	31	100

Sand and shells between stones; second break-water to the South side of the harbour entrance.

TABLE IV

Oostende; mud from a moat round the fortress before the light-house;
18-XI-1931; NaCl : 14,7 ‰.

N.	ORDER	SPECIES	JUV.	♀	♂	TOTAL	%
1.	E.	<i>Oncholaimus oxyuris</i>	2	—	—	2	66,66
2.	E.	<i>Adoncholaimus thalassophygas</i>	1	—	—	1	33,33
TOTAL...			3	—	—	3	100

TABLE V

Oostende, sand with shells from a puddle on the strand at the side of a breakwater;
18-XI-1931; NaCl : 29,3 ‰.

N.	ORDER	SPECIES	JUV.	♀	♂	TOTAL	%
1.	An.	<i>Rhabditis marina</i>	10	1	1	12	27,90
2.	Ar.	<i>Ascotaimus elongatus</i>	1	4	2	7	16,28
3.	M.	<i>Monhystera</i> spec.	6	—	1	7	16,28
4.	M.	<i>Theristus acer</i>	—	4	1	5	11,63
5.	E.	<i>Enoplolaimus propinquus</i>	4	—	—	4	9,30
6.	C.	<i>Paracanthonus caecus</i>	1	—	—	1	2,32
7.	C.	<i>Dichromadora hyalocheile</i>	—	—	1	1	2,32
8.	C.	<i>Cyatholaimus</i> spec.	—	1	—	1	2,32
9.	Ar.	<i>Odontophora longicaudata</i>	1	—	—	1	2,32
10.	Ar.	<i>Bathylaimus paralongisetosus</i>	—	—	1	1	2,32
11.	Ar.	<i>Bathylaimus stenolaimus</i>	—	1	—	1	2,32
12.	Ar.	<i>Leptolaimus setiger</i>	—	1	—	1	2,32
13.	M.	<i>Steineria mirabilis</i>	—	—	1	1	2,32
TOTAL...			23	13	7	43	100

Division of the specimens after the orders :

<i>Monhysteroidea</i>	13	30,23
<i>Anguilluloidea</i>	12	27,90
<i>Araeolaimoidea</i>	11	25,58
<i>Enoploidea</i>	4	9,30
<i>Chromadoroidea</i>	3	6,98

TABLE VI

Heyst-Zeebrugge; sand on the strand; 2-IX-1931; coll. LELOUP.

N.	ORDER	SPECIES	JUV.	♀	♂	TOTAL	%
1.	M.	<i>Theristus calceolatus</i>	236	310	203	749	79,1
2.	E.	<i>Oncholaimellus calvadosicus</i>	53	11	14	78	8,22
3.	C.	<i>Chromadorina microlaima</i>	9	22	9	40	4,22
4.	Ar.	<i>Ascolaimus elongatus</i>	23	2	—	25	2,64
5.	Ar.	<i>Odontophora armata</i>	11	1	1	13	1,37
6.	M.	<i>Theristus tenuispiculum</i>	1	2	5	8	0,84
7.	M.	<i>Theristus setosus</i>	—	3	3	6	0,63
8.	Ar.	<i>Odontophora</i> spec.	2	3	—	5	0,52
9.	Ar.	<i>Bathylaimus macramphis</i>	—	—	3	3	0,31
10.	M.	<i>Theristus normandicus</i>	—	—	3	3	0,31
11.	M.	<i>Eleutherolaimus stenosoma</i>	2	—	1	3	0,31
12.	C.	<i>Microlaimus honestus</i>	1	1	—	2	0,21
13.	Ar.	<i>Camacolaimus longicauda</i>	—	1	1	2	0,21
14.	E.	<i>Oxyonchus</i> spec.	1	—	—	1	0,10
15.	E.	<i>Oncholaimus</i> spec.	—	1	—	1	0,10
16.	C.	<i>Desmodora serpentulus</i>	—	—	1	1	0,10
17.	C.	<i>Sabatieria vulgaris</i>	—	1	—	1	0,10
18.	C.	<i>Odontonema</i> spec.	1	—	—	1	0,10
19.	C.	<i>Oistolaimus suecicus</i>	—	—	1	1	0,10
20.	C.	<i>Chromadorid</i> spec.	1	—	—	1	0,10
21.	Ar.	<i>Dermatolaimus elegans</i>	—	1	—	1	0,10
22.	M.	<i>Theristus parasetosus</i>	—	1	—	1	0,10
23.	M.	<i>Theristus acer</i>	—	—	1	1	0,10
TOTAL...			341	361	245	947	100

Division of the specimens after the orders :

<i>Monhysteroidea</i>	771	81,41
<i>Enoploidea</i>	80	8,44
<i>Araeolaimoidea</i>	49	5,17
<i>Chromadoroidea</i>	47	4,93

TABLE VII

Knokke-Zoute, breakwater; 28-XI-1931.

N.	ORDER	SPECIES	JUV.	♀	♂	TOTAL	%
1.	E.	<i>Enoplus communis</i>	3	1	1	5	35,71
2.	C.	<i>Chromadorita longisetosa</i>	—	—	3	3	21,43
3.	M.	<i>Theristus acer</i>	1	2	—	3	21,43
4.	C.	<i>Paracanthochus caecus</i>	—	1	—	1	7,14
5.	C.	<i>Sabatieria quadripapillata</i>	—	1	—	1	7,14
6.	M.	<i>Theristus normandicus</i>	—	—	1	1	7,14
TOTAL...			4	5	5	14	100

Nemic index : 0,3.

Division of the specimens after the orders :

<i>Enoploidea</i>	5	35,71
<i>Chromadoroidea</i>	5	35,71
<i>Monhysteroidea</i>	4	28,57

Sand and shells between stones, with *Mytilus* and *Tellina*. Break-water, situated just over the hôtel « Shakespeare ». Water : 7°C. Ebb tide.

TABLE VIII

Knokke-Zoute, sea-weed on stones along the strand; 28-XII-1931; NaCl : 32,17 ‰.

N.	ORDER	SPECIES	JUV.	♀	♂	TOTAL	%
1.	C.	<i>Chromadora nudicapitata</i>	—	1	3	4	26,66
2.	C.	<i>Chromadorita obtusidens</i>	—	2	2	4	26,66
3.	M.	<i>Monhystera disjuncta</i>	3	—	1	4	26,66
4.	E.	<i>Enoplus communis</i>	1	—	—	1	6,66
5.	C.	<i>Paracanthochus caecus</i>	—	1	—	1	6,66
6.	C.	<i>Chromadorita longisetosa</i>	—	1	—	1	6,66
TOTAL...			4	5	6	15	100

Nemic index : 0,46.

Division of the specimens after the orders :

<i>Chromadoroidea</i>	10	66,66
<i>Monhysteroidea</i>	4	26,66
<i>Enoploidea</i>	1	6,66

Abri on the strand, overgrown with Algae; ebb tide. Many Nauplii.

TABLE IX

Zwyn, sand and Enteromorpha between poles; 28-XII-1931; NaCl: 27,2 ‰

N.	ORDER	SPECIES	JUV.	♀	♂	TOTAL	%
1.	C.	<i>Chromadora nudicapitata</i>	1	26	8	35	53,03
2.	E.	<i>Enoplolaimus propinquus</i>	5	1	2	8	12,12
3.	M.	<i>Theristus tenuispiculum</i>	1	2	1	4	6,06
4.	M.	<i>Theristus spec.</i>	—	3	—	3	4,54
5.	Ar.	<i>Tripyloides septentrionalis</i>	2	1	—	3	4,54
6.	E.	<i>Syringolaimus striaticaudatus</i>	1	—	1	2	3,03
7.	C.	<i>Cyatholaimus punctatus</i>	—	1	1	2	3,03
8.	C.	<i>Neochromadora poecilosoma</i>	—	2	—	2	3,03
9.	M.	<i>Theristus longisetosus</i>	—	1	1	2	3,03
10.	E.	<i>Metaparancholaimus campylocercus</i>	1	—	—	1	1,51
11.	E.	<i>Viscosia viscosa</i>	—	—	1	1	1,51
12.	C.	<i>Oistolaimus suecicus</i>	1	—	—	1	1,51
13.	M.	<i>Theristus setosus</i>	—	—	—	1	1,51
14.	M.	<i>Monhystera microphthalma</i>	—	1	—	1	1,51
TOTAL...			12	38	16	66	100

Nemic index : 2.

Division of the specimens after the orders :

<i>Chromadoroidea</i>	40	60,6
<i>Enoploidea</i>	12	18,18
<i>Monhysteroidea</i>	11	15,5
<i>Araeolaimoidea</i>	3	4,54

The habitat is situated just opposite to the hotel « 't Zwyn ».

TABLE X

Zwyn, sand and organic detritus from a shallow channel; 28-XII-1931; NaCl: 21 ‰

N.	ORDER	SPECIES	JUV.	♀	♂	TOTAL	%
1.	Ar.	<i>Bathylaimus assimilis</i>	25	168	79	272	54,61
2.	M.	<i>Theristus acer</i>	26	11	9	46	9,23
3.	M.	<i>Monhystera parva</i>	15	17	8	40	8,02
4.	C.	<i>Chromadora nudicapitata</i>	11	16	6	33	6,60
5.	Ar.	<i>Ascolaimus elongatus</i>	9	6	5	20	4,01
6.	C.	<i>Microlaimus marinus</i>	—	17	2	19	3,81
7.	C.	<i>Hypodontolaimus striatus</i>	2	5	5	12	2,40
8.	Ar.	<i>Tripyloides marinus</i>	3	4	4	11	2,20
9.	E.	<i>Metaparancholaimus campylocercus</i>	4	2	—	6	1,20
10.	E.	<i>Oncholaimus oxyuris</i>	5	4	1	10	2

THE FREELIVING MARINE NEMAS OF THE BELGIAN COAST. II 11

N.	ORDER	SPECIES	Juv.	♀	♂	TOTAL	%
11.	M.	<i>Theristus longisetosus</i>	—	3	3	6	1,20
12.	E.	<i>Trefusia longicauda</i>	—	4	1	5	1
13.	M.	<i>Theristus acrilabiatus</i>	2	2	1	5	1
14.	M.	<i>Eleutherolaimus stenosoma</i>	5	—	—	5	1
15.	C.	<i>Microlaimus robustidens</i>	—	—	2	2	0,40
16.	C.	<i>Microlaimus acuticaudatus</i>	—	2	—	2	0,40
17.	E.	<i>Oncholaimellus calvadosicus</i>	—	1	—	1	0,20
18.	E.	<i>Anoplostoma blanchardi</i>	1	—	—	1	0,20
19.	M.	<i>Monhystera microphthalma</i>	—	—	1	1	0,20
20.	Ar.	<i>Cephalobus oxyuroides</i>	—	—	1	1	0,20
TOTAL...			108	262	128	498	100

Nemic index : 12,45.

Division of the specimens after the orders :

<i>Araeolaimoidea</i>	303	60,82
<i>Monhysteroidea</i>	103	20,66
<i>Chromadoroidea</i>	68	13,61
<i>Enoploidea</i>	23	4,60
<i>Anguilluloidea</i>	1	0,20

Mud mixed with fine sand and decaying roots of *Statice limonium* L.

*
**

From the biocoenotic Tables special conclusions cannot be drawn. For instance the composition of these biocoenoses differs quite at one hand from what is known about the biocoenoses in the Zuiderzee where in many instances *Sabatieria vulgaris* (De Man) prevailed, in a few cases *Anoplostoma spinosum* (Buetschli) was the leading form (Schuermans Stekhoven 1931).

Comparing our present data with the results of De Coninck's researches about the nemic faunas of the Zwyn 1931a, the same thing can be said. At that time De Coninck studied particularly biocoenoses with a salinity not surpassing 20 ‰ in the brackish soil, whereas the brackish water explored by him at that time possessed a salinity of about 5 ‰ just as much as Filipjev 1929-1930 found in the Gulf of Finland.

Most species of the last mentioned biocoenoses of De Coninck were fresh-water forms, 15 of 22 or 68 %, whereas 7 of 22 or 32 % consisted of brackish to marine species (6 being pure brackish, only one being a marine form).

The higher salinity of the brackish soil is also expressed in the higher percentage of brackish species found in that locality, 10 of 18 or 55,5 % being fresh-water species and 8 of 18 or 45 % brackish (6 being pure brackish, 2 marine).

During the present research of the nemic fauna of the Zwyn 2 localities were studied with a salinity of respectively 21 ‰ and 27,2 ‰; in the first

locality only a single specimen of the fresh-water form *Cephalobus oxyuroides* De Man was discovered (1 among 498 specimens). In each case there was a leading form which however differed in most instances. This leading form was *Chromadora nudicapitata* Bastian in the biocoenoses 1 and 9, *Bathylaimus assimilis* De Man in biocoenosis 10, *Theristus calceolatus* De Coninck & Schuurmans Stekhoven in the biocoenosis 6 and *Theristus acer* Bastian in biocoenosis 2.

It is evident, that the number of studied biocoenoses is too small to permit us of finding out any reason for the predomination of a certain form. We may only point to the fact that in the 3 biocoenoses where *Chromadoridae* prevailed an *Enteromorpha*-species was abundant, whereas the *Monhysteridae* prevailed in biocoenoses consisting mainly of sand and shells. The numerous specimens of *Bathylaimus assimilis* were found among decaying leafs of *Statice limonium*, growing in the sand in a shallow channel filled with brackish water.

II. — SURVEY OVER THE MARINE AND BRACKWATER SPECIES OF FREELIVING NEMAS OF THE BELGIAN COAST WITH ZOOGEOGRAPHICAL DATA.

The following Table is only given for the purpose of a survey of the forms, which the faunas of other localities have in common with the Belgian fauna. A comparison of the columns 3 and 5 of the left half of the table shows how the number of species increases together with a more intensive exploration and with the examination of biocoenoses of different character.

This may at least partially explain the differences between the habitats enumerated under the heading : zoogeographical survey. Those habitats which were most intensily explored have at the same time the greatest number of species in common with our fauna.

Since the different biocoenoses were hitherto insufficiently characterised no analysis nor conclusion is possible. For the composition of the different biocoenoses confer the Tables I-X, pages 5-11.

TABLE XI

**47 SPECIES NEW TO THE BELGIAN FAUNA,
marked with an asterisk, under which 14 new to science.**

NUMBER	SPECIES	HISTORICAL SURVEY.					ZOOGEOGRAPHICAL SURVEY					
		De Coninck, 1930.	De Coninck, 1931 a.	Schuurmans-Stekhoven et Adam, 1934.	De Coninck, 1932.	Present material.	ATLANTIC COAST OF EUROPA.	CHANNEL.	NORTH SEA.			
									Walcheren.	Zuiderzee.	Helgoland.	Danmark, Norway, Kristineberg.
	ORDER ENOPLOIDEA											
	FAM. LEPTOSOMATIDAE											
1	<i>Anticoma limalis</i> BASTIAN	—	—	+	—	—	+	+	+	—	+	+
2	<i>Cycolaimus magnus</i> (VILLOT).	—	—	+	—	—	+	+	—	+	+	+
3	<i>Stenolaimus marioni</i> SOUTHERN	—	—	+	—	—	+	—	—	—	+	—
4	<i>Thoracostoma trichodes</i> (LEUCKART)	—	—	+	—	—	+	+	+	+	+	+
5	<i>Synonchus fasciculatus</i> (COBB) (syn. : <i>Fiacra brevisetosa</i> SOUTHERN.)	—	—	+	—	—	+	—	—	+	—	—
	FAM. ENOPLIDAE											
6	<i>Enoplus communis</i> BASTIAN	+	+	+	—	+	+	+	+	+	+	+
7	* <i>Enoplolaimus propinquus</i> DE MAN	—	—	—	—	+	—	—	+	—	—	+
8	<i>Oxyonchus dentatus</i> (DITLEVSEN)	—	—	+	—	—	—	—	—	—	+	+
	FAM. OXYSTOMIDAE											
9	* <i>Trefusia longicauda</i> DE MAN	—	—	—	—	+	—	+	—	+	+	+
	FAM. ONCHOLAIMIDAE											
10	* <i>Oncholaimellus calvadosicus</i> DE MAN	—	—	—	—	+	—	+	—	—	+	—
11	<i>Adoncholaimus thalassophygas</i> (DE MAN).	+	+	—	—	+	—	—	+	+	+	+
12	<i>Metaparoncholaimus campylocercus</i> (DE MAN)	—	—	+	—	+	—	—	—	—	—	—
13	* <i>Oncholaimus brachycercus</i> DE MAN	—	—	—	—	+	—	+	+	+	+	+
14	<i>Oncholaimus oxyuris</i> DITLEVSEN	—	—	—	+	+	—	—	—	—	—	+
15	<i>Metoncholaimus pristiurus</i> (ZURSTRASSEN)	—	—	+	—	—	—	—	—	+	—	—
16	* <i>Viscosia viscosa</i> (BASTIAN).	—	—	—	—	+	—	+	+	—	+	+
17	<i>Anoplostoma blanchardi</i> DE MAN	+	+	—	—	+	—	—	+	—	—	—
	FAM. DORYLAIMIDAE											
18	<i>Syringolaimus striaticaudatus</i> DE MAN	—	+	—	+	+	—	—	+	—	+	—

ORDER CHROMADOROIDEA

FAM. CYATHOLAIMIDAE

19	<i>Paracyatholaimus intermedius</i> (DE MAN)	+	+	-	-	-	-	-	+	-	-	-	+
20	* <i>Cyatholaimus punctatus</i> BASTIAN	-	-	-	-	+	-	+	-	-	+	+	-
21	<i>Cyatholaimus demani</i> FILIPIEV.	-	-	+	-	+	+	+	+	+	+	+	+
22	* <i>Paracanthonchus caecus</i> (BASTIAN)	-	-	-	-	+	-	+	+	+	+	+	+
23	<i>Paracanthonchus spectabilis</i> ALLGÉN	-	-	+	-	+	-	-	-	-	-	+	-

FAM. CHOANOLAIMIDAE

24	<i>Halichoanolaimus robustus</i> BASTIAN	-	-	+	-	-	+	+	+	-	+	+	+
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FAM. DESMODORIDAE

25	* <i>Desmodora serpentulus</i> DE MAN	-	-	-	-	+	-	+	+	-	+	+	+
26	<i>Monoposthia costata</i> DE MAN	-	-	+	-	-	-	+	+	-	+	+	+
27	* <i>Oistolaimus suecicus</i> ALLGÉN	-	-	-	-	+	-	-	-	-	-	+	+

FAM. CHROMADORIDAE

28	* <i>Chromadorina macrolaima</i> (DE MAN)	-	-	-	-	+	-	-	+	-	-	+	+
29	<i>Chromadorina microlaima</i> (DE MAN)	-	-	+	-	+	-	-	+	+	+	+	+
30	* <i>Neochromadora poecilosoma</i> (DE MAN)	-	-	-	-	+	-	+	+	+	+	+	+
31	* <i>Prochromadorella germanica</i> (BUETSCHLI)	-	-	-	-	+	+	+	+	+	+	+	+
32	* <i>Chromadora nudicapitata</i> BASTIAN	-	-	-	-	+	+	+	+	+	+	+	+
33	<i>Chromadora cephalata</i> DE MAN	-	-	+	-	-	-	-	+	-	-	+	+
34	<i>Chromadora kreisi</i> SCHUURMANS STEKHOVEN & ADAM.	-	-	+	-	-	-	+	-	-	-	-	-
35	<i>Chromadorita obtusidens</i> SCHUURMANS STEKHOVEN & ADAM	-	-	+	-	+	-	-	-	-	-	-	-
36	* <i>Chromadorita longisetosa</i> DE CONINCK & SCHUURMANS STEKHOVEN	-	-	-	-	+	-	-	-	-	-	-	-
37	* <i>Dichromadora hyalocheile</i> DE CONINCK & SCHUURMANS STEKHOVEN	-	-	-	-	+	-	-	-	-	-	-	-
38	<i>Pareuchromadora amphidiscata</i> SCHUURMANS STEKHOVEN & ADAM	-	-	+	-	-	-	-	-	-	-	-	-
39	<i>Hypodontolaimus inaequalis</i> (BASTIAN)	-	-	+	-	-	-	+	+	-	+	+	+
40	* <i>Hypodontolaimus bütschlii</i> FILIPIEV.	-	-	-	-	+	-	-	-	+	+	+	+
41	<i>Spilophorella papillata</i> KREIS	-	-	+	-	-	-	+	-	+	+	+	+
42	<i>Spilophorella paradoxa</i> DE MAN	-	-	+	-	-	-	-	+	+	+	+	+

FAM. COMESOMIDAE

43	* <i>Sabatieria vulgaris</i> (DE MAN)	-	-	-	-	+	-	-	+	+	+	+	-
44	* <i>Sabatieria quadripapillata</i> FILIPIEV.	-	-	-	-	+	-	-	-	-	-	-	-

NUMBR	SPECIES	HISTORICAL SURVEY.					ZOOGEOGRAPHICAL SURVEY						
		De Coninck, 1930.	De Coninck, 1931 a.	Schuurmans-Stekhoven et Adam, 1931.	De Coninck, 1932.	Present material.	ATLANTIC COAST OF EUROPA.	CHANNEL.	NORTH SEA.				BALTIC.
									Walcheren.	Zuiderzee.	Helgoland.	Danmark, Norway, Kristineberg.	
	FAM. MIGROLAIMIDAE												
45	* <i>Microlaimus acuticaudatus</i> SCHUURMANS STEKHOVEN & DE CONINCK	-	-	-	-	+	-	-	-	-	-	-	-
46	<i>Microlaimus globiceps</i> DE MAN.	+	+	-	-	-	-	-	+	-	-	-	+
47	* <i>Microlaimus honestus</i> DE MAN	-	-	-	-	+	-	-	+	-	-	+	+
48	* <i>Microlaimus marinus</i> (SCHULZ)	-	-	-	-	+	-	-	-	-	-	-	+
49	* <i>Microlaimus robustidens</i> SCHUURMANS STEKHOVEN & DE CONINCK	-	-	-	-	+	-	-	-	-	-	-	-
	ORDER ARAEOLAIMOIDEA												
	FAM. AXONOLAIMIDAE												
50	<i>Araeolaimus filipjevi</i> SCHUURMANS STEKHOVEN & ADAM.	-	-	+	-	+	-	-	-	-	-	-	-
51	* <i>Ascolaimus elongatus</i> (BUETSCHLI)	-	-	-	-	+	-	-	+	+	+	+	+
52	<i>Axonolaimus paraspinosus</i> SCHUURMANS STEKHOVEN & ADAM	-	-	+	-	+	-	-	-	+	-	-	+
53	* <i>Axonolaimus spinosus</i> (BUETSCHLI)	-	-	-	-	+	-	-	+	+	+	+	+
54	* <i>Odontophora armata</i> (DITLEVSEN)	-	-	-	-	+	-	-	-	-	+	+	+
55	* <i>Odontophora longicaudata</i> SCHUURMANS STEKHOVEN & DE CONINCK	-	-	-	-	+	-	-	-	-	-	-	-
	FAM. CAMACOLAIMIDAE												
56	* <i>Camacolaimus longicauda</i> DE MAN	-	-	-	-	+	-	-	-	+	+	+	-
57	<i>Camacolaimus tardus</i> DE MAN	-	-	+	-	-	-	-	+	+	+	-	+
	FAM. HALAPHANOLAIMIDAE												
58	<i>Deontolaimus papillatus</i> DE MAN	+	+	-	-	-	-	-	+	-	-	-	-
59	* <i>Dermatolaimus elegans</i> SCHUURMANS STEKHOVEN & DE CONINCK	-	-	-	-	+	-	-	-	-	-	-	-
60	* <i>Halaphanolaimus pellucidus</i> SOUTHERN	-	-	-	-	+	+	-	-	-	-	+	-
61	* <i>Leptolaimus setiger</i> SCHUURMANS STEKHOVEN & DE CONINCK	-	-	-	-	+	-	-	-	-	-	-	-

FAM. TRIPYLOIDIDAE													
62	* <i>Bathylaimus assimilis</i> DE MAN	-	-	-	-	+	-	-	+	-	-	-	
63	<i>Bathylaimus filicaudatus</i> (SCHUURMANS STEKHOVEN & ADAM)	-	-	+	-	-	-	-	-	-	-	-	
64	* <i>Bathylaimus macramphis</i> SCHUURMANS STEKHOVEN & DE CONINCK	-	-	-	-	+	-	-	-	-	-	-	
65	* <i>Bathylaimus paralongisetosus</i> SCHUURMANS STEKHOVEN & DE CONINCK	-	-	-	-	+	-	-	-	-	-	-	
66	* <i>Bathylaimus stenolaimus</i> SCHUURMANS STEKHOVEN & DE CONINCK	-	-	-	-	+	-	-	-	-	-	-	
67	* <i>Tripyloides marinus</i> (BUETSCHLI)	-	-	-	-	+	-	-	+	-	+	-	
68	<i>Tripyloides septentrionalis</i> DE CONINCK & SCHUURMANS STEKHOVEN.	-	-	+	-	+	-	-	-	+	-	+	
ORDER MONHYSTEROIDEA													
FAM. MONHYSTERIDAE													
69	* <i>Theristus setosus</i> (BUETSCHLI)	-	-	-	-	+	-	+	+	+	+	+	
70	* <i>Theristus parasetosus</i> ALLGÉN	-	-	-	-	+	-	-	-	-	+	-	
71	* <i>Theristus acrilabiatus</i> DE CONINCK & SCHUURMANS STEKHOVEN	-	-	-	-	+	-	-	-	-	-	-	
72	* <i>Theristus normandicus</i> DE MAN	-	-	-	-	+	+	+	-	+	+	+	
73	<i>Theristus acer</i> BASTIAN.	-	-	+	-	+	+	+	+	+	+	+	
74	* <i>Theristus calceolatus</i> DE CONINCK & SCHUURMANS STEKHOVEN.	-	-	-	-	+	-	-	-	-	-	-	
75	* <i>Theristus longisetosus</i> SCHUURMANS STEKHOVEN & DE CONINCK	-	-	-	-	+	-	-	-	-	-	-	
76	* <i>Theristus tenuispiculum</i> (DITLEVSEN).	-	-	-	-	+	-	-	-	+	-	+	
77	* <i>Steinera mirabilis</i> SCHUURMANS STEKHOVEN & DE CONINCK	-	-	-	-	+	-	-	-	-	-	-	
78	<i>Monhystera microphthalma</i> DE MAN.	+	+	-	-	+	-	-	+	+	-	+	
79	* <i>Monhystera disjuncta</i> BASTIAN	-	-	-	-	+	-	+	+	-	+	+	
80	<i>Monhystera ocellata</i> BUETSCHLI	+	+	-	-	-	-	-	+	-	-	+	
81	* <i>Monhystera parva</i> (BASTIAN)	-	-	-	-	+	-	+	+	+	+	+	
82	* <i>Eleutherolaimus stenosoma</i> (DE MAN)	-	-	-	-	+	-	-	+	+	+	+	
FAM. SPHAEROLAIMIDAE													
83	<i>Sphaerolaimus gracilis</i> DE MAN	+	+	-	-	-	-	-	+	+	-	-	
ORDER ANGUILLULOIDEA													
FAM. ANGUILLULIDAE													
84	* <i>Rhabditis marina</i> BASTIAN	-	-	-	-	+	-	+	-	-	+	+	
85	<i>Cephalobus oxyuroides</i> DE MAN	+	+	-	-	+	-	-	-	-	-	-	
TOTAL.		10	11	27	2	63	12	24	34	28	31	45	44

III. — GENERAL MORPHOLOGICAL REMARKS.

Nemas are in general built after a fixed scheme which stays in close connection with one of the most characteristic features of nemas : their eutely.

Indeed there exist great differences as to their morphology between the unnumbered species, but this is due for a great deal to the adaptation of the representants of this phylum to all kinds of life (nutrition, kind of substratum on or in which a nema lives). This adaptation took place ere long. We get the impression that nemas have lost this adaptability, since the present species, considered as certain units, almost present no variation in their organisation.

When one studies a certain species, the number of the labial papillae, cephalic setae, the structure of the amphids, the architecture of the oral cavity and so many other features are quite constant in all representants of such a species, at least when fullgrown specimens are taken into consideration.

A. — Growth phenomena.

Larvae may show slight deviations from fullgrown individuals. This deviation may find its expression in an incomplete development of the sense organs (papillae, setae). The larvae of *Sphaerolaimus* for instance miss the hindmost crown of cephalic setae, whereas the other crowns of cephalic setae have not yet reached their full development.

Another phenomenon of the same origin is given by the change of the proportions in an individual during growth.

A typical example for such a process was discovered by the present authors during their study of *Ascolaimus elongatus* (Buetschli), Schuurmans Stekhoven & De Coninck 1932a and 1932b. (Cf. Table XII.)

TABLE XII

	Absolute bodylength in μ	Absolute bodywidth in μ	Absolute taillength in μ	Absolute oesophagus length in μ	α	β	γ
Juv.	790	24,5	150	102	32,1	5,23	7,76
	1000	24,5	176	102	40,5	5,68	9,80
♂	1990	31	170	110	64	11,7	18
	3120	32	216	170	96,3	14,4	18,3
	3800	34	245	145	110,7	15,5	26,2
	5950	40	225	165	149	26,4	36,1
♀	2100	35	180	110	60	11,7	19
	2950	36	190	97	82	15,4	30,2
	3700	37	226	118	100	16,3	31,3
Pregnant.	3800	50	213	133	76	17,8	28,5

The width of different individuals of the same stage of development proves to be rather constant. During growth, the width of an animal increases inconspicuously. In males it augments with $\frac{1}{3}$ of the original width, whilst the length becomes the triple of the original one. In females, the augmentation of the absolute width follows the same principle; deviations however may occur when mature eggs fill the uterus and distend the body. (Cf. last female of Table XII.)

Oesophagus and tail each increase almost about $\frac{1}{2}$ of the original length, whereas the total body-length may be sextupled in the same time. This finds its expression in an enormous variability of the indices. Thus the mentioned indices have a very restricted specific value, at least when the absolute measures are not taken into consideration. The ignorance of this phenomenon by former authors was the chief reason why 6 species could be reduced to a single one: *Ascolaimus elongatus* (Buetschli). (Cf. SCHUURMANS STEKHOVEN & DE CONINCK 1932a and 1932b.)

This fits for all *filiform* nemas (cf. also KREIS, 1929, p. 9). *Spindle-shaped* nemas have another type of growth, since the absolute width in these species may vary considerably. (Cf. FILIPJEV & MICHAJLOVA 1924.)

It will be worth while to make a more elaborate study of the growth process of the different types of nemas, in order to discover the finer mechanism of this phenomenon. So one will be able to find out which value has to be attributed in each case to absolute and relative measures.

According to our experience, the nemic formula of Filipjev is much better than that of Cobb, since the first gives a direct insight in the variability of the different parts of the body. Cobb's formula, giving the percentages, does not show how a certain bodypart may remain constant in length whereas its relative value changes considerably. This is connected with Cobb's opinion that the proportions of the different parts of the body remain constant, which is seldom the case.

B. — Changes in the morphology due to fixation.

Badly fixated animals may show either a protrusion or an intrusion of the extreme head-portion. In the former case a tooth, ordinarily situated at the bottom of the buccal cavity, will appear at the outer rim of the head and protrudes like a spear (see for instance *Paracanthonus abnormis* Allgén). In the second case the mouth has so to say swallowed a portion of the head: the oral rim has disappeared from the head surface, labial papillae are no longer to be seen, since they are shifted into the interior of the oral cavity, the setal crown gets a more forward position as is also the case with the amphids. *Odontophora armata* (Ditlevsen) gives a striking example for this assertion. (Cf. Fig. 90-93.) SCHUURMANS STEKHOVEN & DE CONINCK 1932a.

Some specimens may show a shifting of the amphids in forward direction,

together with a swallowing of the anterior rim of the body (Fig. 90). In others, the reverse is the case (Fig. 92 & 93).

It is therefore clear that one has to be cautious by attributing a too important value to the situation of the amphids for specific purposes, when one is not certain that its position is not changed by fixation. Many instances of a faulty interpretation of the buccal cavity are found in the literature.

Bad fixatives, to which for instance alcohol is to be reckoned, or too dilute fixatives have often a deleterious effect on nemic structures. So the ornamentation of the skin in the *Chromadoroidea* loses its distinctness, whereas the interior becomes much less diaphane. At the other hand, under special conditions, excreta of the skin-glands are extruded with some force, probably due to osmotic changes. In some instances the cells of the skinglands become quite inverted and get the shape of balloon-shaped papillae situated on the outer skin-surface. An animal with such inverted cells is depicted by Allgén as the type of *Cyatholaimus papilliferus* Allgén, but really belongs to *Cyatholaimus demani* Filipjev.

The given examples warn against the precocious making of new species.

C. -- Requirements for nemic description.

From authors who describe new species one must require that they have an understanding of form and function of the structures they describe.

If one creates a new genus or a new species, after a *single specimen*, this specimen should be at any rate in a good condition and easily to recognise after the figures one has made from it.

Larvae should be only exceptionally taken as type specimens.

A view on our list (Cf. V), pages 28-29, shows that the bulk of the doubtful species is represented by insufficiently characterised larvae.

If such a single larva has no distinct specific characters or is in a bad condition, one must wait till more material is available : it is better not to give new diagnoses than to overburden literature with bad nemic descriptions.

So for instance the half of the descriptions of new species created by Allgén in his paper « Neue freilebende marine Nematoden von der Westküste Schwedens » is taken after juvenile specimens. As a matter of fact such descriptions of larval forms must be incomplete. When at the other hand the illustrations are too sketchlike, which probably partly is due to the bad condition of several forms, one will not wonder when many of these new species must be considered as doubtful species since they cannot be recognised.

One cannot lay too much stress on good, trustworthy figures.

Freeliving nemas as type specimens are rather short-living creatures. So the figures made after them should have the value of these type specimens. It is required that other nematologists are able to recognise their species by comparison with the figures made of the types by the authors.

For that purpose the description of a type should be accompanied by figures giving an idea :

- 1° Of the habitus of the animal in question, if possible of both male and female;
- 2° Of the head and its organs : papillae, setal crown, amphids, buccal cavity, a.s.o.;
- 3° Of the ventral gland;
- 4° Of the shape of the tail and the structure of the spinneret glands;
- 5° Of the structure of the male genital armature, and eventually also of the female genital apparatus;
- 6° Of both structure and ornamentation of the skin.

Further the figures should not be pure analytic like for instance Schulz (1932) gave them for several of his species. Many are no more than pure sketches taken on different plans or optical sections, but insufficient to enable other authors to recognise the species which were figured.

We may point to the fact that certain organs, especially the spicular apparatus, give quite another impression when the point of view changes. It will be clear what is meant, when the spicula of *Monhystera parva* are studied under different angles. In some views the typical hook at the base of the proximal portion no longer is to be seen, whereas it is especially distinct in other views. (Fig. 156-158.) The same may be said for *Ascolaimus elongatus* : here the barb at the distal end of the spicula varies in size with the angle under which it is seen. The curvature of the spicula changes likewise according to the same principle.

We are quite in accordance with Micoletzky 1922a, p. 118, where he says : « Bei spärlichem material ist ein Irrtum, besonders was den feineren Bau der Mundhöhle betrifft, nur zu gut möglich und tunlichste Vorsicht namentlich bei konservirtem Material geboten. So hatte von Daday in den meisten Fällen nur konservierte Nematoden vor sich und hat die Nematodenkunde mit weit mehr unsicheren und zweifelhaften als einwandfrei neuen Arten beschenkt, was allerdings auch auf Rechnung flüchtiger Beobachtung gesetzt werden darf. »

Cobb, whose excellent figures in most instances cannot be too much praised, has made the serious mistake never to take into consideration the descriptions of other authors, so that now several of his genera have to be withdrawn.

IV. — SOME LINES IN THE RELATIONSHIP OF NEMAS.

It is not until 1918 that attempts were made to give a system for the free-living nemas. Filipjev (1918-1921) treated in his wellknown monograph mainly marine species, whereas Micoletzky published independently of him in 1922 a system which most comprises soil nemas. A synopsis of all families of nemas,

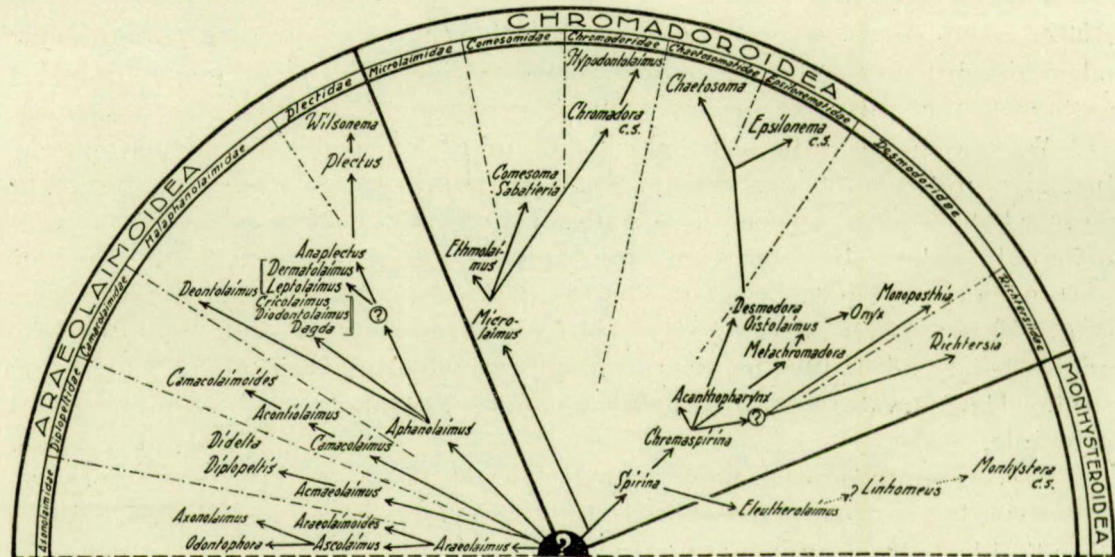
freeliving as well as parasitic ones was given in 1926 by Baylis and Daubney.

As a matter of fact these attempts bear a provisional character. At the present moment it is not yet possible to give a definitive system, considering our superficial knowledge of this class of animals.

We have tried to find out some lines of relationship, which may give a better understanding of the possible interrelations of the different Genera, Families and Orders. We did not take into consideration all known Genera, but believe that our attempt may give a promising working-scheme for future research.

Up to the present the connections between the different so-called Families were rather loose. We came to a regrouping of the Genera and Families indicated in Table XIII when studying the Genera *Araeolaimus* and *Ascolaimus*.

TABLE XIII



These genera, together with *Axonolaimus* and *Odontophora*, are characterised by similar amphids, an identical 4-radiate symmetry at the head end, and by male genital armatures, which have many points in common. One can trace a progressive line from *Araeolaimus* over *Ascolaimus* to *Odontophora*, which finds its expression in the gradual development of the oral cavity, the emancipation of the vestibulum, and the development of the gubernacular apophysis which, small in *Araeolaimus* becomes strong in *Ascolaimus* and *Odontophora*. *Araeolaimoides* is undoubtedly closely allied to *Araeolaimus*.

Closely related with *Araeolaimus* are *Acmaeolaimus* and *Camacolaimus*, both showing a typical reinforcement of the buccal cavity at its dorsal wall, whereas their amphidial structure may be derived from that of *Araeolaimus*. Both have in common with *Araeolaimus* a 4-radiate symmetry at the head end. *Acmaeolaimus* is distinguished from *Camacolaimus* by the fact that in the

first genus the amphids are found on lateral shields, a phenomenon likewise presented by *Diplopettis* and *Didelta*.

Acontiolaimus is a *Camacolaimus* whose vestibular portion of the dorsal spear has emancipated itself from the vestibular wall; in *Camacolaimoides* this process of emancipation went further and led to the loosening of the greatest portion of the spear.

The Family of *Halaphanolaimidae* shows unmistakable resemblances with *Camacolaimus* c.s. So for instance the spicular apparatus of *Dagda* is almost absolutely identical with that of *Camacolaimus*. They have similar amphids and the same symmetry at the anterior end. Typical for the whole Family are the preanal tubuli and papillae in the male sex, which are not found in the *Camacolaimidae*. The amphids show a line of development beginning with the *Araeolaimus*-type, such as is found in *Aphanolaimus* from which type the spiral type of *Dagda* and *Diodontolaimus* may be derived in one direction, whereas another line leads to the typical *Plectus*-amphid over *Anaplectus*. A sidebranch of this line gives the almost circular amphids of *Leptolaimus* and *Dermatolaimus*.

De Man depicted the amphids of *Leptolaimus* as quite circular. Punt (unpublished data), one of our coworkers, found that the amphids of *Leptolaimus papilliger* De Man (Zuiderzee-material) are open posteriorly, which might be expected according to the supposed relation with *Aphanolaimus* and with *Dermatolaimus* with which *Leptolaimus* has many points in common.

It is justified, we think, to unite the families enumerated above (Cf. also Table XIII) in the Order of *Araeolaimoidea*. For a diagnose of this Order consult the systematic part, page 93. (Cf. SCHUURMANS STEKHOVEN & DE CONINCK 1933b.)

As a consequence, the former families *Enoplidae*, *Chromadoridae* and *Monhysteridae* get the rank of Orders and has to be named *Enoploidea*, *Chromadoroidea* and *Monhysteroidea*.

The order of the *Chromadoroidea* stays in close connection with that of the *Araeolaimoidea*. When one compares the head end of *Araeolaimus* with that of *Spirina* the great similarity is evident. The amphids of *Spirina* may be derived from those of *Araeolaimus* without any difficulty. The symmetry at the head end is in both forms 4-radiate, but a new crown of cephalic papillae has been added to the former crowns of labial papillae and cephalic setae. This is a feature common to all *Chromadoroidea*, the *Cyatholaimidae* and the *Choanolaimidae* excepted.

We may consider *Spirina* as the initial form for the *Chromadoroidea*, which forms stays in the neighbourhood of *Araeolaimus* in such way that both may have a common ancestry. The line running from this common still unknown ancestor to *Spirina* has a sidebranch, conducting over *Microlaimus* to *Ethmolaimus* on one side, *Comesoma* and *Sabatieria* on another side, whereas a third branch leads to the *Chromadoridae* with *Chromadora* and *Hypodontolaimus* as main forms.

Chromaspirina stays in direct connection with *Spirina*. Different branches diverge from *Chromaspirina*. So one sideway leads to *Acanthopharynx*, a direct line, from which in their turn *Epsilonema* and *Chaetosoma* branch off, to *Desmodora*.

Another way runs over *Metachromadora* and *Oistolaimus* to *Onyx*, whilst *Monoposthia* and *Richtersia* can also be derived from *Chromaspirina*. The striking resemblances between *Linhomoeus* and *Spirina* give us reason to suppose that there must exist some relationship, the more since the amphid of *Eleuthero-laimus*, according to our experience, is not circular but inconspicuously spiral. Thus the *Monhysteroidea* should also be linked with the *Chromadoroidea*.

A difficulty arises when one tries to find out the true position of the *Cyatholaimidae* in our scheme. We have not yet come to a satisfactory conclusion about this Family, although we believe that it belongs to the *Chromadoroidea*.

If the *Enoploidea* can be linked with one of the lines of our scheme remains until now uncertain. Provisionally we prefer to let them out of discussion. The same fits for the *Desmoscolecoidea* which are only very insufficiently known and for the *Anguilluloidea*.

The foregoing discussion is based principally on the opinion that the shape of the amphids, the symmetry at the headend and the structure of the male genital armature are features of primary systematic importance.

Although we have only a superficial knowledge of the finer structure of the amphids of most nemas, still one can bring them to a small number of types: 1. the SPIRAL type, common to all *Araeolaimoidea* and *Chromadoroidea*. From this type the HALFMOON-SHAPED amphid of *Chromadora* may be derived easily by unfolding; 2. the CIRCULAR type of amphid of the *Monhysteroidea* which possibly also may have originated from the spiral type by loss of the involution; 3. the CYATHIFORM type of the *Enoploidea*. This being so we are inclined to attribute a high systematic value to the amphidial shape.

The symmetry at the headend likewise seems to be rather constant when the higher systematic unities are considered. Confer for instance the *Araeolaimoidea* with their 4-radiate symmetry, the *Chromadoroidea* with the 3 crowns of head organs from which the first two generally are 6-radiate in distribution, the third possessing a 4-radiate symmetry.

In *Monhysteroidea* and *Enoploidea* this symmetry is mainly 6-radiate, although in some instances a multiplication of the head sense organs may alter the primitive symmetry-relations. (Cf. *Steineria*.)

The male genital armature presents characters of minor systematic importance, although whole families are often characterised by the same type of spicular apparatus. See for instance the *Halaphanolaimidae*, the *Desmodoridae* and so on.

The structure of the oral cavity although showing typical features has not the same value for phylogenetical problems, since it shows different lines of convergence in its manifold adaptations to conditions of life.

V. — CHANGES IN THE SYSTEMATICS.

We bring here an account of the systematical changes which proved to be necessary.

4 new orders :

1. *Araeolaimoidea* nov. ordo.
Three families getting the higher rank of an order :
2. order *Chromadoroidea*, syn. fam. *Chromadoridae* auct.
3. order *Enoploidea*, syn. fam. *Enoplidae* auct.
4. order *Monhysteroidea*, syn. fam. *Monhysteridae* auct.

1 new family :

1. fam. *Halaphanolaimidae*, order *Araeolaimoidea*.
All other subfamilies of other authors get the higher rank of families.

4 new genera :

1. *Anaplectus*, syn. *Plectus* Bastian ex parte. Type species : *Anaplectus granulatus* (Bastian).
2. *Camacolaimoides*, syn. *Camacolaimus* De Man ex parte. Type species : *Camacolaimoides praedator* (De Man).
3. *Metaparoncholaimus*, syn. *Oncholaimus* Dujardin ex parte. Type species : *Metaparoncholaimus campylocercus* (De Man).
4. *Parabathylaimus*, syn. *Bathylaimus* Cobb ex parte. Type species : *Parabathylaimus ponticus* (Filipjev).

The subgenera *Mesacanthion* Filipjev, *Oxyonchus* Filipjev and *Steineria* Micoletzky get the rank of Genera.

4 new species :

1. *Chromadorita longisetosa* nov. spec.
2. *Dichromadora hyalocheile* nov. spec.
3. *Theristus acrilabiatus* nov. spec.
4. *Theristus calceolatus* nov. spec.

4 nomina nova :

1. *Axonolaimus demani* nom. nov. for *Axonolaimus* spec. De Man 1928.
2. *Enoploides suecicus* nom. nov. for *Enoplolaimus saveljevi* Allgén nec Filipjev (preoccupied name).
3. *Oncholaimus campylocercoides* nom. nov. for *Oncholaimus campylocercus* Filipjev nec De Man.
4. *Tripyloides septentrionalis* nom. nov. for *Tripyloides marinus* De Man nec Buetschli.

8 genera to be withdrawn :

1. *Bitholinema* De Coninck = *Wilsonema* Cobb.
2. *Bognenia* Allgén = *Trefusia* De Man.
3. *Bradylaimus* Schuurmans Stekhoven = *Oistolaimus* Ditlevsen.
4. *Coinonema* Cobb = *Araeolaimoides* De Man.
5. *Conolaimus* Filipjev = *Odontophora* Buetschli.
6. *Cothonolaimus* Ditlevsen = *Bathylaimus* Cobb.
7. *Parachromagaster* Allgén = *Araeolaimus* De Man.
8. *Ypsilon* Cobb = *Camacolaimus* De Man.

44 species to be withdrawn :

1. *Anticoma longisetosa* Kreis = *Ascolaimus elongatus* (Buetschli).
2. *Araeolaimus cylindricauda* Allgén = *Araeolaimus longicauda* Allgén.
3. *Araeolaimus ditlevseni* Allgén = *Araeolaimus elegans* De Man.
4. *Araeolaimus dolichoposthius* Ssaveljev = *Araeolaimus elegans* De Man.
5. *Araeolaimus spectabilis* Ditlevsen = *Araeolaimus elegans* De Man.
6. *Ascolaimus filiformis* Ditlevsen = *Ascolaimus elongatus* (Buetschli).
7. *Axonolaimus elegans* Schulz = *Odontophora setosa* (Allgén).
8. *Axonolaimus serpentulus* De Man = *Ascolaimus elongatus* (Buetschli).
9. *Axonolaimus similis* Schulz = *Axonolaimus paraspinosus* Schuurmans Stekhoven & Adam.
10. *Axonolaimus tenuis* Schulz = *Ascolaimus elongatus* (Buetschli).
11. *Bathylaimus denticaudatus* Allgén = *Parabathylaimus ponticus* (Filipjev).
12. *Bitholinema schuurmans stekhoveni* De Coninck = *Wilsonema capitatum* Cobb.
13. *Bognenia littoralis* Allgén = *Trefusia longicauda* De Man.
14. *Bradylaimus parvus* Schuurmans Stekhoven = *Oistolaimus suecicus* Allgén.
15. *Chromadora dröbachiensis* Allgén = *Prochromadorella germanica* (Buetschli).
16. *Chromadora natans* Bastian = *Chromadora nudicapitata* Bastian.
17. *Cothonolaimus gracilis* Ditlevsen = *Tripyloides septentrionalis* De Coninck and Schuurmans Stekhoven.
18. *Cothonolaimus sabulicolus* Schulz = *Bathylaimus inermis* (Ditlevsen).
19. *Cothonolaimus similis* Allgén = *Bathylaimus septentrionalis* (Filipjev).
20. *Cyatholaimus ditlevseni* Schuurmans Stekhoven & Adam = *Cyatholaimus demani* Filipjev.
21. *Cyatholaimus papilliferus* Allgén = *Cyatholaimus demani* Filipjev.
22. *Desmodora leucocephala* Schulz = *Desmodora serpentulus* De Man.

23. *Enoplolaimus campbelli* Allgén = *Oxyonchus australis* (De Man).
24. *Enoplolaimus polaris* Filipjev = *Oxyonchus dentatus* (Ditlevsen).
25. *Enoplus communis* Bastian var. *meridionalis* Steiner = *Enoplus striatus* Eberth.
26. *Enoplus quadridentatus* Berlin = *Enoplus hirtus* Marion.
27. *Metoncholaimus denticaudatus* Schuurmans Stekhoven & Adam = *Metoncholaimus pristiurus* (Zur Strassen).
28. *Monhystera ambigua* Bastian = *Monhystera disjuncta* Bastian.
29. *Monhystera ambiguoides* Buetschli = *Monhystera disjuncta* Bastian.
30. *Monhystera demani* Schuurmans Stekhoven nec De Rouville = *Theristus tenuispiculum* Ditlevsen.
31. *Monhystera heteroparva* Micoletzky = *Monhystera parva* (Bastian).
32. *Oncholaimus aequedentatus* Schuurmans Stekhoven & Adam = *Metaparoncholaimus campylocercus* (De Man).
33. *Oncholaimus albidus* De Rouville nec Bastian = *Metoncholaimus pristiurus* (Zur Strassen).
34. *Oncholaimus littoralis* Allgén = *Oncholaimellus calvadosicus* De Man.
35. *Oncholaimus marinus* Schulz = *Oncholaimus brachycercus* De Man.
36. *Paracanthonchus polycyrtus* Schuurmans Stekhoven & Adam = *Paracanthonchus spectabilis* Allgén.
37. *Parachromagaster tenuis* Allgén = *Araeolaimus longicauda* Allgén.
38. *Parachromagaster sabulicola* Allgén = *Araeolaimus steineri* Filipjev.
39. *Syringolaimus smaragdus* Cobb = *Syringolaimus striaticaudatus* De Man.
40. *Trigonolaimus intermedius* Allgén = *Odontophora armata* (Ditlevsen).
41. *Trigonolaimus minor* Ditlevsen = *Odontophora armata* (Ditlevsen).
42. *Trilobus* spec. De Coninck 1930 = *Enoplus communis* Bastian.
43. *Tripyloides vulgaris* De Man = *Tripyloides marinus* (Buetschli).
44. *Urolabes barbata* Carter = ? *Oncholaimus oxyuris* Ditlevsen.

4 corrections to former identifications :

1. *Chromadora parva* Schuurmans Stekhoven & Adam nec De Man = *Chromadora microlaima* (De Man).
2. *Prismatolaimus intermedius* De Coninck nec Buetschli = *Anoplostoma blanchardi* De Man.
3. *Theristus velox* Steiner nec Bastian = *Theristus acer* Bastian.
4. *Theristus velox* Schuurmans Stekhoven & Adam nec Bastian = *Theristus acer* Bastian.

6 Families shifted to other orders :

1. *Axonolaimidae*, from the *Monhysteroidea* to the *Araeolaimoidea*.
2. *Comesomidae*, from the *Monhysteroidea* to the *Chromadoroidea*.
3. *Diplopeltidae*, from the *Monhysteroidea* to the *Araeolaimoidea*.
4. *Halaphanolaimidae*, from the *Chromadoroidea* to the *Araeolaimoidea*.
5. *Microlaimidae*, from the *Monhysteroidea* to the *Chromadoroidea*.
6. *Plectidae*, from the *Chromadoroidea* to the *Araeolaimoidea*.

21 species shifted to other genera :

1. *Axonolaimus polaris* Cobb = *Odontophora polaris* (Cobb).
2. *Bathylaimus ponticus* Filipjev = *Parabathylaimus ponticus* (Filipjev).
3. *Bathylaimus profundus* Filipjev = *Parabathylaimus profundus* (Filipjev).
4. *Camacolaimus bathycola* Filipjev = *Acontiolaimus bathycola* (Filipjev).
5. *Camacolaimus praedator* De Man = *Camacolaimoides praedator* (De Man).
6. *Chromadora macrolaima* De Man = *Chromadorina macrolaima* (De Man).
7. *Camacolaimus dolichocercus* Filipjev = *Acontiolaimus dolichocercus* (Filipjev).
8. *Coinonema punctatum* Cobb = *Araeolaimoides punctatus* (Cobb).
9. *Conolaimus angustilaimus* Filipjev = *Odontophora angustilaima* (Filipjev).
10. *Conolaimus longisetosus* Allgén = *Odontophora longisetosa* (Allgén).
11. *Cothonolaimus filicaudatus* Schuurmans Stekhoven & Adam = *Bathylaimus filicaudatus* (Schuurmans Stekhoven & Adam).
12. *Cothonolaimus inermis* Ditlevsen = *Bathylaimus inermis* (Ditlevsen).
13. *Cothonolaimus longisetosus* Allgén = *Bathylaimus longisetosus* (Allgén).
14. *Cothonolaimus septentrionalis* Filipjev = *Bathylaimus septentrionalis* (Filipjev).
15. *Cothonolaimus tenuis* Kreis = *Sphaerolaimus tenuis* (Kreis).
16. *Monhystera tenuispiculum* Ditlevsen = *Theristus tenuispiculum* (Ditlevsen).
17. *Oncholaimus campylocercus* De Man = *Metaparoncholaimus campylocercus* (De Man).
18. *Plectus granulosus* Bastian = *Anaplectus granulosus* (Bastian).
19. *Trigonolaimus armatus* Ditlevsen = *Odontophora armata* (Ditlevsen).
20. *Trigonolaimus setosus* Allgén = *Odontophora setosa* (Allgén).
21. *Ypsilon exile* Cobb = *Camacolaimus exilis* (Cobb).

Doubtful species :

1. *Araeolaimus tristis* Allgén.
2. *Axonolaimus filiformis* De Man.

3. *Axonolaimus impar* Ssaveljev.
 4. *Camacolaimus propinquus* Allgén.
 5. *Enoplolaimus balgensis* Skwarra.
 6. *Enoplolaimus conicaudatus* Allgén.
 7. *Enoplolaimus gracilisetosus* Allgén.
 8. *Enoplolaimus macrochaetus* Allgén.
 9. *Enoplolaimus paradentatus* Allgén.
 10. *Enoplolaimus primitivus* Allgén.
 11. *Enoplolaimus similis* Allgén.
 12. *Enoplolaimus stateni* Allgén.
 13. *Enoplus bisetosus* von Linstow.
 14. *Enoplus crassiusculus* Dujardin.
 15. *Enoplus elongatus* Dujardin.
 16. *Enoplus microstomus* Dujardin.
 17. *Enoplus erythrophthalmus* von Linstow.
 18. *Enoplus nanus* Allgén.
 19. *Enoplus parabrevis* Allgén.
 20. *Enoplus rivalis* Dujardin.
 21. *Enoplus stenodon* Dujardin.
 22. *Enoplus tenuicaudatus* Allgén.
 23. *Enoplus tuberculatus* Eberth.
 24. *Microlaimus inermis* Ditlevsen.
 25. *Microlaimus problematicus* Allgén.
 26. *Microlaimus tenuilaimus* Allgén.
 27. *Odontophora marina* Buetschli.
 28. *Odontophora parasetosa* (Allgén).
 29. *Odontophora polaris* (Cobb).
 30. *Tripyloides demani* Filipjev.
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SYSTEMATICAL PART ⁽¹⁾

ORDER I : ENOPLIDEA

I. — FAMILY ENOPLIDAE.

GENUS ENOPLUS DUJARDIN 1845.

Syn. : *Enoplostoma* MARION ex parte.

In the literature until the present moment no less than 62 species are brought to this genus, several of which later on proved to belong to quite different genera. We believe it may be of some value to give a short survey of all known species with their synonymy. The species in question are treated in alphabetic order.

1. *Enoplus acutus* VILLOT 1875 = *Triodontolaimus acutus* (VILLOT).
Confer DE MAN 1893, p. 114.
2. *Enoplus alatus* SSAVELJEV 1912, p. 109.
Confer DE MAN 1893, p. 114.
3. *Enoplus atratus* VON LINSTOW 1896, p. 10 = *Enoplus michaelsoni* VON LINSTOW 1896,
p. 10.
Confer DE MAN 1904, p. 19.
4. *Enoplus auriculatus* SSAVELJEV 1912, p. 109.
5. *Enoplus barbatus* (CARTER) EBERTH, p. 863, p. 42 = near *Oncholaimus oxyuris* DITLEV-
SEN 1911.
6. *Enoplus behringicus* FILIPIEV 1916, p. 98.
7. *Enoplus benhami* DITLEVSEN 1930, p. 202.
8. *Enoplus brachyuris* DITLEVSEN 1923, p. 198.
9. *Enoplostoma brevicaudatum* MARION = *Enoplus brevicaudatus* (MARION) 1870, p. 24
= *Enoplus obtusicaudatus* EBERTH.
A thorough comparison of descriptions and figures proves that no essential differences exist between both forms.
10. *Enoplus brevis* BASTIAN 1865, p. 150.
Confer also DE MAN 1886, p. 27.

(¹) Allgén's new monograph « Die freilebenden Nematoden aus dem Trondjhemsfjord » *Capita Zoologica*, IV, 2, 1933 was received when our monograph had been printed in part, so that we could no more take account of the species treated therein.

11. *Enoplus bütschlii* SOUTHERN 1914, p. 50 = *Enoploides bütschlii* (SOUTHERN).
12. *Enoplus caeruleus* EBERTH 1863, p. 39 = *Vasculonema caeruleum* (EBERTH).
Confer KREIS 1928, p. 163.
13. *Enoplus cirrhatus* EBERTH 1863, p. 34 = *Diplopeltis cirrhatus* (EBERTH). Confer below!
14. *Enoplus cochleatus* A. SCHNEIDER 1866, p. 57 = *Enoplus communis* BASTIAN.
15. *Enoplus communis* BASTIAN 1865, p. 148.
See also below. For *E. communis* BASTIAN var. *meridionalis* STEINER confer *E. meridionalis*.
16. *Enoplus constrictus* DITLEVSEN 1926, p. 35.
17. *Enoplus coronatus* EBERTH 1863, p. 37 = *Thoracostoma figuratum* (EBERTH) 1863.
18. *Enoplus crassus* FILIPIJEV 1916, p. 95.
19. *Enoplus denticaudatus* A. SCHNEIDER 1866, p. 58 = *Thoracostoma trichodes* (LEUCKART) 1849.
20. *Enoplus diplechma* SOUTHERN 1914, p. 55 = *Mesacanthion diplechma* (SOUTHERN).
21. *Enoplus dujardinii* BASTIAN 1865, p. 149 = *Enoplus communis* BASTIAN.
Confer DE MAN 1866, p. 14.
22. *Enoplus edentatus* VON LINSTOW 1900, p. 127, pl. VII, fig. 39-41 = *Synonchus* spec.
Confer SCHUURMANS STEKHOVEN & ADAM 1931, *Fiacra brevisetosa* SOUTHERN.
23. *Enoplus euxinus* FILIPIJEV 1918, p. 82 = *Enoplus hirtus* MARION 1870, p. 459.
Confer FILIPIJEV (KREIS) 1925, p. 157.
24. *Enoplus gracilis* EBERTH 1863, p. 34 = *Cyatholaimus* spec.
25. *Enoplus groenlandicus* DITLEVSEN 1926, p. 32.
26. *Enoplus globicaudatus* A. SCHNEIDER 1866, p. 58 = *Thoracostoma figuratum* (BASTIAN) 1865, p. 146.
27. *Enoplostoma hirtum* MARION 1870, p. 22 = *Enoplus hirtus* (MARION).
28. *Enoplus inermis* BASTIAN 1865, p. 150, probably identical with *E. communis* BASTIAN 1865, p. 148; see below.
29. *Enoplus labiatus* BUETSCHLI 1874, p. 41 = *Enoploides labiatus* (BUETSCHLI).
30. *Enoplus labrostriatus* SOUTHERN 1914, p. 53 = *Enoploides labrostriatus* (SOUTHERN).
31. *Enoplus liratus* A. SCHNEIDER 1866, p. 59 = *Dorylaimus* spec.
32. *Enoplus littoralis* FILIPIJEV 1918, p. 87.
33. *Enoplus longicaudatus* SOUTHERN 1914, p. 57 = *Enoplolaimus longicaudatus* (SOUTHERN). Confer below!
34. *Enoplus macrolaimus* VON LINSTOW 1908, p. 27 = *Phanoderma macrolaimum* (VON LINSTOW).
35. *Enoplus macrophthalmus* EBERTH 1863, p. 35, probably synonymous with *E. communis* BASTIAN. Confer below!
36. *Enoplus maeoticus* FILIPIJEV 1926, p. 101.
37. *Enoplus medius* KREIS 1928, p. 153 = *Enoplus crassus* FILIPIJEV 1916, p. 95.
In all essential features both species agree.
38. *Enoplus meridionalis* (STEINER) 1922, p. 30 = *Enoplus striatus* EBERTH 1863, p. 36.
Compare text and figures of both species, i. a. the genital armature and the shape of the tail in the male.

39. *Enoplus michaelsoni* VON LINSTOW 1896, p. 10.
For ample information confer DE MAN 1904, p. 19!
40. *Enoplostoma minus* MARION 1870, p. 23 = *Enoplus minus* (MARION).
41. *Enoplus obtusicaudatus* EBERTH 1863, p. 36.
42. *Enoplus ornatus* EBERTH 1863, p. 40 = *Eurystomatina acuminata* EBERTH 1863, p. 28.
43. *Enoplus pellucidus* DITLEVSEN 1926, p. 33, probably synonymous with *E. communis* BASTIAN.
The differences in the shape of the spicula of both forms depend upon the angle under which the spicular apparatus is observed.
44. *Enoplus pigmentosus* BASTIAN 1865, p. 149 = *Enoplus communis* BASTIAN, which synonymy was already presumed by FILIPJEV 1918, p. 79.
Pigment spots (ocelli) are figured but not mentioned in the text.
45. *Enoplus quadridentatus* BERLIN 1853, p. 431 = *Enoplus hirtus* MARION 1870, p. 22.
46. *Enoplus serratus* DITLEVSEN 1926, p. 36.
47. *Enoplus sphaericus* KREIS 1928, p. 154.
48. *Enoplus striatus* EBERTH 1863, p. 36.
49. *Enoplus subrotundus* EBERTH 1863, p. 33 = *Enchelidium acuminatum* EBERTH 1863, p. 24.
50. *Enoplus tenuicollis* EBERTH 1863, p. 41 = *Enchelidium tenuicolle* (EBERTH) 1863, p. 23 = *Enchelidium marinum* EHRENBERG 1836.
51. *Enoplus tridentatus* DUJARDIN 1845, p. 233, very probably a synonym of *Enoplus hirtus* (MARION) 1870, p. 22.

DOUBTFUL SPECIES

52. *Enoplus bisetosus* VON LINSTOW 1908, p. 27, possibly identical with *Enoplus striatus* EBERTH.
53. *Enoplus crassiusculus* DUJARDIN 1845, p. 235.
54. *Enoplus elongatus* DUJARDIN 1845, p. 234.
55. *Enoplus erythrophthalmus* VON LINSTOW 1896, p. 11, fig. 17-18. Probably belongs to *Oxyonchus*.
56. *Enoplus microstomus* DUJARDIN 1845, p. 234.
57. *Enoplus nanus* ALLGÉN 1929b, p. 440.
58. *Enoplus parabrevis* ALLGÉN 1928, p. 283.

This species, created on 2 juvenile specimens only, has nothing to do with *Enoplus brevis* Bastian, but may be a synonym of *Enoplus michaelsoni* von Linstow 1896. In comparing *Enoplus parabrevis* with *Enoplus brevis*, Allgén separates both species on grounds which cannot be accepted since he ascribes a specific value to the absolute differences between the measurements of juvenile specimens of one species and those of fullgrown individuals of the other species. In general we should warn against basing new species on a single or a few larvae, unless striking specific differences exist, measurements excepted.

59. *Enoplus rivalis* DUJARDIN 1845, p. 235, belongs to the genus *Plectus*.
60. *Enoplus stenodon* DUJARDIN 1845, p. 234.

61. *Enoplus tenuicaudatus* ALLGÉN 1929b, p. 438, probably a synonym of *E. communis*; compare also what is said under *E. parabrevis*.
62. *Enoplus tuberculatus* EBERTH 1863, p. 38, is no *Enoplus*, but for the moment it is uncertain to which genus the species should be reckoned. Probably allied to *Enchelidium*.

KEY TO THE GOOD SPECIES OF THE GENUS « ENOPLUS » BASTIAN

- I. Tail broadly rounded, short :
- Enoplus obtusicaudatus* EBERTH.
- II. Tail cylindro-conical or conical, never broadly rounded :
- A. Tail with a filiform extremity; width at the end only $0,08 \times$ the anal-diameter :
- Enoplus constrictus* DITLEVSEN.
- AA. Width at the end of the tail larger than $0,10 \times$ the anal-diameter :
- a. Cephalic setae very short, less than $0,20 \times S$ ⁽¹⁾ :
- b. Tail short, conical, $1,4$ anal-diameters long :
- Enoplus brachyuris* DITLEVSEN.
- bb. Tail long, cylindro-conical :
- Enoplus sphaericus* KREIS.
- aa. Cephalic setae larger than $0,25 \times S$:
- B. Ocelli or pigment-spots absent :
- c. The 4 shorter submedian setae $\pm 3/10$ shorter than the longer ones :
- Enoplus brevis* BASTIAN.
- cc. Shorter setae less than $2/10$ shorter than the longer ones :
- D. Supplementary organ of the male tubular :
- d. Spicula swollen at the proximal end :
- Enoplus littoralis* FILIPJEV.
- dd. Spicula narrowing at the proximal end :
- Enoplus groenlandicus* DITLEVSEN.
- DD. Supplementary organ of the male trumpet-shaped :
- e. Spicula smooth :
- Enoplus maeoticus* FILIPJEV.
- ee. Spicula indented :
- Enoplus serratus* DITLEVSEN.
- BB. Ocelli or pigment spots present :
- C. Spicula without indentations :
- E. Spicula with 2 ventral warts :
- Enoplus behringicus* FILIPJEV.

⁽¹⁾ S : width of the body at the cephalic suture.

EE. Spicula without warts :

F. Paired cephalic setae almost equal in size :

Enoplus auriculatus SSAVELJEV.

FF. Paired cephalic setae distinctly unequal :

f. Supplementary organ small, tubular :

Enoplus benhami DITLEVSEN.

ff. Supplementary organ trumpet-shaped :

G. Tail tapering gradually, without a distinct cylindrical posterior part :

Enoplus minor (MARION).

GG. Tail with a distinct cylindrical posterior part :

Enoplus striatus EBERTH.

CC. Spicula with indentations :

g. Jaws in the middle broader than anteriorly :

Enoplus hirtus (MARION).

gg. Jaws in the middle not broader than anteriorly :

H. Spicula with lateral wing-shaped expansions :

Enoplus alatus SSAVELJEV.

HH. Spicula without lateral wing-shaped expansions :

h. Cephalic height from the suture to the cephalic setae $0,2 \times S$:

Enoplus michaelsoni VON LINSTOW.

hh. Cephalic height at least $0,25 \times S$:

j. Length of tail in the male $1,5 \times$, in the female $2,25 \times$ the anal-diameter.

Spicula without a distal elevation :

Enoplus crassus FILIPJEV.

jj. Length of tail in the male $2 \times$, in the female $3,3 \times$ the anal-diameter.

Spicula with a distal elevation :

Enoplus communis BASTIAN.

1. *Enoplus communis* BASTIAN.

Fig. 1-3.

Syn. : *E. cochleatus* A. SCHNEIDER 1866.

E. dujardinii BASTIAN 1865.

? *E. inermis* BASTIAN 1865.

? *E. macrophthalmus* EBERTH 1863.

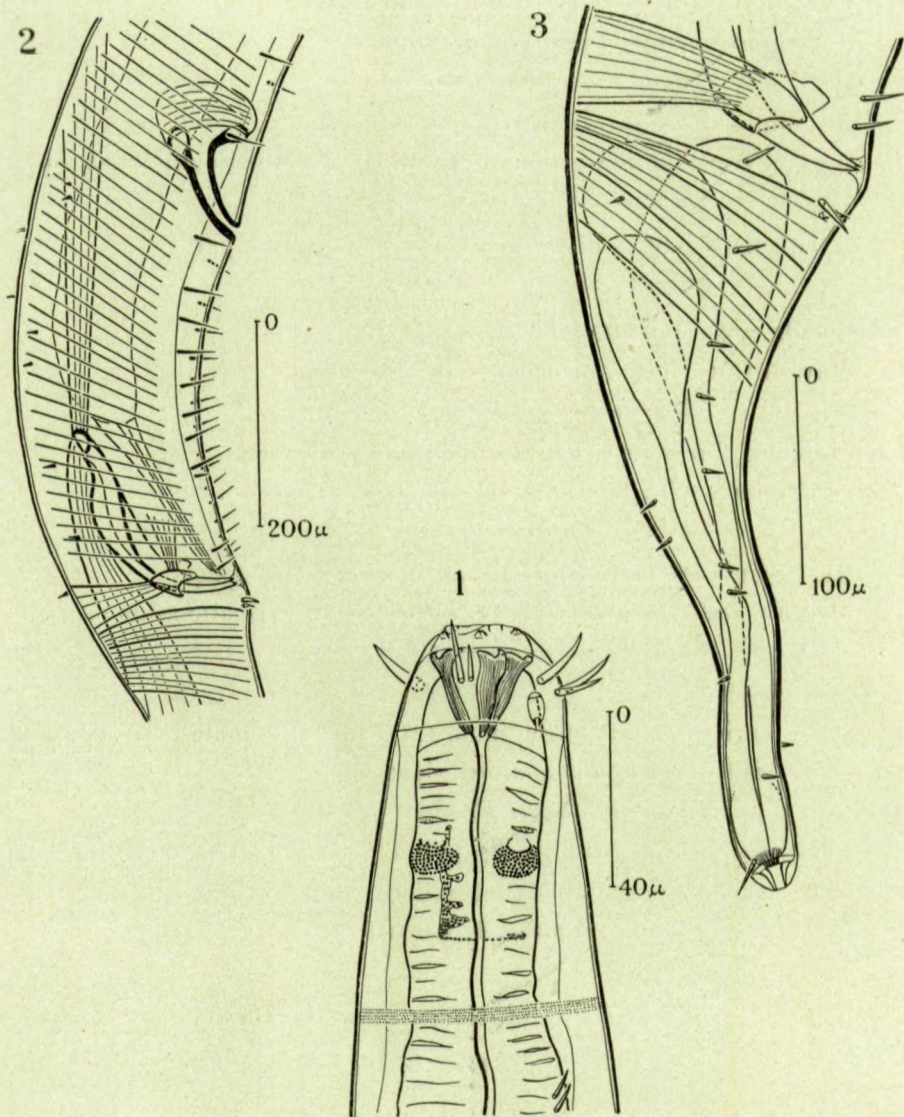
E. pellucidus DITLEVSEN 1926.

E. pigmentosus BASTIAN 1865.

? *E. tenuicaudatus* ALLGÉN 1929.

Trilobus spec. DE CONINCK 1930, p. 135.

nec *E. communis* BASTIAN var. *meridionalis* STEINER 1922, p. 30.



Enoplus communis BASTIAN.

1. Head end of a juvenile.
2. Copulatory apparatus of a male
3. Tail of a male.

FOR REFERENCES : Compare Schuurmans Stekhoven-Adam, 1931, p. 22, with the exception of Schuurmans Stekhoven, 1931, p. 676, where *E. brevis* was mentioned only. Further :

- A. SCHNEIDER 1866, p. 57, pl. IV, fig. 9-13.
 E. SCHULZ 1932, p. 341.
 C. ALLGÉN 1932c, p. 405.
 L. DE CONINCK 1930, p. 135, fig. 4-5.
 BASTIAN 1865, p. 149, pl. XII, fig. 168-170 et 171-172; p. 150, pl. XII, fig. 173-175.
 EBERTH 1863, p. 35, pl. II, fig. 23-24, pl. III, fig. 6.
 DITLEVSEN 1926, p. 33, pl. XIII, fig. 5, 8-10, pl. XV, fig. 4.
 ALLGÉN 1929b, p. 438, fig. 4a-c.
 ALLGÉN 1931, p. 221.

In the present material we found 1 ♂, 1 ♀, 1 juv. from a breakwater at Knokke-Zoute; 28-XII-1931; NaCl : 31,6 ‰.

DIMENSIONS : ♂ : L. : 7,2 mm.; α : 33,4; β : 6,66; γ : 25,7.
 ♀ : L. : 6,9 mm.; α : 27,6; β : 6,57; γ : 20; V. : 52,7 %.
 juv. L. : 1,31 mm.; α : 23,8; β : 3,6 ; γ : 10.

In comparing the juvenile specimens with the fullgrown ones it struck us that the proportion « length of mandibles : width of the head at the suture » is larger in juvenile specimens. Here the mandibles reach 0,48 × cephalic width. Similarly the ocellar spots are shifted more caudad and the amphids are proportionally larger (compare fig. 1). Here they are found on 1,2 × cephalic width from the anterior end.

HEAD : 10 cephalic setae, the longer ones 0,37 × cephalic width at the suture, the shorter ones $\frac{2}{3}$ as long as the longer ones.

In studying the *genital armature* we apparently did oversee the ventral incisions of the spicula. In general however, our figure (fig. 2) agrees with the original description.

TAIL of male gradually tapering, last $\frac{1}{2}$ ± cylindrical, 2,4 anal diameters long; width at the tip 0,2 anal diameter. Short setae are scattered over the tail especially numerous on the lateral lines (fig. 3).

GEOGRAPHICAL DISTRIBUTION : Cosmopolite.

GENUS ENOPLOLAIMUS DE MAN 1893 s. lat.

Syn. : *Enoplus* DUJARDIN 1845 ex parte.

Filipjev divides the Genus *Enoplolaimus* De Man into three subgenera :

- I. *Mesacanthion* FILIPIJEV 1925, p. 143;
- II. *Enoplolaimus* s. str. FILIPIJEV 1925, p. 144, and
- III. *Oxyonchus* FILIPIJEV 1925, p. 145.

We are of the opinion that the mentioned subgenera have the rank of genera, because the differences in the dentition, in the implantation of the cephalic setae as well as in the genital armature are constant and cannot be considered as only specific differences.

Until now 47 species *Enoplolaimus* sens. lat. are described :

1. *Enoplolaimus abnormis* KREIS 1928, p. 156.
2. *Enoplolaimus acantholaimus* SSAVELJEV 1912, p. 112 = *Oxyonchus acantholaimus* (SSAVELJEV).
3. *Enoplolaimus angustignathus* DITLEVSEN 1928, p. 210 = *Mesacanthion ditlevseni* (FILIPJEV).
4. *Enoplolaimus audax* DITLEVSEN 1919, p. 208 = *Mesacanthion audax* (DITLEVSEN).
5. *Enoplolaimus australis* DE MAN 1904, p. 17 = *Oxyonchus australis* (DE MAN).
6. *Enoplolaimus banalis* FILIPJEV 1925, p. 147 = *Mesacanthion banale* (FILIPJEV).
7. *Enoplolaimus brevisetosus* FILIPJEV 1925, p. 150 = *Mesacanthion brevisetosum* (FILIPJEV).
8. *Enoplolaimus campbelli* ALLGÉN 1932b, p. 109 = *Oxyonchus australis* (DE MAN).
9. *Enoplolaimus caput medusae* DITLEVSEN 1919, p. 211.
10. *Enoplolaimus cephalophorus* DITLEVSEN 1919, p. 207 = *Enoploides cephalophorus* (DITLEVSEN).
11. *Enoplolaimus conicus* FILIPJEV 1918, p. 105 = *Mesacanthion conicum* (FILIPJEV).
12. *Enoplolaimus crassidens* DITLEVSEN 1930, p. 203 = *Oxyonchus crassidens* (DITLEVSEN).
13. *Enoplolaimus crassus* DITLEVSEN 1926, p. 39 = *Enoploides crassus* (DITLEVSEN) ?
14. *Enoplolaimus dentatus* DITLEVSEN 1919, p. 209 = *Oxyonchus dentatus* (DITLEVSEN).
15. *Enoplolaimus derjugini* FILIPJEV 1929, p. 677.
16. *Enoplus diplechma* SOUTHERN 1914, p. 55 = *Mesacanthion diplechma* (SOUTHERN).
17. *Enoplolaimus ditlevseni* FILIPJEV 1925, p. 148 = *Mesacanthion ditlevseni* (FILIPJEV).
18. *Enoplolaimus dubius* FILIPJEV 1918, p. 107 = *Oxyonchus dubius* (FILIPJEV).
19. *Enoplolaimus elegans* SCHULZ 1932, p. 347 = *Oxyonchus elegans* (SCHULZ).
20. *Enoplolaimus halophilus* DITLEVSEN 1928, p. 208.
21. *Enoplolaimus hamatus* STEINER 1916a, p. 626 = *Oxyonchus hamatus* (STEINER).
22. *Enoplolaimus incurvatus* DITLEVSEN 1926, p. 37 = *Enoploides incurvatus* (DITLEVSEN).
23. *Enoplolaimus infantilis* DITLEVSEN 1930, p. 206 = *Mesacanthion infantile* (DITLEVSEN).
24. *Enoplolaimus italicus* STEINER 1921b, p. 54, fig. A¹ = *Enoploides italicus* (STEINER).
25. *Enoplolaimus karensis* FILIPJEV 1925, p. 152 = *Mesacanthion karensis* (FILIPJEV).
26. *Enoplolaimus klugei* FILIPJEV 1925, p. 145 = *Mesacanthion klugei* (FILIPJEV).
27. *Enoplolaimus latignathus* DITLEVSEN 1919, p. 205 = *Mesacanthion latignathum* (DITLEVSEN).
28. *Enoplus longicaudatus* SOUTHERN 1914, p. 37 = *Enoplolaimus longicaudatus* (SOUTHERN).
29. *Enoplolaimus lucifer* FILIPJEV 1925, p. 149 = *Mesacanthion lucifer* (FILIPJEV).
30. *Enoplolaimus major* FILIPJEV 1925, p. 151 = *Mesacanthion majus* (FILIPJEV).
31. *Enoplolaimus microsetosus* ALLGÉN 1932b, p. 110 = *Mesacanthion microsetosum* (ALLGÉN).

32. *Enoplolaimus oxycephalus* DITLEVSEN 1926, p. 41 = *Mesacanthion oxycephalum* (DITLEVSEN).
 33. *Enoplolaimus polaris* FILIPJEV 1925, p. 153 = *Oxyonchus dentatus* (DITLEVSEN) 1919, p. 209.
 34. *Enoplolaimus propinquus* DE MAN 1922a, p. 132 and 1922b, p. 257.
 35. *Enoplolaimus ssaveljevi* ALLGÉN 1929a, p. 13 = *Enoploides suecicus* nom. nov.
 36. *Enoplolaimus tenuicaudatus* SSAVELJEV 1912, p. 13 = ? *Mesacanthion tenuicaudatum* (SSAVELJEV).
 37. *Enoplolaimus virilis* DITLEVSEN 1930, p. 208 = *Mesacanthion virile* (DITLEVSEN).
 38. *Enoplolaimus vulgaris* DE MAN 1893, p. 119.
 39. *Enoplolaimus zosterae* SCHULZ 1932, p. 345.

DOUBTFUL SPECIES :

40. *Enoplolaimus balgensis* SKWARRA 1921, p. 8, possibly a synonym of *Enoplolaimus derjugini* FILIPJEV 1929, p. 627. G. SCHNEIDER'S *E. balgensis* SKWARRA certainly is a synonym of *E. derjugini* FILIPJEV.
 41. *Enoplolaimus conicaudatus* ALLGÉN 1929a, p. 16.
 42. *Enoplolaimus gracilisetosus* ALLGÉN 1930e, p. 189, fig. 1-3.
 43. *Enoplolaimus macrochaetus* ALLGÉN 1929a, p. 15, as far as may be concluded from the very insufficient figures, probably belongs to the genus *Enoploides* BUETSCHLI.
 44. *Enoplolaimus paradentatus* ALLGÉN 1932b, p. 111.

It is absolutely impossible to conclude whether the present species belongs to the genus *Oxyonchus* FILIPJEV or to the genus *Mesacanthion* FILIPJEV. In Allgén's figure apparently two subventral teeth are depicted, the dorsal tooth is not to be seen. Therefore one cannot be sure to which genus this species ought to be brought. Allgén himself interpretes one of the subventral teeth as a lateral tooth, which is impossible since a lateral tooth never occurs in one of the representants of the 3 above mentioned genera.

45. *Enoplolaimus primitivus* ALLGÉN 1929b, p. 441.
 46. *Enoplolaimus similis* ALLGÉN 1929a, p. 14.
 May be *Enoplolaimus vulgaris* DE MAN, but impossible to decide from figure and text.
 47. *Enoplolaimus stateni* ALLGÉN 1930c, p. 251.
 Belongs to the genus *Oxyonchus* and may be an synonym of *Oxyonchus australis* DE MAN, but is insufficiently characterised.

KEY TO THE GENERA

- I. The three buccal teeth equal :
 A. Cephalic setae inserted just in front of the cephalic suture :
Enoplolaimus DE MAN.
 AA. Cephalic setae inserted in the middle of the head or even in front of the middle:
Mesacanthion FILIPJEV.
 II. The three buccal teeth unequal; cephalic setae inserted in the middle of the head :
Oxyonchus FILIPJEV.

GENUS ENOPLOLAIMUS DE MAN 1893 s. str.

Syn. : *Enoplus* DUJARDIN 1845 ex parte.

KEY TO THE SPECIES

I. Head with 4 crowns of cephalic setae and numerous subcephalic setae :

Enoplolaimus caput medusae DITLEVSEN.

II. Only two crowns of cephalic setae and a few subcephalic setae :

A. Nervering on 2/3 of the œsophageal length :

Enoplolaimus abnormis KREIS.

AA. Nervering in front of the middle of the œsophagus :

a. Tail longer than 10 anal diameters :

Enoplolaimus longicaudatus (SOUTHERN).

aa. Tail under 6 anal diameters :

B. The long cephalic setae reach $1 \times S$:

Enoplolaimus vulgaris DE MAN.

BB. The long cephalic setae reach $1,5-2 \times S$:

b. The four shorter submedian setae reach $1,5 \times S$:

Enoplolaimus halophilus DITLEVSEN.

bb. The four shorter submedian setae at the utmost $1 \times S$:

c. Width at the end of the tail 0,5 anal diameter :

Enoplolaimus derjugini FILIPJEV.

cc. Width at the end of the tail 0,25-0,33 anal diameter :

d. Length under 2 mm. :

Enoplolaimus propinquus DE MAN.

dd. Length over 2,5 mm. :

Enoplolaimus zosterae SCHULZ ⁽¹⁾.

2. *Enoplolaimus propinquus* DE MAN 1922.

Fig. 4-10.

REFERENCES :

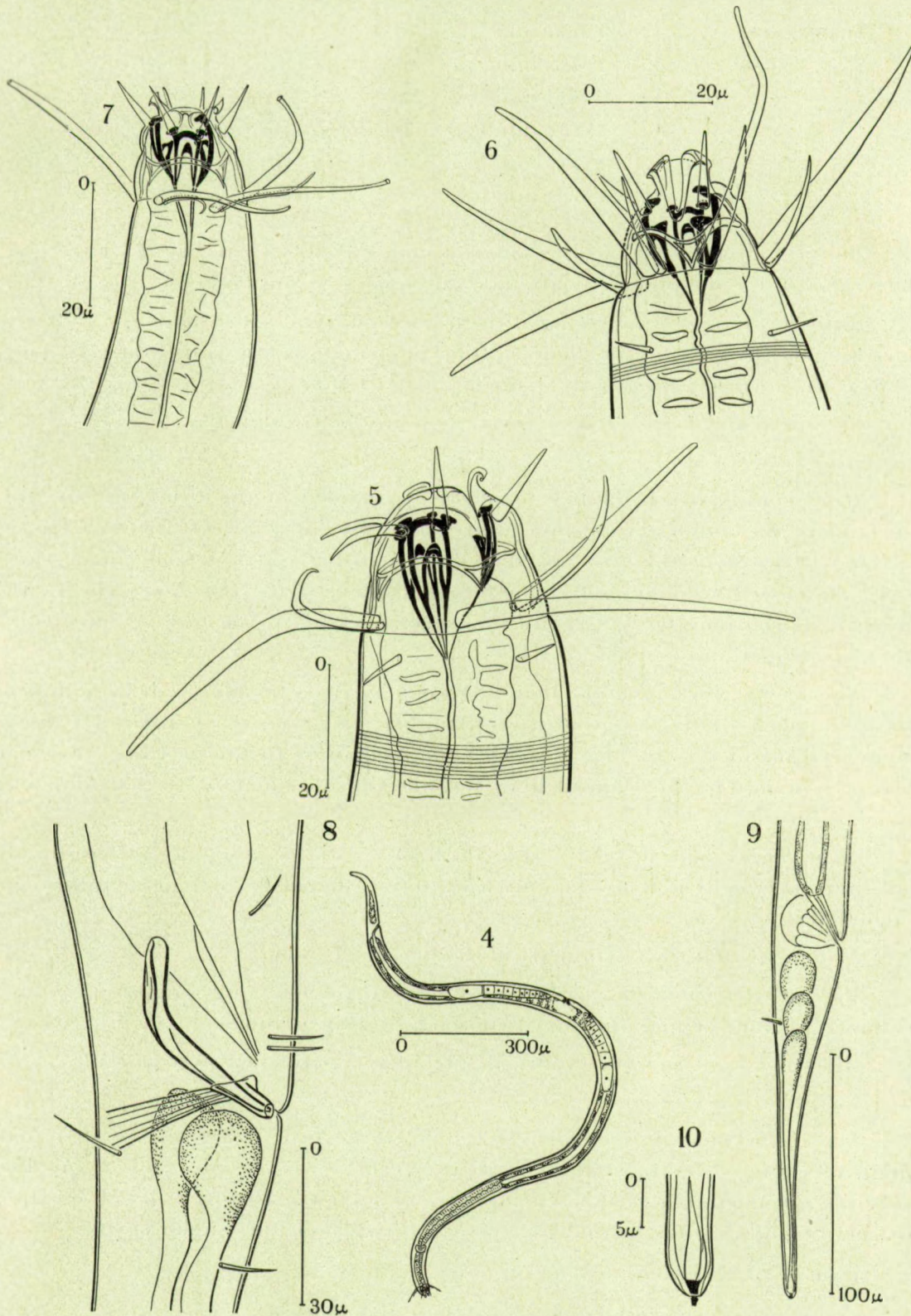
DE MAN 1922b, p. 257, fig. 47a-b.

DE MAN 1922a, p. 132.

ALLGÉN 1929, p. 7.

2 ♂♂, 1 juv. ♀, 4 juv. specimens from 't Zwyn, 28.XII.1931, *Enteromorpha* and sand between poles; salinity 27,2 ‰.

⁽¹⁾ *Enoplolaimus zosterae* differs from *Enoplolaimus propinquus* mainly in size and perhaps in the length of the labial setae.



Enoplolaimus propinquus DE MAN.

- 4. General view of a young female.
- 5. Head end of a male.
- 6. Head end of a young female.
- 7. Head end of a juvenile.

- 8. Spicular apparatus of a male.
- 9. Tail of a juvenile.
- 10. Tip of tail.

DIMENSIONS : ♂. L. : 1,625 mm.; α : 33,5; β : 3,8 ; γ : 10,4 .
 juv. ♀. L. : 1,675 mm.; α : 30 ; β : 5,4 ; γ : 8,1 ; V. : 55,7 %.
 juv. L. : 0,800 mm.; α : 28 ; β : 2,9 ; γ : 6,4 .
 L. : 1,272 mm.; α : 33 ; β : 3,5 ; γ : 6,6 .
 L. : 1,350 mm.; α : 36,5; β : 3,38; γ : 9,64.
 L. : 1,370 mm.; α : 37 ; β : 3,7 ; γ : 9 .

Body of almost equal width; anterior end only 0,6 × the width at the posterior end of the œsophagus; body more attenuated posteriorly.

Cuticula smooth, finely ringed in the inner layers; some hairs are scattered all over the body. In the male a subcephalic crown of comparatively long (0,6 × the corresponding body diameter) hairs is found.

Lateral fields broad, 11/28 × corresponding body diameter.

Amphids not seen.

Head comparatively clumsy, conical to rounded at the front; in juvenile specimens its height, from the suture line till the base of the labial setae = 0,5 — 0,6 × S; in the juv. ♀ : 0,55 × S; in the ♂ : 0,55 × S; 6 labial setae, 0,4 — 0,5 × S; 10 cephalic setae; the 6 longer ones reach 1,5 — 2 × S, the 4 submedian shorter ones 0,8 × S in juvenile specimens and in the juv. ♀; in the ♂ they are longer and reach 1 — 1,1 × S.

Buccal cavity with 3 broad mandibles, anchored in the bodywall by hammer-like cuticularisations; longitudinal pillars narrow, connected anteriorly by a somewhat broader arch. Each jaw bears a median tooth; the teeth are of equal length. Mandibles surrounded by a ringlike capsule identical to that found in other species.

Œsophagus typical. *Nerve* on 0,33 — 0,5 × œsophageal length; in juvenile specimens it is found somewhat more caudad (0,5) than in fullgrown ones (0,33).

Female genital tract symmetrical, recurved.

Male genital armature. *Spicula* 1,13 anal diameters long, curved; proximal end with a kind of manubrium, distal end slightly pointed.

Gubernaculum short, cylindrical, plate-like, broadened posteriorly.

Supplementary organ overseen.

Tail in the juvenile specimens 5,2 — 6, in the juv. ♀ 5,2, in the ♂ 4 anal diameters long. Width at the end in the ♂ 0,25, in the juv. ♀ 0,25, in the juvenile specimens 0,2 — 0,33 anal diameters. First 2/3 conical, last 1/3 cylindrical. *Caudal glands* behind the rectum, situated in the caudal cavity.

HABITAT : On *Enteromorpha* on poles; salinity 27,2 ‰.

GEOGRAPHICAL DISTRIBUTION : North Sea and Baltic.

Remark. — De Man's figure apparently was taken after a specimen with exceeding conical head. The specimens studied by the senior author from the same habitat as De Man's mostly have broader heads and agree completely with our specimens.

GENUS OXYONCHUS FILIPIJEV 1925.

Syn. : *Enoplolaimus* DE MAN ex parte.

Until now 7 good and 1 doubtful species of the genus *Oxyonchus* are known. Compare the list of species of *Enoplolaimus* s. lat. (p. 38 & 39).

The mentioned 7 species may be identified by means of the following key.

KEY

I. Length of tail 10 anal diameters :

Oxyonchus dubius (FILIPJEV).

II. Length of tail no more than 6 anal diameters :

A. Mandibles without denticles on the fields between the median tooth and the mandibular front-arch :

Oxyonchus acantholaimus (SSAVELJEV).

Oxyonchus australis (DE MAN).

AA. The same fields with denticles :

a. Spicula slender, more than 6 × as long as wide, 1,5 anal diameters long :

B. Width at tip of tail 0,3 anal diameters :

Oxyonchus elegans (SCHULZ).

BB. Width at tip of tail 0,12-0,07 anal diameters :

Oxyonchus hamatus (STEINER).

Oxyonchus crassidens (DITLEVSEN).

aa. Spicula short and broad, no more than 5 × as long as broad, 1,25 anal diameters long :

Oxyonchus dentatus (DITLEVSEN).

Among the above-named forms *Oxyonchus dentatus* (Ditlevsen) only was found along the Belgian Coast by Schuurmans Stekhoven & Adam 1931. (Cf. there p. 20, pl. IV, fig. 2-4.)

II. — FAMILY OXYSTOMIDAE.

GENUS TREFUSIA DE MAN 1893.

Syn. : *Bognenia* ALLGÉN 1932.

3. *Trefusia longicauda* DE MAN 1893.

Syn. : *Bognenia littoralis* ALLGÉN 1932.

REFERENCES :

ALLGÉN 1932c, p. 424, fig. 10.

DE MAN 1893, p. 5, pl. V, fig. 3.

1 ♂ and 4 ♀ ♀ from 't Zwyn; sand and organic detritus, 28.XII.1931; NaCl : 21 ‰.

The tail is frail and may easily break off, which may alter the index γ considerably.

GEOGRAPHICAL DISTRIBUTION : Channel, Northsea and Baltic.

III. — FAMILY ONCHOLAIMIDAE.

In his paper on the *Oncholaiminae* 1932, Kreis announces a monographical treatment of this group of freeliving marine nemas.

Therefore we have not treated the genera occurring in the Belgian region as thorough as was done with the foregoing family.

Including the present material, representants of the following genera were observed : *Oncholaimellus* De Man, *Adoncholaimus* Filipjev, *Metaparoncholaimus* n. g., *Oncholaimus* Dujardin, *Metoncholaimus* Filipjev, *Viscosia* De Man and *Anoplostoma* Buetschli.

Here we will treat only those species occurring in our material, giving for them at the same time extensive references and synonymy.

GENUS ONCHOLAIMELLUS DE MAN 1890.

Syn. : *Oncholaimus* DUJARDIN ex parte.

The only species of *Oncholaimellus* found up to the present is : *Oncholaimellus calvadosicus* De Man. Our specimens belong to the same species.

4. *Oncholaimellus calvadosicus* DE MAN.

Fig. 11-14.

Syn. : *Oncholaimus littoralis* ALLGÉN.

REFERENCES :

DE MAN 1890, p. 190, pl. V, fig. 10-10e.

ALLGÉN 1929b, p. 442, fig. 8a-b, *O. littoralis*.

14 ♂♂, 11 ♀♀, 53 juv. from Heyst-Zeebrugge, 2.IX.1931, making 8,2 % of the material from the given habitat.

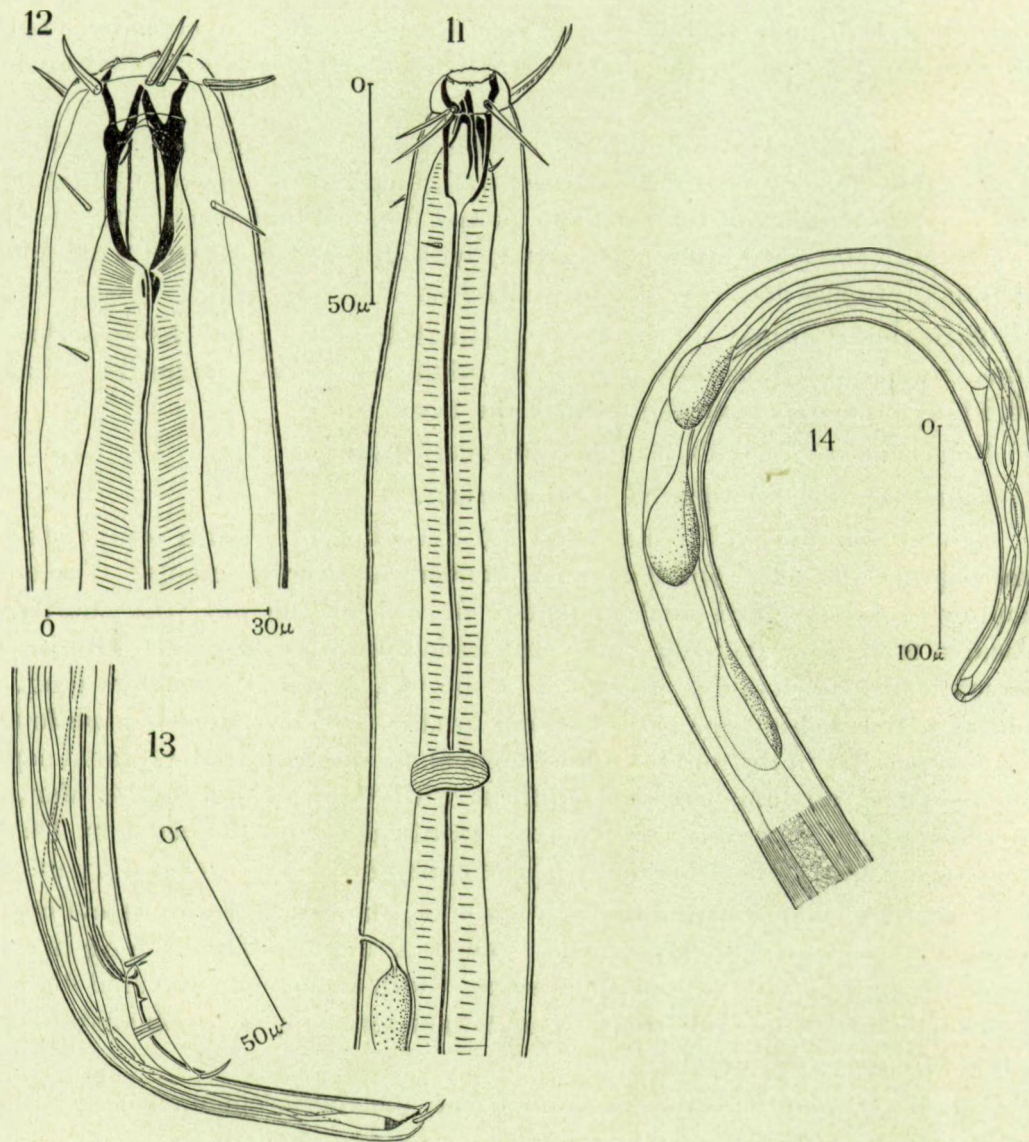
1 ♀ from 't Zwyn, 28.XII.1931, sand and detritus; NaCl : 21 ‰.

1 ♂ and 1 juv. Harbour (entrance) Oostende; DE SAEDELEER, IX.1931.

DIMENSIONS : ♂. L. : 1,66 mm.; α : 58,3; β : 4,6 ; γ : 17,5.

♀. L. : 1,96 mm.; α : 51 ; β : 5,01; γ : 15,8; V. : 45 %.

Cuticula smooth, showing faint longitudinal striations, bearing a few short bristles, scattered over the anterior end.



Oncholaimellus calvadosicus DE MAN.

- 11. Anterior end of a male with expanded buccal cavity.
- 12. Head end of a female.
- 13. Copulatory apparatus and tail of a male.
- 14. Posterior end of a female with spinneret glands.

Lateral fields broad, $1/3 \times$ body diameter.

Amphids not observed.

Head (fig. 11 and 12) distinctly set off against the remainder of the body in the male, indicated only by a faint line in the female; possesses 6 lips with as much labial papillae.

There are 10 cephalic setae; in the male $1,15 \times$ corresponding cephalic diameter, the paired ones of almost equal size; in the female, the cephalic setae are distinctly shorter than in the male and reach only $0,5 \times$ corresponding body diameter.

Buccal cavity. Vestibulum rather voluminous. The oral cavity is divided into 2 sections by a circular cuticularised wall, found at the end of the first third; from here the larger subventral tooth points forward and reaches till the posterior limit of the vestibulum. On a level with the cuticularised wall 2 other teeth are found, a dorsal and a second subventral one.

Oesophagus normal. *Ventral gland* situated caudad from the posterior end of the oesophagus. *Excretory pore* in the middle of the oesophagus, at a distance of 6,6 buccal cavities from the front of the head.

Nerving at 0,37-0,40 of the oesophageal length.

Female genital tract paired, asymmetrical.

Genital armature of the male (fig. 13) consisting of a bursa copulatrix with some papillae and setae, and 2 unequal, slender and narrow spicula. The longer spiculum measures 3,84 anal diameters or $3/4$ of the tail; the shorter one measures 2,36 anal diameters. No gubernaculum was observed. Bursa very characteristic, envelopping about $1/3$ of the tail, 1,8 anal diameters long. In front as well as behind it a pair of strong bristles is seen. Moreover we found a couple of papillae in the middle of the bursa, and a single median postanal papilla. The described relations are not conform with those found by De Man, but other specimens showed a picture quite identical to that depicted by De Man in his figure 10a. The 4 preanal papillae apparently were overseen by us.

Tail. The male tail gradually attenuates, the last $3/4$ almost cylindrical, ending with a conical sucker; dorsal from it, a single relatively long bristle is found. Length of tail : 5,5 anal diameters; width at the end : 0,5 anal diameter.

Female tail of the same shape, 5 anal diameters long and 0,55 anal diameter wide at the posterior end.

Spinneret glands preanal, asymmetrical; the most cephalic one is situated at $4,4 \times$ the length of the tail from the posterior end of the body.

HABITAT : Coarse sand of the littoral, break-waters and fine sand with much organic detritus.

GEOGRAPHICAL DISTRIBUTION : Channel, North Sea.

Remarks. — Allgén based his species *Oncholaimus littoralis* Allgén 1929 on a juvenile specimen. The general impression of the buccal cavity, the situation

and the shape of the large subventral tooth and the proportions at the posterior end brought us to the conviction that his form is a synonym of *Oncholaimellus calvadosicus* De Man.

GENUS ADONCHOLAIMUS FILIPJEV 1918.

Syn. : *Oncholaimus* DUJARDIN ex parte.

From this genus the species *Adoncholaimus thalassophygas* (De Man) only was found.

5. *Adoncholaimus thalassophygas* (DE MAN) 1890.

Fig. 15-16.

Syn. : *Oncholaimus lepidus* G. SCHNEIDER 1906, nec DE MAN.

Oncholaimus thalassophygas var. *tvarminneensis* G. SCHNEIDER.

REFERENCES :

- | | |
|---|--|
| ALLGÉN 1927a, p. 51. | DE MAN 1884, p. 68, pl. 10, fig. 39. |
| ALLGÉN 1929c, pp. 11-12. | DE MAN 1889, p. 162, pl. 6, fig. 1a-c. |
| ALLGÉN 1929a, p. 18. | DE MAN 1922b, p. 254, fig. 45a-c. |
| ALLGÉN 1931, p. 223. | MICOLETZKY 1921, p. 334. |
| COBB 1930, p. 227. | RIECK 1928. |
| DE CONINCK 1930, p. 123. | SCHNEIDER, G. 1906, p. 33, fig. 15a-c, |
| DITLEVSEN 1911, p. 225. | <i>O. lepidus</i> . |
| FILIPJEV 1918, p. 110. | SCHNEIDER, G. 1926a, p. 223. |
| FILIPJEV 1924, p. 105. | SCHNEIDER, G. 1926b, p. 10. |
| FILIPJEV 1929, p. 680. | SCHNEIDER, W. 1924, p. 215. |
| VAN HÖFFEN 1917, p. 139. | SCHULZ, E. 1932, p. 352. |
| DE MAN 1876, p. 181, pl. 12-13, fig. 48a-c. | SKWARRA, E. 1922. |

1 juv. from brackish water near a fortress at Oostende; NaCl : 15 ‰, 18.XI.1931.

DIMENSIONS : juv. L. : 1,27 mm.; α : 31,75; β : 4,8; γ : 14,1.

We have only to give some additional information about the situation of the excretory pore, which was apparently overseen by our predecessors. It is situated at 1,78 buccal cavities from the anterior end. The amphidial opening measures 0,26 \times corresponding cephalic diameter. Proportions of the tail : length, 4,2 \times anal diameter; width at the end, 0,25 \times anal diameter. In all other essential features, our specimen agrees with the descriptions.

GEOGRAPHICAL DISTRIBUTION : North Sea and Baltic.

GENUS METAPARONCHOLAIMUS nov. gen.

Syn. : *Oncholaimus* ex parte.

This genus is characterised by the possession of 2 large subventral teeth, which feature it has in common with *Paroncholaimus* Filipjev and *Filoncholaimus* Filipjev 1925 (syn. : *Pseudoparoncholaimus* Kreis 1932).

From the first named genus it may be separated by the much shorter spicula, the absence of a gubernaculum and the presence of a tubular demanian vessel in the female; from the latter it may be distinguished by the shape of the tail, by the smaller size of the spicula and the presence of the tubular demanian vessel in the female. From both it differs by the unpaired female genital tract.

To this genus the following species ought to be reckoned :

Metaparoncholaimus campylocercus (De Man), and
Metaparoncholaimus orientalis (Cobb).

Filipjev, in this monograph of 1918, brought the 2 mentioned species to his third group of the genus *Oncholaimus* Dujardin, which group was characterised by a comparatively long tail. According to him one of both subventral teeth was distinctly larger than both other teeth.

The last distinction proves to be incorrect and so we feel obliged to create a new genus for the mentioned species.

Our genus differs from *Oncholaimus* by the different dentition only.

6. *Metaparoncholaimus campylocercus* (DE MAN) 1878.

Syn. : *Oncholaimus campylocercus* DE MAN.

Oncholaimus aequedentatus SCHUURMANS STEKHOVEN & ADAM.

nec *Oncholaimus campylocercus* FILIPJEV = *Oncholaimus campylocercoides*
nom. nov. (see below !)

Fig. 17-19.

REFERENCES :

DE MAN 1878, p. 95, pl. VII, fig. 3a-b.

SCHUURMANS STEKHOVEN & ADAM 1931, p. 25, pl. V, fig. 1-6, *O. aequedentatus*.

nec FILIPJEV 1918, p. 136, pl. IV, fig. 25.

nec FILIPJEV 1922a, p. 104.

2 juv. ♀ and 4 juv. from 't Zwyn, 28.XII.1931, sand and organic detritus; NaCl : 21 ‰.

1 juv. from 't Zwyn, 28.XII.1931, between poles, on *Enteromorpha*; NaCl : 27,2 ‰.

1 ♂ and 10 juv. Oostende harbour (entrance), XI.1931; DE SAEDELEER.

DIMENSIONS : ♂. L. : 2,75-2,97; α : 57,5-62 ; β : 7- 7,47; γ : 41,3-44 .

♀. L. : 3,6 -5,3 ; α : 60,3-78,7; β : 8-10,4 ; γ : 39,7-44,3;

V. : 57,82-60,75 %.

juv. L. : 1,41; α : 40; β : 4,5; γ : 29,4.

Habitus : From nerve-ring towards the anal opening of nearly equal width; body narrowing slightly towards the anterior, more towards the posterior end.

Cuticula smooth, beset with scattered short bristles.

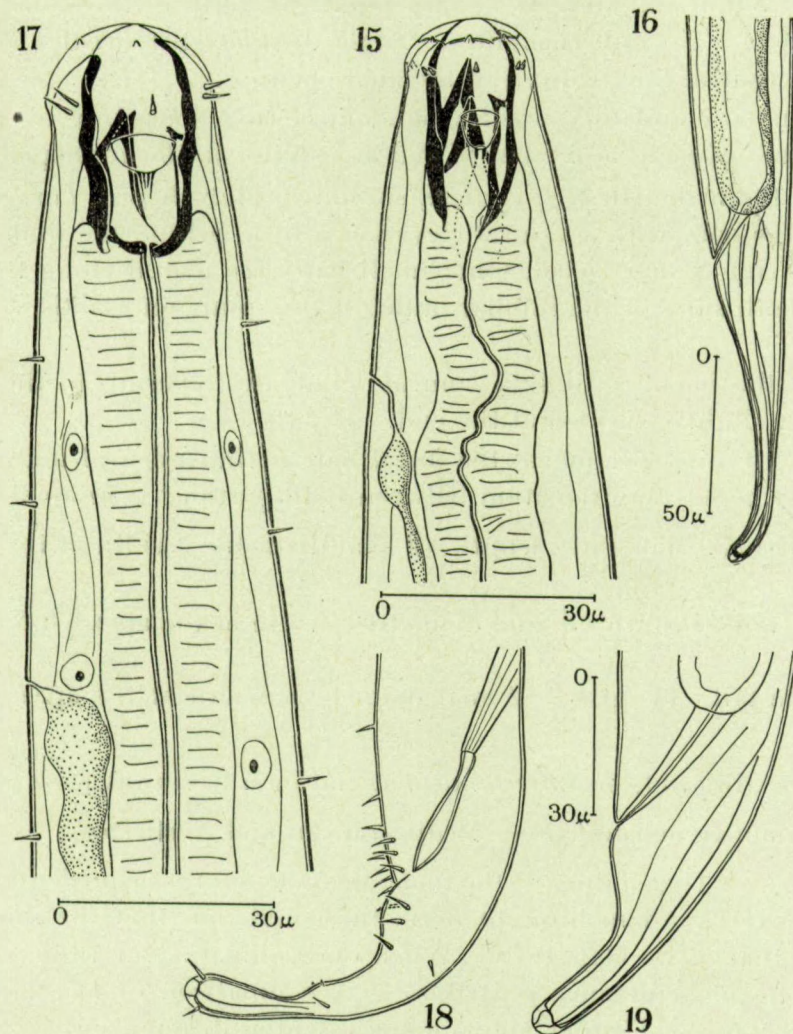
Head with 6 lips and as much small labial papillae; anterior end rounded; 10 cephalic setae, the paired ones of almost equal size, 0,2 × corresponding

cephalic diameter, in a juvenile ♀ $0,37 \times$ corresponding cephalic diameter (fig. 17).

Buccal cavity $2,25 \times$ as long as it is wide, with strong cuticularised walls and bottom; 2 equal, subventral, pointed teeth, reaching the base of the cephalic setae, the dorsal tooth slightly shorter.

Oesophagus broadening towards the posterior end.

Ventral gland situated behind the posterior end of the oesophagus.



Adoncholaimus thalassophygas (DE MAN).

- 15. Head end of a juvenile.
- 16. Tail of a juvenile.

Metaparoncholaimus campylocercus (DE MAN).

- 17. Head end of a juvenile.
- 18. Posterior end of a male.
- 19. Tail of a juvenile.

Excretory pore 2,6-3 buccal cavities from the anterior end.

Nerving in the middle of the œsophagus.

Female genital tract unilateral, outstretched. *Demanian vessels* with 2 pores, situated at 0,5 tail length or ± 2 anal diameters in front of the anal opening.

Testis long. *Spicula* sword-shaped, proximal end slightly swollen, then constricted; the constriction is followed by a broadening which is 2 times as broad as the constriction and ends in a sharp point. Length of the same 28,5 $\mu = 1,2$ anal diameters. No gubernaculum. Some distinct stiff bristles are found in the median ventral line in front of the anal opening.

Circumanal copulatory bristles build up a ring consisting of 2 subventral rows of 6 bristles each, 3 in front of and 3 posterior to the anal opening.

Tail in the male : first $\frac{1}{2}$ conical, second $\frac{1}{2}$ club-shaped, curved ventrally, swollen at the end, with a ventral elevation a little behind the middle (0,55) of the tail, bearing 2 short setae; some small hairs are placed along the subdorsal lines. At both sides of the tubular outlet of the spinneret glands a similar hair is found.

Tail in the female : first $\frac{1}{2}$ conical, gradually tapering to the cylindrical posterior $\frac{1}{2}$, slightly swollen at the end.

In the juvenile specimens, the distal half is fingershaped and not swollen at the end, whereas the transition between both portions is more abrupt.

PROPORTIONS. Male tail : length = 3 anal diameters; width at the apex = 0,42 anal diameters.

Female tail : Length = 4 anal diameters; width at the apex = 0,5 anal diameters.

Juvenile tail : Length = 2 anal diameters; width at the apex = 0,3 anal diameter.

HABITAT : In sand, on *Enteromorpha*, and on a breakwater.

GEOGRAPHICAL DISTRIBUTION : Mediterranean and North Sea.

Remarks. — The finding of the male of *Oncholaimus aequedentatus* Schuurmans Stekhoven & Adam brought us to the conviction that the said species is identical to that of De Man 1878. When one compares our figures with those of De Man the resemblance is striking. A comparison of De Man's and our figures with those of Filipjev shows some essential differences :

1. In Filipjev's form the right and left subventral teeth are far from equal, and conform with the dentition in a typical *Oncholaimus* s. str.

2. The spicula of Filipjev's *O. campylocercus* are nail-shaped, i. e. show neither a constriction nor a proximal and distal widening.

3. In Filipjev's male the ventral elevation on the distal half of the tail is hardly to be seen, whereas it is very distinct in our and De Man's form.

4. Filipjev's male shows a wart-like, voluminous preanal papilla in the midventral line; a similar, although faint papilla was depicted by De Man, 1878, pl. VII, fig. 3b.

These differences, which are very essential, were confirmed by the senior author who, during a short stay at Naples in the summer of 1932, found a male *Oncholaimus* absolutely identical to that figured by Filipjev in his well-known monograph.

This proves that the former species *Oncholaimus campylocercus* embraces 2 different forms, of which that of De Man becomes *Metaparoncholaimus campylocercus* (De Man), whereas we propose to give the name *Oncholaimus campylocercoides* to the form described by Filipjev from the black sea.

N. B. — We apparently did oversee the faint preanal papilla depicted by De Man. Since our species agrees in all essential features with that of De Man, we have not hesitated to identify Schuurmans Stekhoven & Adam's *Oncholaimus aequedentatus* with that previously described by De Man.

GENUS ONCHOLAIMUS DUJARDIN 1845 s. str.

In 1932, the junior author (De Coninck) found several specimens of *Oncholaimus oxyuris* in West-Flanders, at the estuary of the Yser, in the neighbourhood of Nieuport. The same species is present in our material together with *Oncholaimus brachycercus* De Man.

7. *Oncholaimus brachycercus* DE MAN 1889.

Fig. 20-22.

Syn. : *O. marinus* SCHULZ 1932.

O. albidus BASTIAN, BUETSCHLI 1874.

nec *O. albidus* BASTIAN.

nec *O. brachycercus* STEINER = *Paroncholaimus* spec.

REFERENCES :

- | | |
|---|---|
| ALLGÉN 1929c, p. 11. | DE MAN 1889a, p. 5. |
| ALLGÉN 1931, p. 224. | DE MAN 1889b, p. 211, pl. 8, fig. 12-12e. |
| ALLGÉN 1932b, p. 113, fig. 9. | DE MAN 1922b, p. 253, fig. 44a-b. |
| ALLGÉN 1932c, p. 407. | SSAVELJEV 1912, p. 125. |
| BUETSCHLI 1874, p. 39, pl. 9, fig. 39a-c, | SCHULZ 1932, p. 351, fig. 9a-c, <i>O. marinus</i> . |
| <i>O. albidus</i> . | Nec STEINER 1916, p. 603, pl. 28, fig. 23a-b, |
| FILIPJEV 1925, p. 171. | = <i>Paroncholaimus</i> spec. |

3 ♂♂, 2 ♀♀ and 2 juv. at Oostende, 18.XI.1931; NaCl : 30,77 ‰.

DIMENSIONS : ♂. L. : 3,57 mm.; α : 82,7; β : 8,5 ; γ : 67,7.

♀. L. : 3,33 mm.; α : 97 ; β : 7,41; γ : 74,1; V. : 72 %.

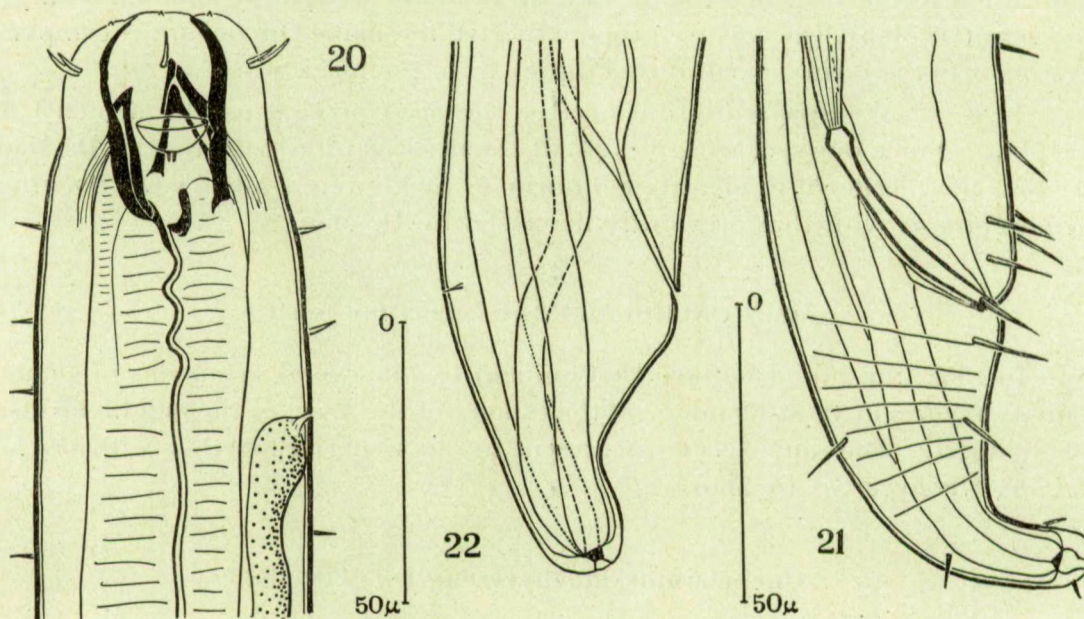
In general, our specimen quite agree with those of De Man, so that some additional notes may suffice.

Amphids in the male, $0,35 \times$ corresponding body diameter (fig. 20).

The longer *cephalic setae* are in the male $0,29 \times$ body diameter, the shorter ones $0,20 \times$ body diameter long.

The *larger subventral tooth* reaches till the base of the cephalic setae; the shorter subventral tooth is blunt at the tip.

Excretory pore in the male 1,81 buccal cavities from the anterior end.



Oncholaimus brachycercus DE MAN.

20. Head end of a male.

21. Spicular apparatus and tail of a male.

22. Tail of a female.

Spicula sword-shaped, with proximal knob-like swelling; distal end inconspicuously broadened; length : 1,6 anal diameters.

Male *tail* 1,65 anal diameters long; width at the end : $0,25$ anal diameters. Female *tail* shorter, 1,46 anal diameters long; width at the end : $0,23 \times$ anal diameters. Last $1/3$ in both sexes cylindrical, not swollen at the end.

Both proximal spinneret gland cells are contiguous, separated from the third by a comparatively large interval. The most proximal one is situated on 18 tail lengths from the posterior end.

GEOGRAPHICAL DISTRIBUTION : Channel, North Sea and Baltic.

Remarks. — Steiner's figure of his so-called *O. brachycercus* distinctly shows 2 equally long subventral teeth and a very small dorsal one. Therefore, his specimen belongs to the genus *Paroncholaimus*.

8. *Oncholaimus oxyuris* DITLEVSEN 1911.

Fig. 23-27.

Syn. : *O. oxyuris* DITL. var. *esknaensis* G. SCHNEIDER 1926.? *Urolabes barbata* CARTER 1859.

REFERENCES :

- | | |
|-------------------------------------|--|
| ALLGÉN 1927a, p. 51. | DITLEVSEN 1911, p. 230, pl. 2, fig. 8, 9,
12 et 13. |
| ALLGÉN 1929c, p. 9. | SCHNEIDER, G. 1926b, p. 9, var. <i>esknaensis</i> . |
| CARTER 1859, p. 43, pl. 3, fig. 32. | SCHNEIDER, G. 1926a, p. 222. |
| DE CONINCK 1932, p. 10, fig. 3. | |

1 ♂, 4 ♀ and 5 juv. from 't Zwyn, NaCl : 21 ‰, sand and organic detritus, 28.XII.1931.

1 ♂, 4 ♀ and 5 juv. from 't Zwyn, NaCl 21 ‰, sand and organic detritus, 28-XII-1931.

DIMENSIONS : ♂. L. : 3 mm.; α : 50; β : 5,55; γ : 55,5.
 ♀. (n=4) L. : 3,5-3,9 mm.; α : 40,8-67,7; β : 6,45-8,08;
 γ : 51,9-67,7; V. : 65-72 %.
 juv. L. : 2,540 mm.; α : 42,3; β : 6,2; γ : 50,8.

At the hand of some new figures, especially of the head and the tail, we will be able to give a more complete image of the present species than was hitherto possible.

For the *habitus*, confer fig. 23.

Cuticula with some scattered, very short hairs, especially numerous on the anterior end.

Amphids : in a few specimens it measured 0,25 × corresponding cephalic diameter, in a male 0,31 × .

Head with 6 lips and as many labial papillae. Ten cephalic hairs, the longer ones 0,29 × the corresponding diameter in a juv. specimen, 0,24 × corresponding diameter in a male; the shorter hairs are 4/5 as long as the longer ones.

Buccal cavity voluminous. Left subventral tooth reaching to the base of the cephalic setae (fig. 24-25).

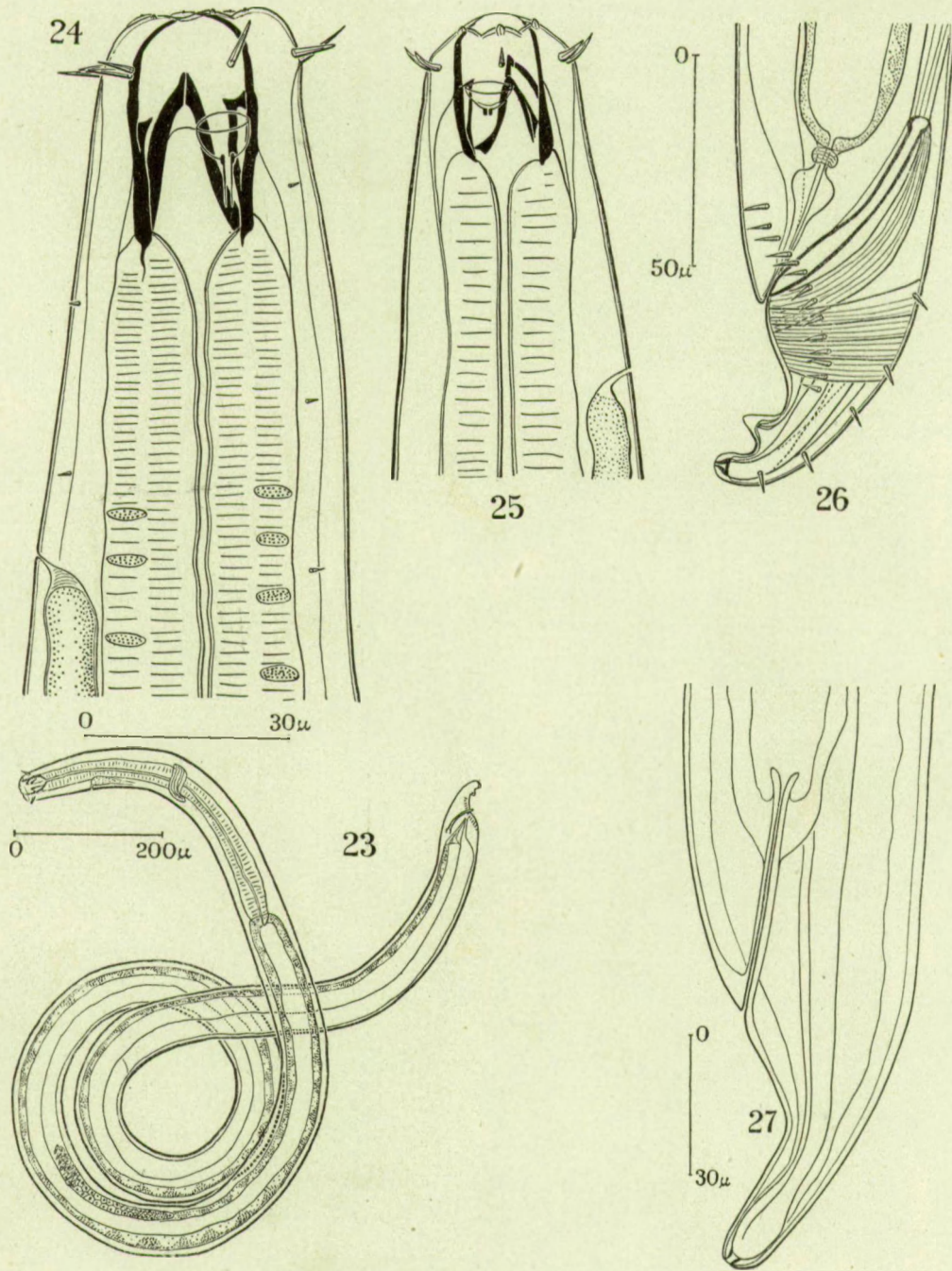
Oesophagus typical. *Nervering* on 0,48 × oesophageal length.

Excretory pore on 2,5 buccal cavities from the anterior end in a male; in a juvenile specimen the same distance was 2,3 buccal cavities.

Testis long, outstretched. *Spicula* sword-shaped, distal half distinctly broadened, its end pointed, proximal end cephalate.

No gubernaculum. Length of spiculum : 1,53 × anal diameter.

A circumanal circle of stiff bristles is found on the male tail, composed of two subventral rows of 14 bristles each; on the dorsal side of the tail some additional hairs occur.



Oncholaimus oxyuris DITLEVSEN.

23. General view of a male.
 24. Head end of a juvenile.
 25. Head end of a male.
 26. Spicular apparatus and tail of a male.
 27. Tail of a juvenile.

Typical for the male sex of this species is a cone-shaped voluminous ventral papilla, just in front of the tailend. Proportions in the male tail : 1,53 anal diameter long, 0,20 anal diameter wide at the end. In the juvenile specimen, the tail resembles in general aspect that of *O. brachyuris* De Man, but may be distinguished from the latter by its greater size and by the fact that the distal cylindrical portion is longer and narrower than in the mentioned species. Proportions : length of tail 1,74 × anal diameter; width at the apex 0,27 = anal diameter; length of the finger-like portion a little more than $\frac{1}{2}$ the whole tail.

GEOGRAPHICAL DISTRIBUTION : Belgium, Danmark, Sweden, Finland; North Sea and Baltic.

Remarks. — *Urolabes barbata* Carter is probably a synonym of *O. oxyuris* Ditlevsen.

GENUS METONCHOLAIMUS FILIPIJEV 1918.

Syn. : *Oncholaimus* DUJARDIN ex parte.

In the literature, 4 different species were ascribed to *Metoncholaimus* (*Oncholaimus*) *albidus* (Bastian) :

1. *Metoncholaimus albidus* (BASTIAN) 1865, p. 137, pl. XI, fig. 141-142.
2. *Metoncholaimus albidus* (BASTIAN), BUETSCHLI 1874, p. 39, pl. IX, fig. 39a-c, identified by DE MAN with his species *O. brachycercus*.
3. *Metoncholaimus albidus* (BASTIAN), DE MAN 1878, p. 93, pl. VII, fig. 2a-c, brought by ZUR STRASSEN 1894, p. 460, pl. XXIX, fig. 2 to his species *Metoncholaimus demani* (ZUR STRASSEN).
4. *Metoncholaimus albidus* (BASTIAN), DE ROUVILLE 1904, p. 793, which species proves to be identical with *Metoncholaimus pristiurus* ZUR STRASSEN 1894, p. 461, pl. XXIX, fig. 1 and 3.

In 1931, Schuurmans Stekhoven and Adam described as new, from the Belgian Coast, *Metoncholaimus denticaudatus* Schuurmans Stekhoven & Adam, 1931, p. 23; pl. IV, fig. 5-8; pl. V, fig. 7-8. This species is, according to our present results a synonym of *Metoncholaimus pristiurus* (Zur Strassen), 1894.

In 1932 Cobb described the same species.

9. *Metoncholaimus pristiurus* (ZUR STRASSEN) 1894.

Syn. : *Metoncholaimus denticaudatus* SCHUURMANS STEKHOVEN & ADAM.
Oncholaimus albidus BASTIAN, DE ROUVILLE.

During their study of *Metoncholaimus denticaudatus*, both authors oversaw the paper of Zur Strassen and had not yet the occasion to have a look at the figures of De Rouville. In the bequest of the late helminthologist Dr. G. De Man, we found a number of copies of the unpublished original figures of De Rouville. Among them was a figure representing the male tail of the species De Rouville

described as *Oncholaimus albidus* Bastian, which is identical as well with the picture of Zur Strassen's *O. pristiurus* as with Schuurmans Stekhoven & Adam's *M. denticaudatus*.

The species *M. albidus* (Bastian), *M. demani* (Zur Strassen) and *M. pristiurus* (Zur Strassen) may be easily distinguished by means of the following key :

I. Spicula as long as the tail :

M. albidus (BASTIAN).

II. Spicula twice as long as the tail :

A. Male tail with subventral, saw-like rows of papillae :

M. pristiurus (ZUR STRASSEN).

AA. Male tail with subventral rows of minute bristles :

M. demani (ZUR STRASSEN).

GENUS VISCOSIA DE MAN 1890.

Syn. : *Oncholaimus* DUJARDIN ex parte.

The genus *Viscosia* De Man embraces a number of species, 4 of which occur in mid-european waters :

1. *Viscosia langrunensis* De Man 1890.
2. *Id. glabra* (Bastian) 1865.
3. *Id. viscosa* (Bastian) 1865.
4. *Id. parva* Kreis 1929.

Viscosia viscosa is the only species found in our material.

10. *Viscosia viscosa* (BASTIAN) 1865.

ALLGÉN 1929c, p. 12.

KREIS 1929, p. 33.

ALLGÉN 1929a, p. 17.

DE MAN 1890, p. 184, pl. IV, fig. 7.

ALLGÉN 1931, p. 224.

DE MAN 1922b, p. 258.

BASTIAN 1865, p. 136, pl. XI, fig. 131-133.

SCHULZ 1932, p. 354, fig. 11a-c.

BUETSCHLI 1874, p. 39, pl. 9, fig. 38.

1 ♂ from 't Zwyn, 28.XII.1931, sand and *Enteromorpha* between poles; NaCl : 27,2 ‰.

DIMENSIONS : ♂. L. : 1,7 mm.; α : 55,8; β : 9,9; γ : 16,1.

Our specimen agrees with the description of De Man. We give here only some additional informations.

Spicula. 1,46 anal diameter long. Spinneret glands asymmetrical, pre-anal anterior one 4,5 tail lengths from the posterior end. *Tail* 4,8 anal diameters long and 0,4 anal diameter wide at the posterior end.

GEOGRAPHICAL DISTRIBUTION : The Channel, North Sea and Baltic.

GENUS ANOPLSTOMA BUETSCHLI 1874.

Syn. : *Symplocostoma* BASTIAN ex parte.

Oncholaimellus DE MAN ex parte.

11. *Anoplostoma blanchardi* DE MAN 1888.

REFERENCES :

nec ALLGÉN 1928a, p. 274 = *A. campbelli* ALLGÉN 1932 ?

DE CONINCK 1930, p. 116, *Prismatolaimus intermedius* BUETSCHLI (see below).

DE MAN 1888, p. 18, pl. II, fig. 10-10c.

1 juvenile specimen from 't Zwyn, organic detritus and sand, 28.XII.1931; NaCl : 21 ‰

In 1930 the junior author found 3 females and 8 juvenile specimens from this species in adjacent habitats in the Zwyn.

Those species were brought by him to *Prismatolaimus intermedius* Buetschli, as he had not yet experience with marine nemas.

De Man pointed also out the great resemblance of this species with *Prismatolaimus*.

GEOGRAPHICAL DISTRIBUTION : The Channel, North Sea, Baltic and Black Sea.

IV. — FAMILY DORYLAIMIDAE.

GENUS SYRINGOLAIMUS DE MAN 1888.

This genus embraces 3 species :

1. *Syringolaimus brevicaudatus* MICOLETZKY 1922, p. 97.
2. *Syringolaimus smarigdus* COBB 1928, p. 249, fig. 1, probably a synonym of *Syringolaimus striaticaudatus* DE MAN.
3. *Syringolaimus striaticaudatus* DE MAN 1888, p. 35, pl. III & IV, fig. 16-16c.

KEY TO THE SPECIES OF THE GENUS SYRINGOLAIMUS

I. Tail without transverse striae...

Syringolaimus brevicaudatus MICOLETZKY.

II. Tail with transverse striae...

Syringolaimus striaticaudatus DE MAN.

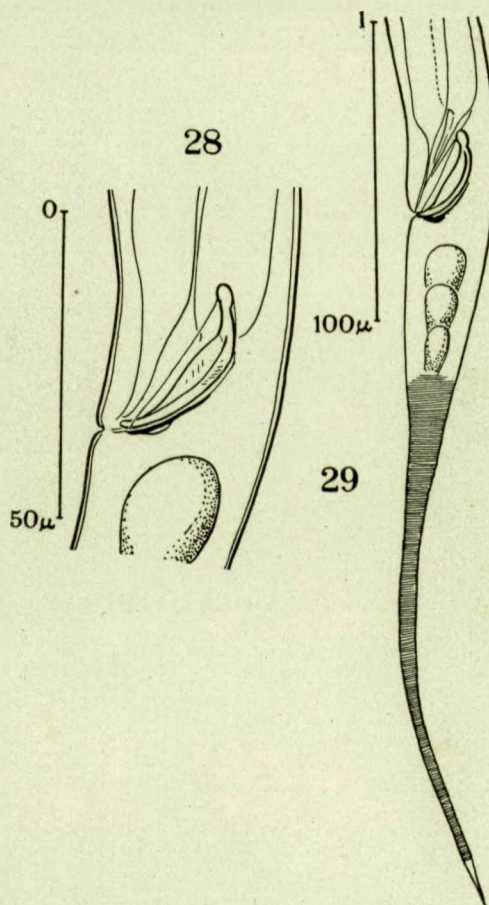
12. *Syringolaimus striaticaudatus* DE MAN 1888.

Fig. 28-29.

Syn. : *Syringolaimus smarigdus* COBB 1928.

REFERENCES :

- ALLGÉN 1929a, p. 23. MICOLETZKY 1924, p. 255.
 COBB 1928, p. 249, fig. 1, *S. smarigdus*. MICOLETZKY 1930, p. 335.
 DE CONINCK 1932b, p. 17, fig. 7-9. STEINER 1918, p. 5.
 DE MAN 1888, p. 35, pl. III-IV, fig. 16. STEINER 1921b, p. 11, pl. I, fig. 2a-d.
 1 ♂ and 1 juv. from 't Zwyn, on *Enteromorpha* between poles, 28.XII.1931; NaCl: 27,2 ‰.

*Syringolaimus striaticaudatus* DE MAN.

28. Spicular apparatus of a male.

29. Tail of a male.

Some additional notes may be given :

Spicula 1 anal diameter long, curved, broad, with proximal knob, distal end bluntly rounded. *Gubernaculum* tender. Tail of the ♂ 8,43 anal diameters long; at the base of the long conical outlet it is only 0,125 × anal diameter wide. *Bulbus oesophagi* with strong inner lining.

GEOGRAPHICAL DISTRIBUTION : Cosmopolite.

ORDER II : CHROMADOROIDEA

To this order the following families ought to be reckoned according to our opinion :

1. *Cyatholaimidae* = *Cyatholaiminae* Filipjev.
2. *Choanalaimidae* = *Choanolaiminae*.
3. *Desmodoridae* = *Desmodorinae*.
4. *Draconematidae* = *Draconematinae*.
5. *Epsilonematidae*.
6. *Chromadoridae* = *Chromadorinae*.
7. *Comesomidae* = *Comesominae*.
8. *Microlaimidae* nov. fam.

We exclude from this order the *Camacolaimidae* = *Camacolaiminae* (see below, p. 110), whereas the family *Comesomidae* is shifted from the *Monhysteroidea* to this order.

Along the Belgian Coast, representants of all groups — the *Draconematidae* and *Epsilonematidae* (Steiner 1932) excepted — are found.

I. — FAMILY CYATHOLAIMIDAE.

GENUS CYATHOLAIMUS BASTIAN 1865.

Syn. : *Necticonema* MARION 1870.

Until now 2 marine species of this genus were observed along the Belgian coast :

Cyatholaimus punctatus Bastian 1865, and
Cyatholaimus demani Filipjev 1918.

13. *Cyatholaimus punctatus* BASTIAN 1865.

Fig. 30-34.

REFERENCES :

BASTIAN 1865, p. 164, pl. XIII, fig. 217-218.

DE MAN 1890, p. 180, pl. IV, fig. 6a-h.

1 ♂, 1 ♀ from 't Zwyn, 28.XII.1931, between poles on *Enteromorpha*; NaCl : 27,2 ‰.

DIMENSIONS : ♂. L. : 2,040 mm.; α : 31,95; β : 8,71; γ : 11,8.

juv. ♀. L. : 1,512 mm.; α : 24,2 ; β : 9,5 ; γ : 10,8; V. : 42,9 %.

Body from nerving to anal opening almost cylindrical (fig. 30), anteriorly only slightly narrowed.

Cuticula distinctly ringed, the rings marked by points; in the dorsal and ventral fields one or more rows of finer pointlets are found on the ring surface; on the lateral fields these supernumerous rows of dots are absent. Short setae are distributed all over the body surface, especially along the submedian lines.

Lateral fields 0,33 — 0,4 × body width, with irregularly scattered pori.

Amphids large, spiral, with 4 circumvolutions; diameter in the male $12,8\mu = 0,32 \times$ corresponding body diameter. In the female they are slightly smaller and measure $0,25 \times$ the corresponding body diameter. They are situated at 1 amphidial diameter caudad from the base of the cephalic setae.

Head (fig. 31) obtusely rounded; 6 lips with as many small labial papillae. From the 10 cephalic setae, 6 have a length of $10\mu = 0,4 \times$ the cephalic diameter, the other 4 reach $\frac{2}{3}$ of the longer ones.

Buccal cavity cyathiform, 13μ deep, with 12 longitudinal ribs and an inconspicuous dorsal tooth.

Oesophagus cylindrical.

Ventral gland situated on $0,8 \times$ the length of the oesophagus behind the base of the oesophagus. *Excretory pore* opens just in front of the nerving, at $0,6 \times$ oesophageal length.

Female genital tract paired, symmetrical.

Male genital armature. *Spicula* broad and strong, shorter than the gubernaculum; their distal end is cut off obliquely; proximally they are knobbed. Two long longitudinal crests are visible.

The maximal width of the spicules is found in their inferior $\frac{1}{2}$.

Spicula : $0,77 \times$ anal diameter.

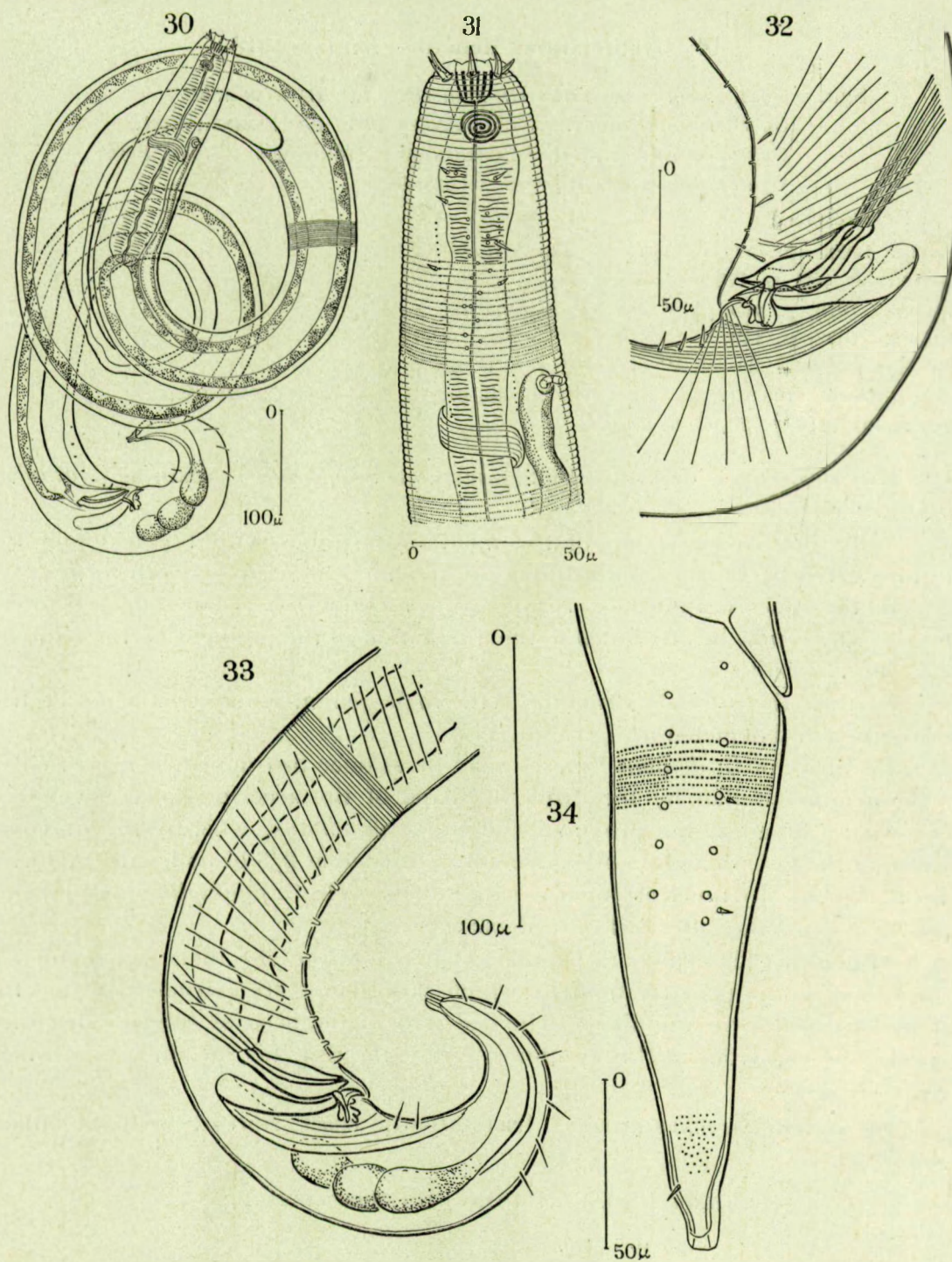
Accessory piece 1 anal diameter long, very complicated and strong, consisting of a small irregularly shaped median piece and two large lateral plates, the proximal parts of which being at the same time the widest portions, narrowing to the distal ends where strong, pointed expansions occur, set off against the distal part by strong walls. These pointed expansions bear one very strong claw-shaped prong, two obtuse ventral points and a fourth, fainter median point (cf. fig. 32). There are 6 or 7 preanal papillae; the distance between the successive papillae increases gradually in the cephalic direction.

Tail conical, tapering gradually (fig. 33 & 34); 2,8 anal diameters long in the male, 3 anal diameters in the female. Width at the apex : 0,17 anal diameter in the male, 0,15 anal diameter in the female. Some comparatively long setae appear on the dorsal side of the male tail, whereas the hairs in the female tail are scarce and minute.

Spinneret-glands with a tubular outlet.

GEOGRAPHICAL DISTRIBUTION : Channel and North Sea.

Remarks. — We did not observe the eye-spots, which is probably due to the fact that the pigment was dissolved during the stay in the fixation fluid.



Cyatholaimus punctatus BASTIAN.

- 30. General view of a male.
- 31. Head end of a male.
- 32. Spicular apparatus of a male.
- 33. Posterior end of a male.
- 34. Tail of a female.

14. *Cyatholaimus demani* FILIPJEV 1918.

Syn. : *Cyatholaimus ocellatus* DE MAN 1889, nec BASTIAN 1865.
Cyatholaimus canariensis DITLEVSEN 1923, nec STEINER 1921.
Cyatholaimus dittevseni SCHUURMANS STEKHOVEN & ADAM 1931.
Cyatholaimus papilliferus ALLGÉN 1929.

REFERENCES :

- ALLGÉN 1929*b*, p. 452, fig. 15*a-c*, *C. papilliferus*.
 DITLEVSEN 1923, p. 179, *C. canariensis*.
 FILIPJEV 1918, p. 195, pl. V, fig. 37, *C. demani*.
 FILIPJEV 1922, p. 113.
 DE MAN 1889*b*, p. 20, pl. VI et VII, fig. 9, *C. ocellatus*.
 SCHUURMANS STEKHOVEN & ADAM 1931, p. 28, pl. VI, fig. 4-8, *C. dittevseni*.
 SOUTHERN 1914, p. 29, *C. ocellatus*.

This species was described by Schuurmans Stekhoven & Adam as *Cyatholaimus dittevseni* n. sp.

A thorough comparison of the mentioned species with the text and the figures given by De Man and Filipjev proves the synonymy of both forms.

In the species studied by Schuurmans Stekhoven & Adam no ocelli were found, which may be attributed to the dissolution of the pigment by the fixative. (Cf. also SOUTHERN, p. 29.)

Further, the intricate structure of the male genital armature was not clearly recognised and depicted in fig. 7, pl. VI.

The male of *C. demani* Filipjev may be at once distinguished from that of *C. punctatus* Bastian by the different shape of the accessory piece, which is excessively broad at the proximal end in *C. punctatus*, whereas the maximal width of the gubernaculum of *C. demani* is situated at $\frac{2}{3}$ of its length. Moreover the spicula are much stronger in *C. punctatus*. In *C. punctatus* small preanal papillae occur; the latter fail in *C. demani*.

Allgén in 1929 depicts as papillae what is nothing else than a phenomenon connected with a poor fixation, by which skin-glands are extruded and get the shape of papilliform ampullae. The bad state of the head of Allgén's specimen speaks also in favour of this opinion. As for the rest, his specimen is identical with our species.

GEOGRAPHICAL DISTRIBUTION : Irish Atlantic coast, North Sea, Baltic, Black Sea.

GENUS PARACANTHONCHUS MICOLETZKY 1924.

Syn. : *Cyatholaimus* BASTIAN ex parte.

In the Belgian fauna two species of *Paracanthonchus* occur :

1. *Paracanthonchus caecus* Bastian, and
2. *Paracanthonchus spectabilis* Allgén.

The first species is new to the Belgian fauna.

15. *Paracanthonchus caecus* (BASTIAN) 1865.

Fig. 35-37.

REFERENCES :

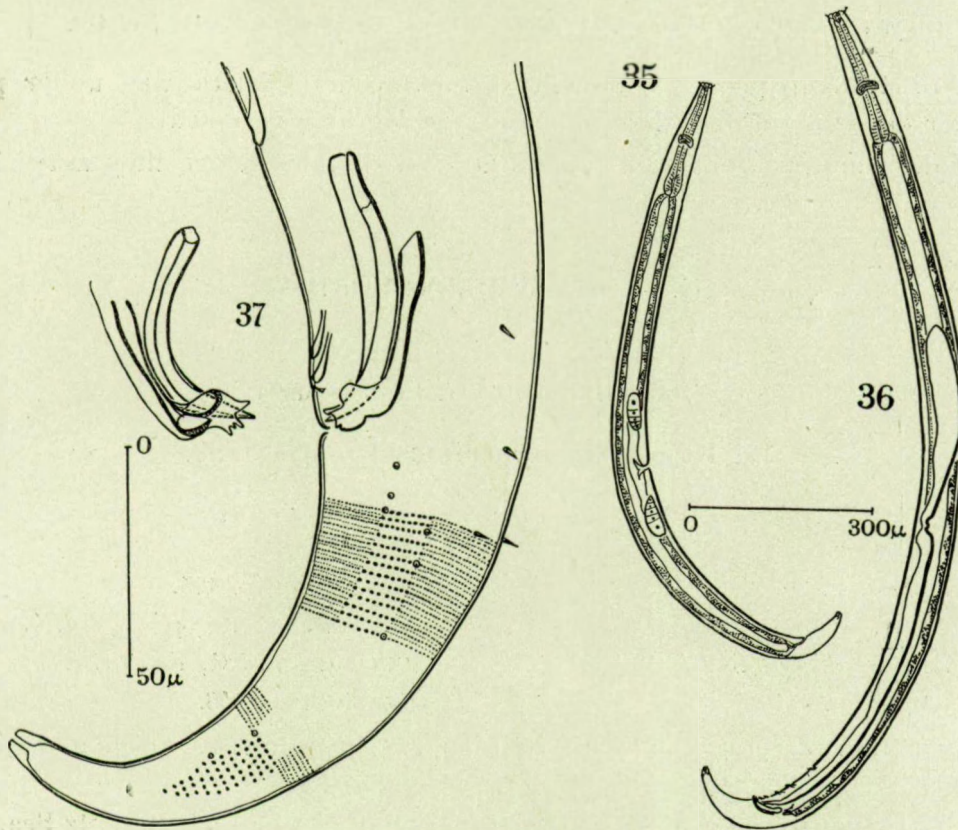
- | | |
|--|---|
| ALLGÉN 1927a, p. 53. | Nec FILIPJEV 1922a, p. 113, pl. I, fig. 10. |
| ALLGÉN 1927b, p. 268. | KREIS 1929, p. 43. |
| ALLGÉN 1928b, p. 36, fig. 1-2. | DE MAN 1889b, p. 204, pl. VII, fig. 10-10g. |
| ALLGÉN 1929c, p. 17. | DE MAN 1922b, p. 238, fig. 27. |
| ALLGÉN 1929a, p. 26. | DE ROUVILLE 1904, p. 790. |
| ALLGÉN 1931, p. 233. | SSAVELJEV 1912, p. 123. |
| ALLGÉN 1932c, p. 409. | STEINER 1915, p. 230. |
| BASTIAN 1865, p. 163, pl. 13, fig. 213-214 | STEINER 1916, p. 586. |
| DITLEVSEN 1919, p. 198, pl. XV, fig. 4. | STEINER 1921b, p. 47. |

1 ♀ from Knokke-Zoute, on a break-water, 28.XII.1931; NaCl : 30,6 ‰.

1 ♀ from Knokke-Zoute, on the littoral.

14 ♂♂, 10 ♀♀ and 16 juv. from Oostende, on a break-water, 18.XI.1931; NaCl : 30,77 ‰.

2 ♀♀ and 9 juv. from Oostende, on a break-water, harbour entrance, IX.1931 (DE SAE-DELEER).



Paracanthonchus caecus (BASTIAN).

35. General view of a female.

36. General view of a male.

37. Spicular apparatus and tail of a male.

DIMENSIONS : ♂. L. : 1,6 mm.; α : 23,37; β : 6,9; γ : 11.
 ♀. L. : 1,185-1,325; α : 23-25,6; β : 6-6,09; γ : 15,3-20,38;
 V. : 54-54,3 %.

The observed specimens are typical; for *habitus* confer, fig. 35-36.

Male genital armature. Testis outstretched, proximal third swollen.

5 preanal papillae. Spicula slender, 1,5 anal diameters long. Accessory piece 1 anal diameter long, with 4 lateral points, fig. 37.

Male tail 3,3 anal diameters long; width at the apex : 0,17 anal diameter.

GEOGRAPHICAL DISTRIBUTION : North Sea, Zuiderzee, Channel.

16. *Paracanthonchus spectabilis* ALLGÉN 1931.

Syn. : *Paracanthonchus polycyrtus* SCHUURMANS STEKHOVEN & ADAM.

REFERENCES :

ALLGÉN 1931, p. 235, fig. 7a-b.

SCHUURMANS STEKHOVEN & ADAM 1931, p. 30, pl. VI, fig. 9-12, pl. VII, fig. 1-2.

Whilst the paper of Schuurmans Stekhoven & Adam was under press, Allgén's description of *Paracanthonchus spectabilis* was issued.

Now it appears that both species are synonymous, since they agree in all points.

III. — FAMILY DESMODORIDAE.

Fig. 33-39.

GENUS DESMODORA DE MAN 1889.

17. *Desmodora serpentulus* DE MAN 1889.

Syn. : *Desmodora leucocephala* SCHULZ 1932.

REFERENCES :

ALLGÉN 1929a, p. 30.

DITLEVSEN 1919, p. 195.

ALLGÉN 1931, p. 236.

DE MAN 1889, p. 188, pl. V, fig. 4.

ALLGÉN 1932a, p. 443, fig. 2.

SCHULZ 1932, p. 384, fig. 28a-f.

ALLGÉN 1932c, p. 411.

STEINER 1916, p. 546.

1 ♂ from Heyst-Zeebrugge, 2.IX.1931, moulding. Confer fig. 38, which may give an impression of the habitus.

GEOGRAPHICAL DISTRIBUTION : North Sea, Baltic, Channel, Barentz Sea.

Remarks. — After Bresslau-Schuurmans Stekhoven (manuscript) *Desmodora leucocephala* Schulz is a synonym of *D. serpentulus*.

GENUS OISTOLAIMUS DITLEVSEN 1921.

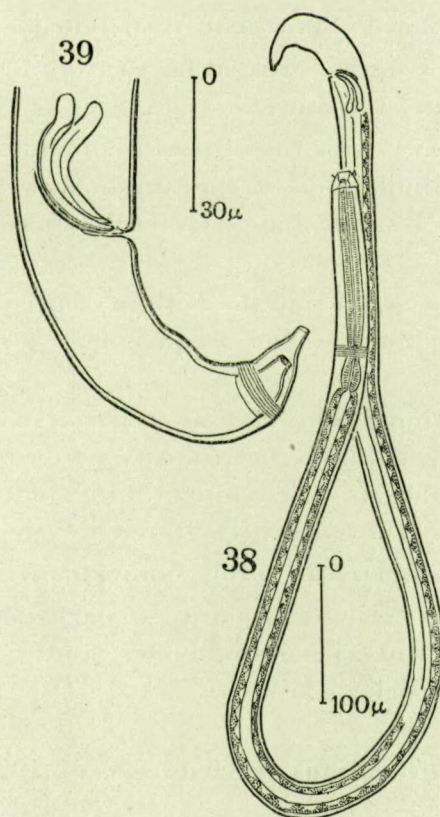
Syn. : *Bradylaimus* SCHUURMANS STEKHOVEN 1931.

REFERENCES :

DITLEVSEN 1921, p. 4.

SCHUURMANS STEKHOVEN 1931, p. 648.

Ditlevsen as well as Allgén based their descriptions on specimens in a rather deteriorate state of fixation. In Ditlevsen's specimens of *Oistolaimus ferox*, the anterior part of the oesophagus had been wholly withdrawn from the buccal



Desmodora serpentulus DE MAN.

38. General view of a male.

39. Spicular apparatus and tail of a moulting male.

cavity, and the spear was therefore placed in a distorted position. Allgén's figure of *Oistolaimus suecicus* does not tell us anything about the real structure of the buccal cavity. This prevented Schuurmans Stekhoven to find out the synonymy, the more, since he apparently oversaw the structure of the spear, which is only very distinct in lateral view.

Although a comparison of the figures given by Ditlevsen and Allgén at one side and those of Schuurmans Stekhoven 1931 and ours at the other side show some differences, especially in the haircloth at the anterior end, which, according to our opinion, may be attributed to the bad condition of the first described individuals, we are convinced that our specimens are congeneric with those of Ditlevsen and Allgén.

It is worth while to give a new generic diagnose :

Body almost cylindrical, of almost the same width in juvenile and adult specimens, with the result that the index α varies considerably in relation with age or length.

Cuticula finely striated, the striations resolvable in extremely minute dots. Lateral fields not differentiated. Short hairs distributed all over the body surface.

Amphids a one-looped spiral, situated far in front of the body, on 1 amphidial diameter or less behind the anterior end.

Head obtusely rounded. Lips fused to a circumoral ring bearing 6 setiform papillae. Between the hindborder of the amphids and the setiform papillae there are three circles of 4 submedian setae each, increasing in size in caudal direction.

Buccal cavity cyathiform. From the bottom of it rises the anterior end of a dorsal spear, which is anchored in the oesophagus. A smaller ventral spear is present.

Oesophagus divided into 3 portions : an anterior swelling, surrounding the spears, followed by a long isthmus that transits into a posterior bulbus, which occupies 1/3 of the oesophagus. The inner lining of the oesophageal bulb is very strong. The bulbus is divided by a transverse slit into 2 equal portions.

Female genital tract apparently bifid, symmetrical. Ovaries reflexed.

Male genital armature : *spicula* strongly curved, widened proximally, pointed at their distal end. Gubernaculum tender, gutter-shaped. Fine preanal papillae present. *Tail* conical.

18. *Oistolaimus suecicus* ALLGÉN 1929.

Fig. 40-41.

Syn. : *Bradylaimus parvus* SCHUURMANS STEKHOVEN 1931.

REFERENCES :

ALLGÉN 1929c, p. 25, fig. 5a-d.

ALLGÉN 1931, p. 238.

SCHUURMANS STEKHOVEN 1931, p. 648, fig. 6a-b.

1 ♂ from Heyst-Zeebrugge, littoral, 2.IX.1931.

1 juvenile specimen from 't Zwyn, on *Enteromorpha* between poles, 28.XII.1931;

NaCl : 27.2 ‰.

DIMENSIONS : ♂. L. : 1,200 mm.; α : 41,6 ; β : 10 ; γ : 19,2.
 juv. L. : 0,770 mm.; α : 21,05; β : 4,82; γ : 9,52.

Allgén's :

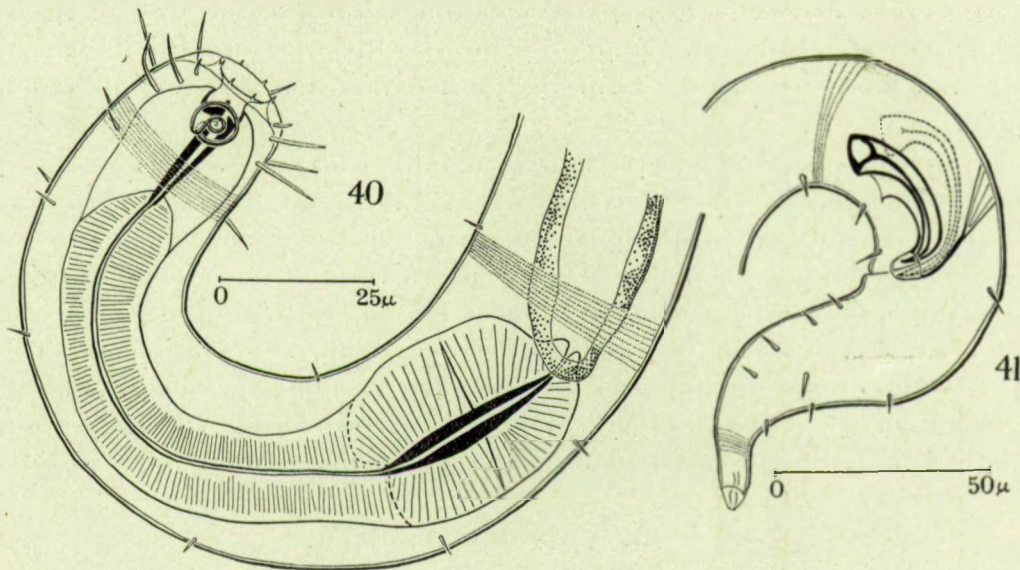
♂. L. : 1,5 mm.; α : 30; β : 9,1; γ : 15.
 ♀. L. : 1,15 mm.; α : 24; β : 7 ; γ : 12,8.

Schuurmans Stekhoven's :

♀. L. : 0,84 mm.; α : 9,25; β : 6,5; γ : 8,5; V. : 67,6 %.

The specimens studied by us agree in general with the diagnose of the genus.
 Width at the anterior end = $4/5 \times$ the maximal width.

Cuticular pointed rings till in front of the amphids.



Oistolaimus succicus ALLGÉN.

40. Anterior end of a juvenile.

41. Spicular apparatus and tail of a male.

Amphids $7,5\mu$ in diameter, opposite to the buccal teeth, $0,33 \times$ corresponding cephalic diameter.

Head. Labial papillae in a juvenile $1,25\mu$ long, in an adult ♂ and ♀ till $4 \times$ as long as in the juvenile specimens.

Anterior crown of setae in a juvenile $3,125\mu$, the hairs of the second crown $9,375\mu$, those of the third crown $11,25\mu$ long.

Buccal cavity shallow; dorsal spear $1/6$ of the oesophageal length.

Neither *nerving* nor *ventral gland* and *excretory pore* were observed.

Spicula curved, $1,2$ anal diameters long, with longitudinal crest: distal end pointed, proximal end much widened.

We apparently did oversee the faint preanal papillae.

Tail conical; in the male : 2,37 × anal diameters; with subventral and subdorsal rows of setae.

GEOGRAPHICAL DISTRIBUTION : North Sea and Baltic.

Remarks. — The very low index α in the specimen studied by Schuurmans Stekhoven in 1931 is probably due to a flattening during the examination.

After all it is possible that *Oistolaimus suecicus* Allgén and *Oistolaimus ferox* Ditlevsen prove to be synonymous, but this cannot be decided after our present knowledge, since the description of Ditlevsen is too incomplete to permit such conclusion

VI. — FAMILY CHROMADORIDAE.

Kreis gave in 1929 a new division of this family on the base of the skin ornamentation. This mode of division meets with difficulties, for, when one follows this line consequently, forms are put together that possess quite different amphids.

Chromadora macrolaima De Man with spiral amphids is brought together with *Chromadora nudicapitata* Bastian with slitlike amphids, since both possess 4 longitudinal rows of conspicuous dots along the lateral fields. At the other hand *Chromadora microlaima* De Man is separated from *C. macrolaima* although both have the same type of amphid, similar buccal cavities, similar male armature and are distinguished mainly by differences in the skin-ornamentation, the first showing 2 rows of points and the latter 4 rows along the lateral fields.

Therefore we prefer to follow Filipjev in considering the shape of the amphids a more essential systematic feature than the skin-ornamentation.

GENUS CHROMADORINA FILIPJEV 1918.

Syn. : *Chromadora* BASTIAN ex parte.

The following Belgian free-living marine nemas belong to the said genus :

1. *Chromadorina macrolaima* (De Man) and
2. *Chromadorina microlaima* (De Man).

19. *Chromadorina macrolaima* (DE MAN) 1889.

Fig. 42-44.

Syn. : *Chromadora macrolaima* DE MAN.

nec *Chromadora macrolaima* DE MAN var. *bergensis* ALLGÉN.

REFERENCES :

- ALLGÉN 1927a, p. 53.
 ALLGÉN 1927b, p. 204.
 ALLGÉN 1928c, p. 296.

ALLGÉN 1929a, p. 36.

DE MAN 1889b, p. 197, pl. VI, fig. 7.

ALLGÉN 1932c, p. 415.

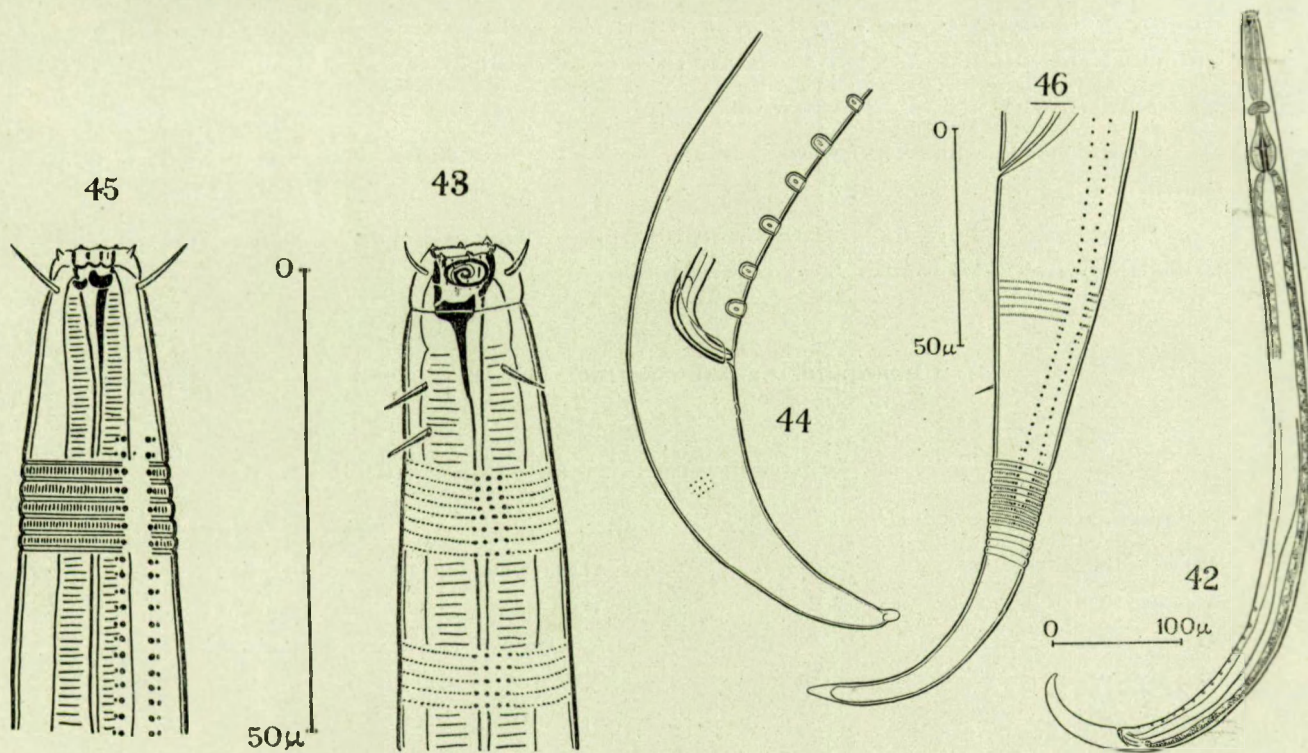
SCHNEIDER, G. 1927, p. 10.

Nec ALLGÉN 1932c, p. 415, var. *bergensis*.

STEINER 1916, p. 532, pl. 18, fig. 2a-d.

2 ♂♂ from Oostende, on a break-water, 18.XI.1931; NaCl : 30,77 ‰.

7 ♂♂, 5 ♀♀ and 1 juv. from Oostende, on a break-water, harbour entrance, IX.1931
(DE SAEDELEER).



Chromadorina macrolaima (DE MAN).

42. General view of a male.

43. Head end of a male.

44. Spicular apparatus and tail of a male.

Chromadorina microlaima (DE MAN).

45. Head end of a female.

46. Tail of a female.

Habitus confer fig. 42.

Cuticula finely ringed, with 4 longitudinal rows of points on the lateral fields. Comparatively long setae are scattered over the body surface.

Amphids spiral, like in the other species of the genus *Chromadorina*, 0,4 × corresponding cephalic diameter, situated on a level with the cephalic setae.

Head obtusely rounded, with 6 labial papillae and 4 cephalic setae, 0,4 × cephalic diameter long.

Buccal cavity with a striated vestibulum; walls of the cavity strengthened; a strong dorsal tooth is anchored in the œsophagus. *Œsophagus* with a distinct bulb, $1/4$ as long as the œsophagus.

Nervering on 55 % of the œsophageal length.

Spicula curved, distal end blunt; chord 1 anal diameter long. *Gubernaculum* gutter-shaped, distal end blunt. There are 12-14 preanal papillae. Among 9 males we found 1×12 , 4×13 and 4×14 preanal papillae; the most anterior one situated at 8,1-9,3 anal diameters in front of the anal opening.

Tail conical, $3,6 \times$ anal-diameter long.

GEOGRAPHICAL DISTRIBUTION : Channel, North Sea, Baltic, Barentz Sea, Tasmania.

Remarks. — The shape of the amphid makes it necessary to shift this species from the genus *Chromadora* to *Chromadorina*.

20. *Chromadorina microlaima* (DE MAN) 1889.

Fig. 45-46.

Syn. : *Chromadorina parva* SCHUURMANS STEKHOVEN & ADAM nec DE MAN.

REFERENCES :

- | | |
|--------------------------------|---|
| ALLGÉN 1927 <i>b</i> , p. 208. | DE MAN 1889 <i>b</i> , p. 199, pl. VI, fig. 8. |
| ALLGÉN 1928 <i>c</i> , p. 297. | DE MAN 1922 <i>b</i> , p. 246, fig. 37 <i>a-b</i> . |
| ALLGÉN 1929 <i>c</i> , p. 22. | SCHUURMANS STEKHOVEN & ADAM 1931, p. 39, |
| ALLGÉN 1929 <i>a</i> , p. 35. | pl. VIII, fig. 8-11, <i>C. parva</i> . |
| ALLGÉN 1931, p. 242. | STEINER 1916, p. 533. |

9 ♂♂, 22 ♀♀ and 9 juv. from Heyst-Zeebrugge, 2.IX.1931.

1 ♀ on a break-water, harbour entrance Oostende, IX.1931 (DE SAEDELEER).

DIMENSIONS : ♀. L. : 0,930 mm.; α : 21; β : 6,5; γ : 7; V. : 50 %.

Cuticula transversely striated with rows of elongated points. The lateral fields are demarcated by two longitudinal rows of very distinct points. The points situated next to the latter are much smaller and show a transition towards the longitudinal points. This feature mislead Schuurmans Stekhoven & Adam to range the species in question under the heading species with 4 longitudinal rows of points in the lateral fields. (Cf. their fig. 9 and 11, pl. VIII). Scanty hairs are scattered over the body surface.

Head with 6 labial papillae, apparently 4 cephalic papillae and 4 cephalic setae : $0,75 \times$ cephalic diameter.

Buccal cavity with a striated vestibulum, a strong, curved, dorsal tooth, anchored into the œsophagus. We are not quite sure whether there are subven-

tral teeth opposite to the first, or if there exists only a circular reinforcement in the wall of the buccal cavity, just like De Man depicts in his fig. 8a.

Oesophagus with a distinct bulb, $0,23 \times$ œsophageal length.

Female genital tract double, symmetrical; ovaries reflexed almost to the vulva. Vulvar glands present.

Tail 5,15 anal diameters long. Width at the end : 0,166 anal diameter.

GEOGRAPHICAL DISTRIBUTION : North Sea, Baltic, Barentz Sea.

GENUS NEOCHROMADORA MICOLETZKY 1924.

Syn. : *Chromadora* BASTIAN ex parte.

Micoletzky has brought *Chromadora poecilosoma* De Man to a new genus : *Neochromadora*.

Neither the material at hand, nor the dates led down in the literature, enable to state if Micoletzky's conclusion is wellfounded. However, to avoid confusion, we think it is wise to adopt provisionally Micoletzky's nomenclature for the species in question.

21. *Neochromadora poecilosoma* (DE MAN) 1893.

Fig. 47-48.

Syn. : *Chromadora poecilosoma* DE MAN.

REFERENCES :

- | | |
|-----------------------|-------------------------------------|
| ALLGÉN 1929c, p. 23. | DITLEVSEN 1919, p. 191. |
| ALLGÉN 1929a, p. 36. | DE MAN 1893, p. 96, pl. VI, fig. 7. |
| ALLGÉN 1931, p. 242. | DE MAN 1922b, p. 247, fig. 38a-d. |
| ALLGÉN 1932c, p. 417. | MICOLETZKY 1924, p. 157. |

2 ♀ ♀ from 't Zwyn, on *Enteromorpha* between poles, 28.XII.1931; NaCl : 27,2 ‰.

DIMENSIONS : ♀ 1 L. : 0,800 mm.; α : 25; β : 6; γ : 6; V. : 48,1 %.
 ♀ 2 L. : 1,010 mm.; α : 30; β : 7; γ : 5; V. : 44,2 %.

Habitus from nerving to the anal opening nearly cylindrical. Width at the anterior end $\frac{2}{3}$ of that in the middle of the body.

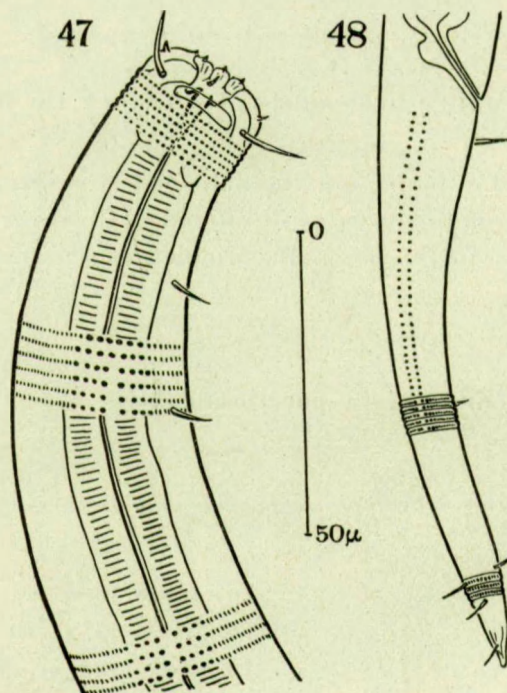
Cuticula distinctly ringed, the rings marked by points. The lateral fields possess distinctly larger dots than the ventral and dorsal surface of the skin. These larger dots are arranged in longitudinal rows. The space between the 4th and 5th row of points is slightly larger than that which separates the other rows of points, thus forming a lateral chord which occupies $\frac{2}{17}$ of the body

diameter. This differentiation begins at two cephalic diameters from the anterior end and stops at the beginning of the last third of the tail. Comparatively long setae are scattered over the body surface.

Amphids slitlike, on 0,33 cephalic diameters from the anterior end.

Head obtusely rounded, with 6 lips and as many labial papillae, 4 (?) cephalic setiform papillae and 4 cephalic setae, the latter 0,5 × cephalic diameter long.

Buccal cavity 0,33 cephalic diameters deep, vestibulum with faint longitudinal cuticularisation. From the bottom, a hollow, comparatively small tooth rises at a level with the two smaller subventral teeth.



Neochromadora poecilosoma (DE MAN).

47. Anterior end of a female.

48. Tail of a female.

Oesophagus with a bulb-like swelling around the buccal cavity; oesophageal bulb 1/4 of the oesophageal length.

Nerving at 55 % of the oesophageal length.

Female genital tract paired symmetrical.

Tail elongate cylindrical, tapering into a terminal cone; 5,5-6 anal diameters long.

GEOGRAPHICAL DISTRIBUTION : Channel, North Sea, Baltic.

GENUS PROCHROMADORELLA MICOLETZKY 1924

Syn. : *Chromadora* BASTIAN ex parte.

22. *Prochromadorella germanica* (BUETSCHLI) 1874.

Fig. 49-51.

Syn. : *Chromadora dröbachiensis* ALLGÉN.

Chromadora germanica BUETSCHLI.

REFERENCES :

ALLGÉN 1931, p. 244, fig. 10a-b.

BUETSCHLI 1874, p. 48, pl. VI, fig. 25.

RIECK 1928.

1 ♂ from Oostende, on a break-water, harbour entrance, IX.1931 (DE SAEDELEER).

DIMENSIONS : ♂. L. : 0,88 mm.; α : 26,3; β : 7,9; γ : 8,8.

Habitus : Body distinctly narrowed anteriorly; width at the anterior end = $1/2$ of the width at the nervering and $1/3$ of the maximal diameter. Width at the anal opening and at the beginning of the intestine identical.

Cuticula transversally striated; rings resolvable into rows of elongated points; those on the lateral fields larger but not sharply demarcated from those on the ventral and dorsal sections. Median rows not separated by a larger distance than the other ones. Relatively long bristles are found along the submedian lines.

Amphids slit-like, on 0,3 cephalic diameters from the anterior end.

Pigment-spots on 2 cephalic diameters from the anterior end.

Head obtusely rounded; 6 lips with as many labial papillae; cephalic papillae absent ?; 4 cephalic setae, $0,5 \times$ cephalic diameter.

Buccal cavity funnel-shaped; vestibulum with 12 distinct longitudinal ribs, connected at their bases by arch-like cuticularisations, the whole building up a kind of « diadem ». There are 3 teeth : 1 massive, voluminous, curved, dorsal tooth and 2 smaller subventral ones of a similar shape, all 3 implanted at the same level, just posterior to the amphids.

Oesophagus : Anterior end not distinctly swollen; posterior bulb $1/4$ of the oesophageal length with strong inner lining.

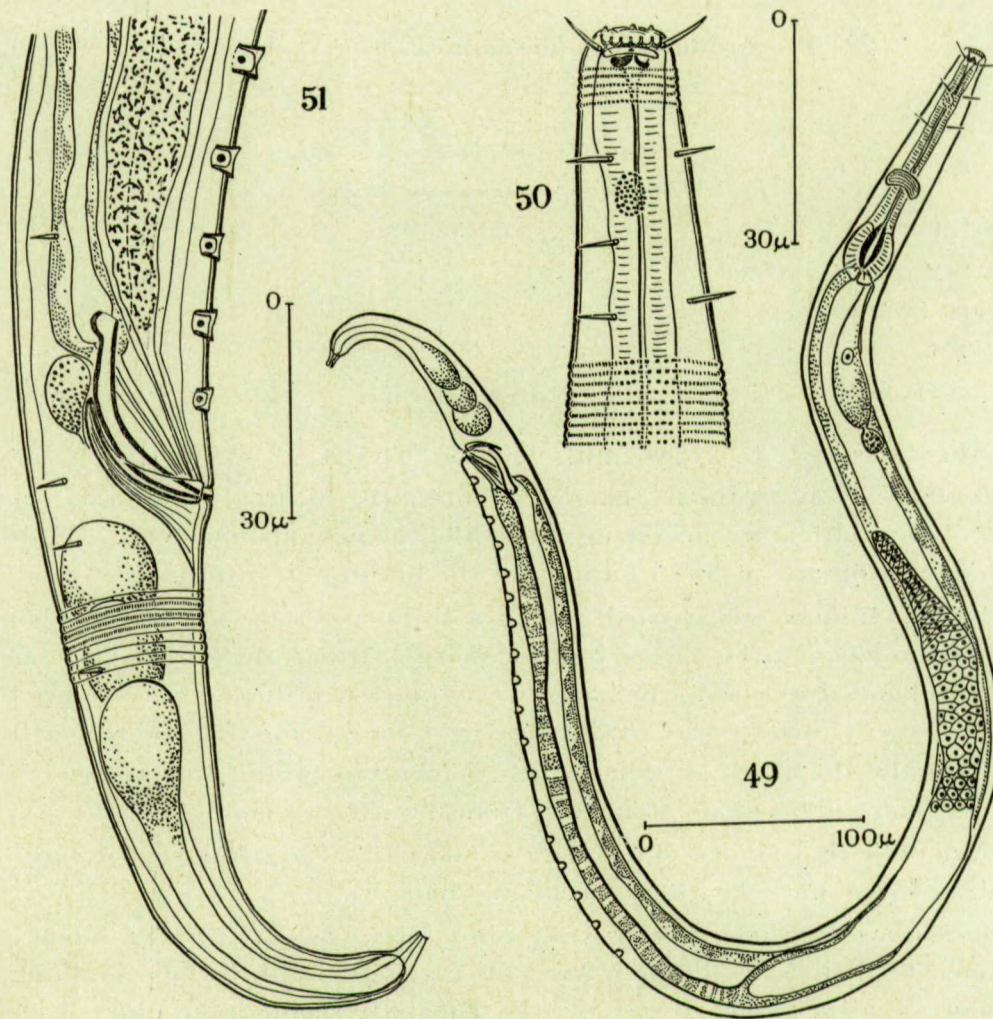
Base of the *ventral gland* at $1,6 \times$ oesophageal length from the anterior end, with a small adherent cell.

Excretory pore not observed.

Nervering on $0,58 \times$ the oesophageal length.

Testis very long, reaching almost the base of the ventral gland; anterior $1/2$ thickest, vas deferens distinctly demarcated.

Spicula curved, 1,265 × anal diameters long; proximal end swollen, distal end pointed. *Gubernaculum* simple, gutter-shaped, 0,88 × anal diameter, 18 preanal papillae.



Prochromadorella germanica (BUETSCHLI).

49. General view of a male.

50. Head end of a male.

51. Spicular apparatus and tail of a male.

Tail elongate conical, 3,9 × anal diameters, with distinct spinneret glands and a conical tubular outlet.

GEOGRAPHICAL DISTRIBUTION : North Sea and Baltic.

Remark. — For the description of the female, confer Allgén.

GENUS CHROMADORA BASTIAN 1865.

The only species of this genus found along the Belgian Coast is.

23. *Chromadora nudicapitata* BASTIAN 1865.

Fig. 52-54.

Syn. : *Chromadora natans* BASTIAN.

REFERENCES :

- ALLGÉN 1928a, p. 257, *C. natans*.
 ALLGÉN 1929a, p. 38, *id.*
 ALLGÉN 1931, p. 242, *id.*
 ALLGÉN 1932c, p. 415, *id.*
 BASTIAN 1865, p. 168, pl. XIII, fig. 230-232, *C. nudicapitata*.
 BASTIAN 1865, p. 168, pl. XIII, fig. 236-238, *C. natans*.
 DADAY VON 1901, p. 451, pl. 23, fig. 6-10, *C. natans*.
 DE MAN 1888, p. 47, pl. III-IV, fig. 20, *C. nudicapitata*.
 DE MAN 1922b, p. 244, fig. 35, *C. nudicapitata*.
 DE ROUVILLE 1904, p. 789, *C. natans*.
 SOUTHERN 1914, p. 29, *C. nudicapitata*.
 114 ♂♂, 130 ♀♀ and 26 juv. (62,6 % of the nemic fauna at the locality in question), on a break-water; harbour entrance Oostende, IX.1931 (DE SAEDELEER).
 9 ♂♂, 5 ♀♀ and 3 juv. on a break-water, Oostende, 18.XI.1931; NaCl : 29,3 ‰.
 3 ♂♂ and 1 ♀ from Knokke-Zoute, on stones along the littoral, 28.XII.1931.
 8 ♂♂, 26 ♀♀ and 1 juv. from 't Zwyn, on *Enteromorpha* between poles, 28.XII.1931; NaCl : 27,2 ‰.
 6 ♂♂, 16 ♀♀ and 33 juv. from 't Zwyn, in sand and organic detritus, 28.XII.1931; NaCl : 21 ‰.

DIMENSIONS : ♂. L. : 0,66 mm.; α : 23; β : 6 ; γ : 9,2 .
 ♂. L. : 0,68 mm.; α : 21; β : 6,17; γ : 9,46.
 ♀. L. : 0,75 mm.; α : 26; β : 7,2 ; γ : 8,2 ; V. : 48 %.

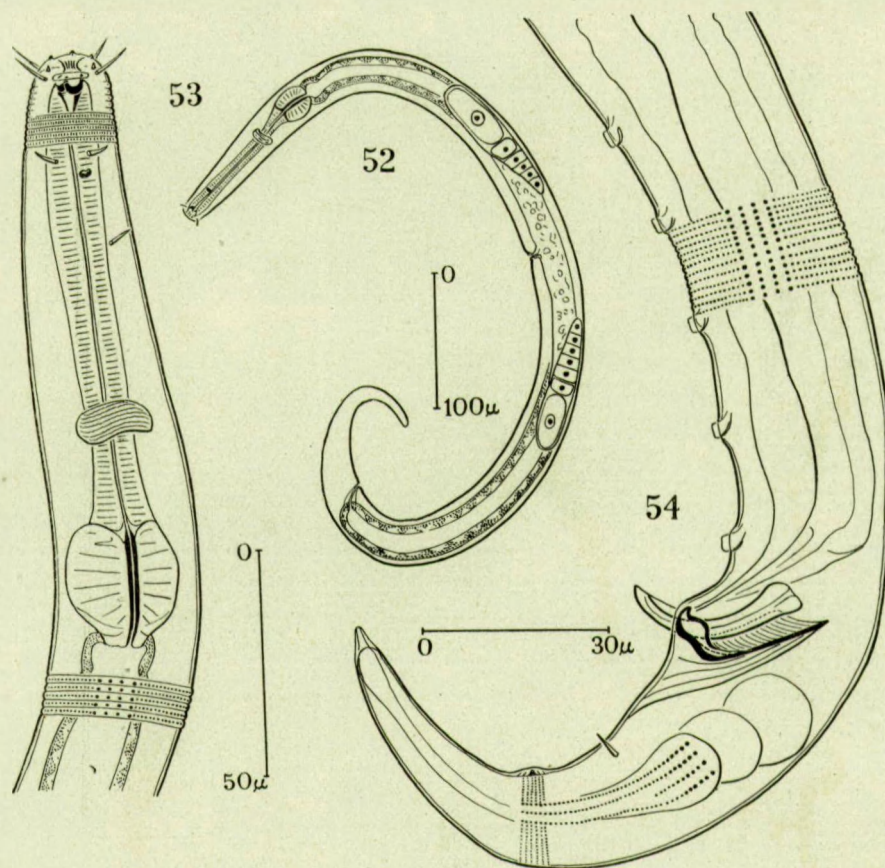
Habitus : Confer fig. 52. Body gradually tapering towards the anterior end, where it measures 0,4 — 0,5 × maximal width.

Cuticle transversely striated. Rings with a median row of dots. On high magnification those dots are elongate sexagonal. Lateral fields 0,20 — 0,22 × body diameter, with 4 longitudinal rows of larger points, separated by equidistant intervals. The lateral fields begin at some distance from the anterior end and finish posteriorly to the middle of the tail. Hairs are scattered over the body surface.

Amphids: A transverse slit at 0,32 × cephalic diameter from the anterior end. *Ocellar spots*, not always distinct after fixation, at 1,63 × cephalic diameter from the head-end.

Head obtusely rounded, with 6 lips and as many labial papillae, 6 cephalic papillae and 4 cephalic bristles $0,66 \times$ cephalic diameter.

Buccal cavity : Vestibulum with faint longitudinal ribs. Cavity funnel-shaped, with 1 great, massive, curved, dorsal tooth and 2 similar, smaller subventral teeth.



Chromadora nudicapitata BASTIAN.

52. General view of a female.
53. Anterior end of a female.
54. Posterior end of a male.

Œsophagus cylindrical with a strong œsophageal bulb, $0,22 - 0,24 \times$ œsophageal length. *Nerving* at 60 % from its length.

Female genital tract paired, symmetrical, ovaries reflexed.

Testis long, beginning at 31 % of the body length. *Spicula* slightly curved, swollen at the proximal end, distally more or less pointed, 1 anal diameter long. *Gubernaculum* a little smaller, with 2 lateral expansions at the distal end. 5-6 preanal papillae (most times 5!). The most anterior one is found at 73 % of the body length.

Tail elongate conical, 3 anal diameters in the male, 4,3 anal diameters in the female. In the male, one finds in the middle of the tail a low ventral, wart-like papilla. Between this papilla and the anal opening, 2 subventral hairs are found. Spinneret glands great with a conical outlet.

GEOGRAPHICAL DISTRIBUTION : Cosmopolite.

Remarks. — As to our opinion, *Chr. nudicapitata* Bastian and *Chr. natans* Bastian are synonyms. The absence of the cephalic hairs in *Chr. nudicapitata* is probably due to accidental denudation, and the differences in absolute length fall into the variability of a species.

GENUS CHROMADORITA FILIPJEV 1922.

24. *Chromadorita obtusidens* SCHUURMANS STEKHOVEN & ADAM 1931.

Fig. 55-57.

REFERENCES :

SCHUURMANS STEKHOVEN & ADAM 1931, p. 41, pl. IX, fig. 1-4.

2 ♀♀ and 2 juv. specimens on a break-water, Oostende, 18.XI.1931; NaCl : 30,77 ‰.

2 ♂♂ and 2 ♀♀ from Knokke-Zoute, on stones along the littoral, 28.XII.1931.

DIMENSIONS : ♂. L. : 1,065 mm.; α : 38,7; β : 7,5; γ : 8,87.

140	M.	935	1,065 mm.
16 24	21,5	26,5	

♀. L. : 0,955 mm.; α : 38,2; β : 6,5; γ : 7,9 ; V. : 48,6 %.

145	375	420	465	510	550	835	0,955 mm.
16	23		25			18,25	

The male of this species was hitherto unknown.

Cuticula ringed. Rings with a median row of points; the lateral fields not differentiated. The striation begins at 0,8 cephalic diameters from the anterior end. Between the amphids and the rings numerous rows of minute points are found. Comparatively long setae are scattered over the body surface.

Amphids slitlike, at 0,27 × cephalic diameter from the anterior end. *Pigment spots* on a distance of 1,35 cephalic diameter.

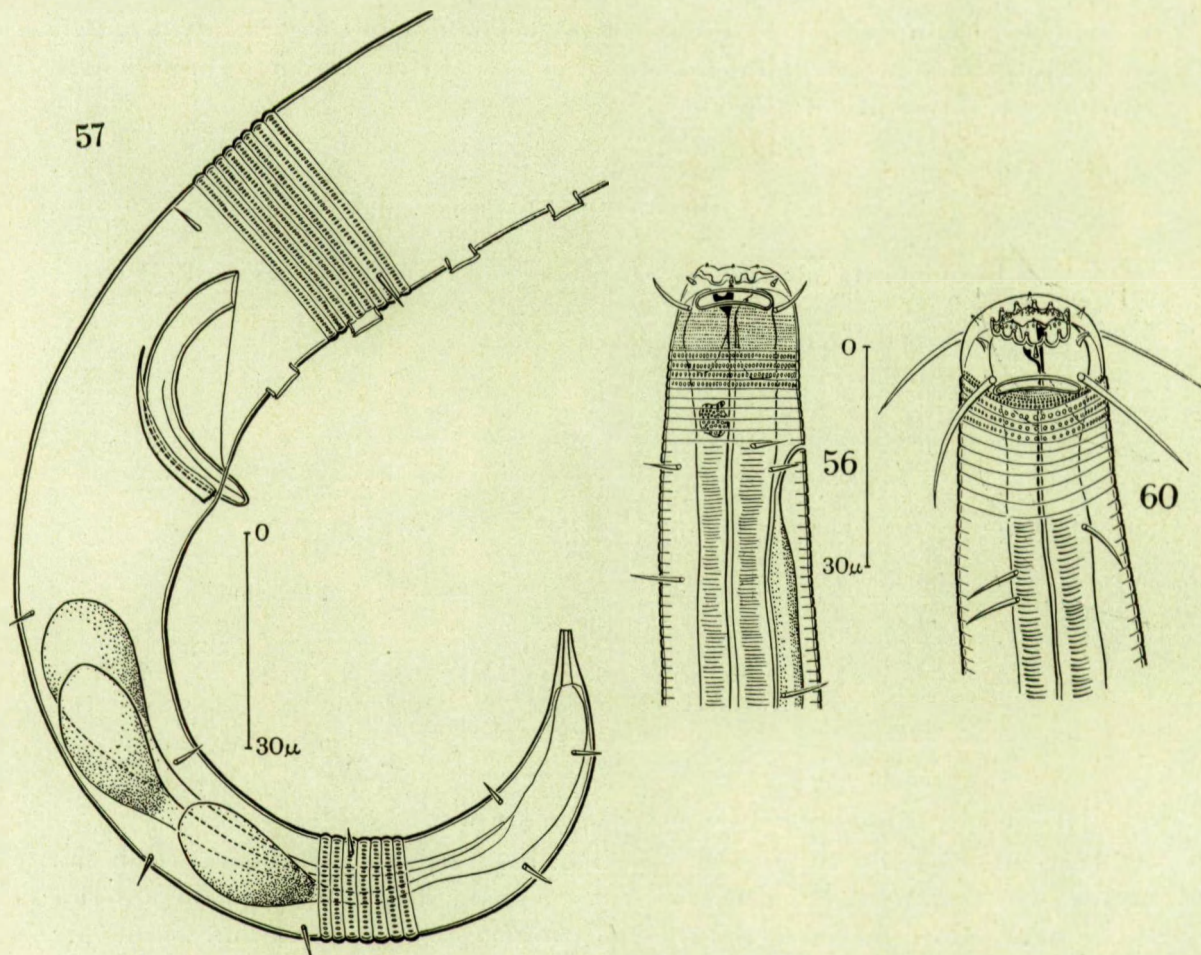
Head obtusely rounded, with 6 lips and as many labial papillae, 6 conical, setiform cephalic papillae and 4 cephalic setae, 0,4 × cephalic diameter.

Buccal cavity funnel-shaped. Vestibulum with an inconspicuous diadem. A very strong and prominent dorsal tooth curves upwards and reaches the level of the cephalic papillae. Subventral teeth very minute.

Oesophagus differentiated around the buccal cavity, slightly swollen; than cylindrical. Posterior bulb not strongly swollen, 0,2 × oesophageal length.

Ventral gland, with small adherent cell-body, very long, situated behind the beginning of the intestine; the distance from the anterior end to the end of the ventral glands equals twice the length of the œsophagus.

Excretory pore in both sexes at 1,6 cephalic diameters from the anterior end. *Nerving* at 70 % from the œsophageal length.



Chromadorita obtusidens SCHUURMANS STEKHOVEN & ADAM.

56. Head end of a male.

57. Spicular apparatus and tail of a male.

Chromadorita longisetosa DE CONINCK & SCHUURMANS STEKHOVEN.

60. Head end of a female.

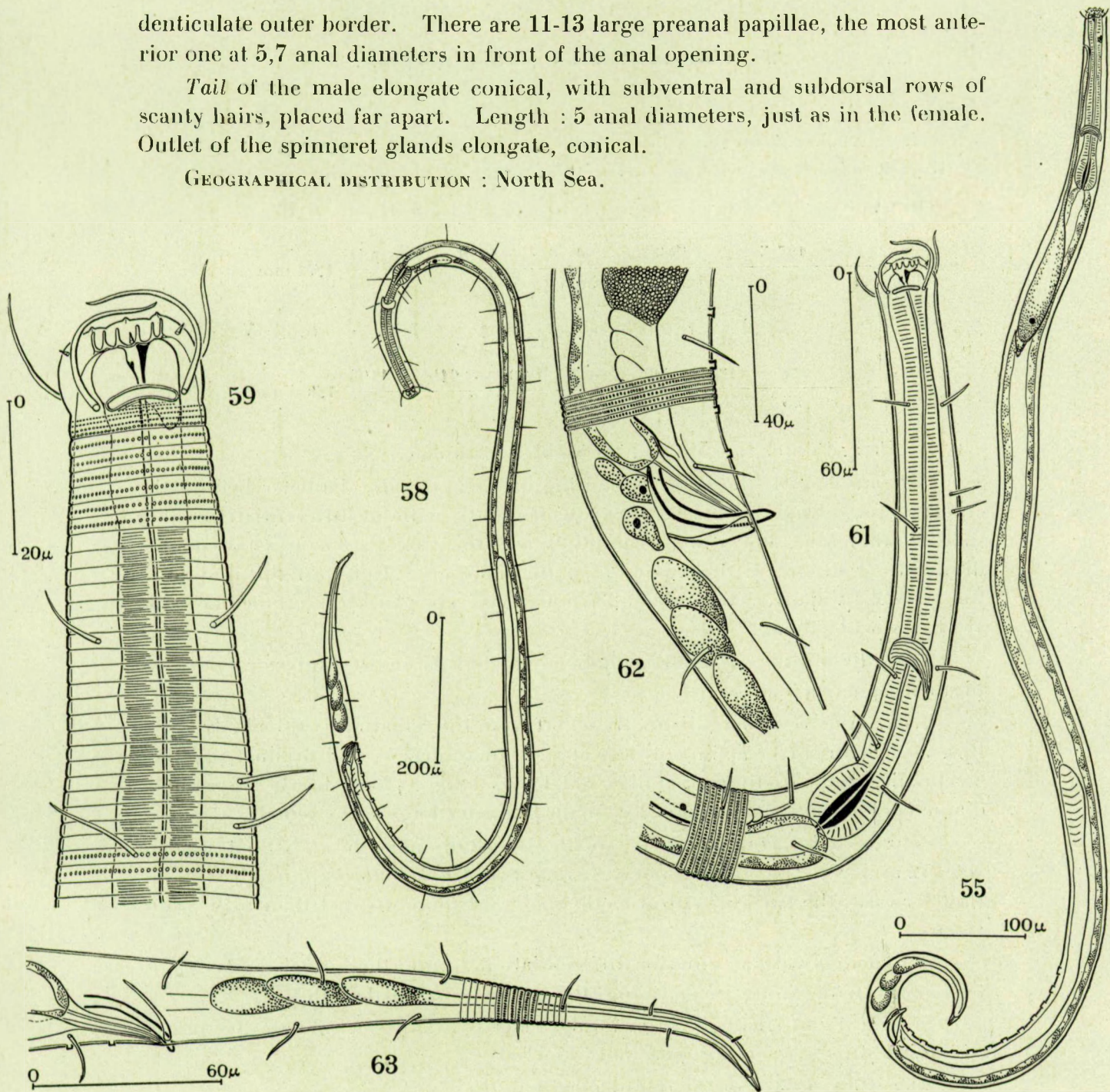
Female genital tract paired, symmetrical; ovaries reflexed; vulvar glands present.

Testes comparatively short. *Spicula* 1,2 anal diameter long, arcuate, only inconspicuously tapering at the distal end were they are obtusely rounded. *Gubernaculum* guttershaped, 0,86 × anal diameter; distal end cut off, with

denticulate outer border. There are 11-13 large preanal papillae, the most anterior one at 5,7 anal diameters in front of the anal opening.

Tail of the male elongate conical, with subventral and subdorsal rows of scanty hairs, placed far apart. Length : 5 anal diameters, just as in the female. Outlet of the spinneret glands elongate, conical.

GEOGRAPHICAL DISTRIBUTION : North Sea.



Chromadorita obtusidens SCHUURMANS STEKHOVEN & ADAM.

55. General view of a male.

Chromadorita longisetosa DE CONINCK & SCHUURMANS STEKHOVEN.

58. General view of a male.

62. Spicular apparatus of a male.

59. Head end of a male.

63. Tail of a male.

61. Anterior end of a male.

25. *Chromadorita longisetosa* nov. spec.

Fig. 58-63.

3 ♂♂ from Knokke-Zoute, on a break-water, 28.XII.1931; NaCl : 31,6 ‰.

1 ♀ from Knokke-Zoute, on stones along the littoral, 28.XII.1931.

DIMENSIONS : ♂. L. : 1,720 mm.; α : 47,1; β : 9,34; γ : 6,46.

	127,5	186	M	1278
17		29,6	36,5	

♀. L. : 1,360 mm.; α : 27,2; β : 7,44; γ : 6,63; V. : 49 %.

100	190	430	595	675	738	915	1193	1,360 mm.
	35			50			26	

Habitus : Confer fig. 58, and the Cobb's formulae.

Cuticula ringed, the rings beginning at 0,82 cephalic diameter behind the anterior end. Rings with a median row of points, without differentiation along the lateral fields. Between the amphids and the rings a few rows of points, diminishing in size in the direction of the amphids. Rings in the middle of the body 2,1 μ apart. Numerous, 23 μ long setae are placed in submedian rows along the whole body.

Amphids slitlike, at 0,46 cephalic diameters from the anterior end. No pigment spots were observed.

Head slightly swollen, distinctly set off from the remainder of the body. Six lips, each with three refringent dots at the inner surface, and 6 labial papillae; 6 cephalic, conical setiform papillae and 4 very long cephalic hairs, 1,5 cephalic diameters long in the male, and 1 cephalic diameter long in the female.

Buccal cavity comparatively small. Vestibulum with a distinct diadem with 12 arches. Dorsal tooth not so strong as in *Chromadorita obtusidens*, pointing forward; the two subventral teeth small, yet more distinct than in *C. obtusidens*.

Oesophagus with an anterior differentiation around the buccal cavity. Posterior bulb with strong inner lining, 0,13 \times oesophageal length.

Ventral gland small, laying at only a short distance behind the beginning of the intestine. *Excretory pore* not observed.

Nerving at 63 % of the oesophageal length.

Female genital tract paired, symmetrical; ovaries reflexed.

Testis comparatively long. *Spicula* arcuate, 1 anal diameter long, of equal width throughout, obtusely rounded at the apex, of a similar shape as in *C. obtusidens* but narrower. *Gubernaculum* gutter-shaped, 0,6 anal diameter

long, at the utmost slightly indented. There are 9 small preanal papillae; the most anterior one is situated at 6 anal diameters in front of the anal opening.

Tail long, elongate conical, 8,8 anal diameters long (in fig. 63 somewhat flattened). Outlet of the spinneret glands elongate conical.

GENUS DICHROMADORA KREIS 1929.

26. *Dichromadora hyalocheile* nov. spec.

Fig. 64-66.

1 ♂ from Oostende; sand on the littoral, 18.XI.1931; NaCl : 29,3 ‰.

DIMENSIONS : L. : 0,915 mm.; α : 30,5; β : 7,32; γ : 7,04.

Cobb's formula :

$$\frac{\begin{array}{ccc} 125 & 305 & M. \\ 20 & 26 & 30 \end{array}}{26} \frac{785}{26} 0,915 \text{ mm.}$$

Cuticula ringed, the rings beginning at 0,46 cephalic diameters from the anterior end, just posterior to the implantation of the cephalic setae and to the amphids. Rings with a median row of points; lateral chords demarcated by two longitudinal rows of larger dots, 1/10th of the body diameter apart. Comparatively long setae are placed in longitudinal submedian rows; hairs 11 μ long, almost the 1/2 of the body diameter. In the neighbourhood of the lateral fields, some rare circular pores occur, of the same shape as in *Cyatholaimus* and *Paracanthochus*.

Amphids slit-like, narrow, at 0,34 cephalic diameters from the anterior end.

Head very typical. At first sight it seems to have the shape of a truncate cone, since the lips are quite diaphanous and may be seen only at high magnifications. There are 6 lips, with sharply pointed papillae. Instead of cephalic papillae, there is a crown of 6 setae, each 3,5 μ long; the 4 cephalic setae are 14 μ long, or 0,75 \times cephalic diameter.

Buccal cavity : Vestibulum with a distinct diadem of 12 arches. Dorsal tooth hollow, short, reaching the level of the anterior crown of cephalic setae. At the bottom of the buccal cavity, on a level with the amphids, one finds 2 small subventral denticles.

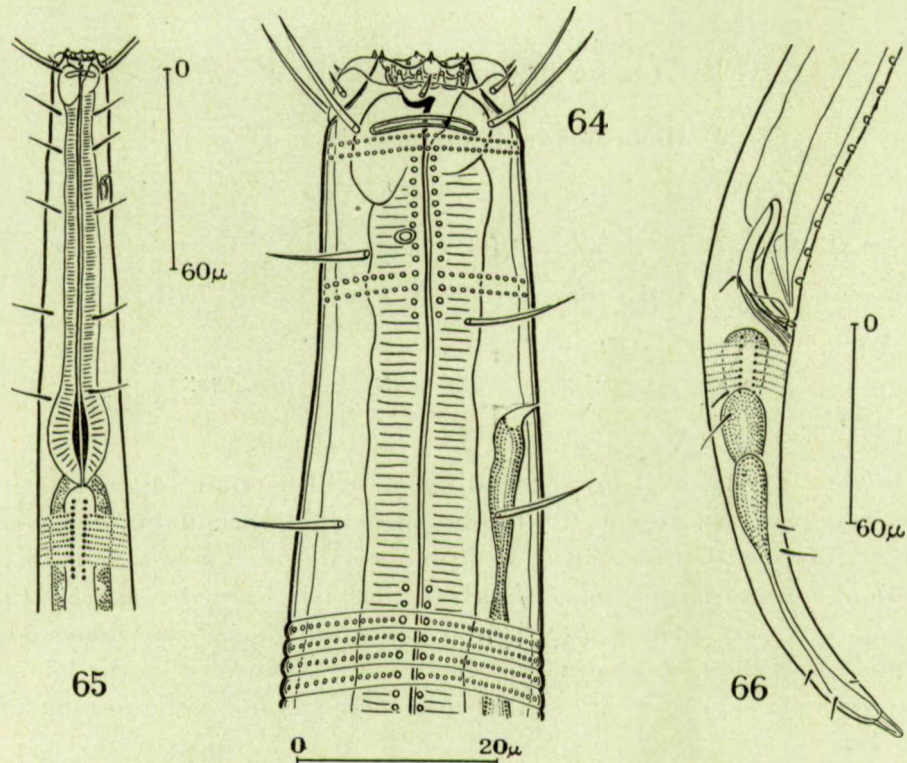
Oesophagus with a very distinct swollen differentiation around the buccal cavity, strongest at the dorsal side. Posterior bulb with strong inner lining, 0,22 \times oesophageal length.

Excretory pore at 35 μ = 1,84 \times cephalic diameter from the anterior end.

Testis beginning at 33 % of the body length. *Spicula* long and slender, slightly reversed S-shaped, 1,44 anal diameter long, 13 times as long as they are wide. *Gubernaculum* 0,77 anal diameter long, with denticulations at the

distal end. There are 9 small preanal papillae, the most anterior one being situated at 3,2 anal diameters in front of the anal opening.

Tail elongate conical, 5,6 anal diameters long; outlet of the spinneret glands long, conical.



Dichromadora hyalocheile DE CONINCK & SCHUURMANS STEKHOVEN.

64. Head end of a male.

65. Anterior end of a male.

66. Spicular apparatus and tail of a male.

GENUS HYPODONTOLAIMUS DE MAN 1888.

Syn. : *Spiliphora* BASTIAN ex parte.

27. *Hypodontolaimus bütschlii* FILIPJEV 1918.

Fig. 67-69.

Syn. : *Spilophora inaequalis* BUETSCHLI nec BASTIAN.

Hypodontolaimus striatus DITLEVSEN

REFERENCES :

- ALLGÉN 1927a, p. 55, *H. striatus*.
 ALLGÉN 1929c, p. 24, *id.*
 ALLGÉN 1929a, p. 33, *id.*
 ALLGÉN 1931, p. 240, *H. buetschlii*.

DITLEVSEN 1919, p. 194, pl. 10, fig. 2; pl. 11, fig. 4, *H. striatus*.

FILIPJEV 1918, p. 211, *H. buetschlii*.

FILIPJEV 1930, pp. 34-35.

DE MAN 1929b, p. 250, fig. 41a-b, *H. striatus*.

5 ♂♂, 5 ♀♀ and 2 juv. from 't Zwyn; sand and organic detritus, 28.XII.1931;
NaCl : 21 ‰.

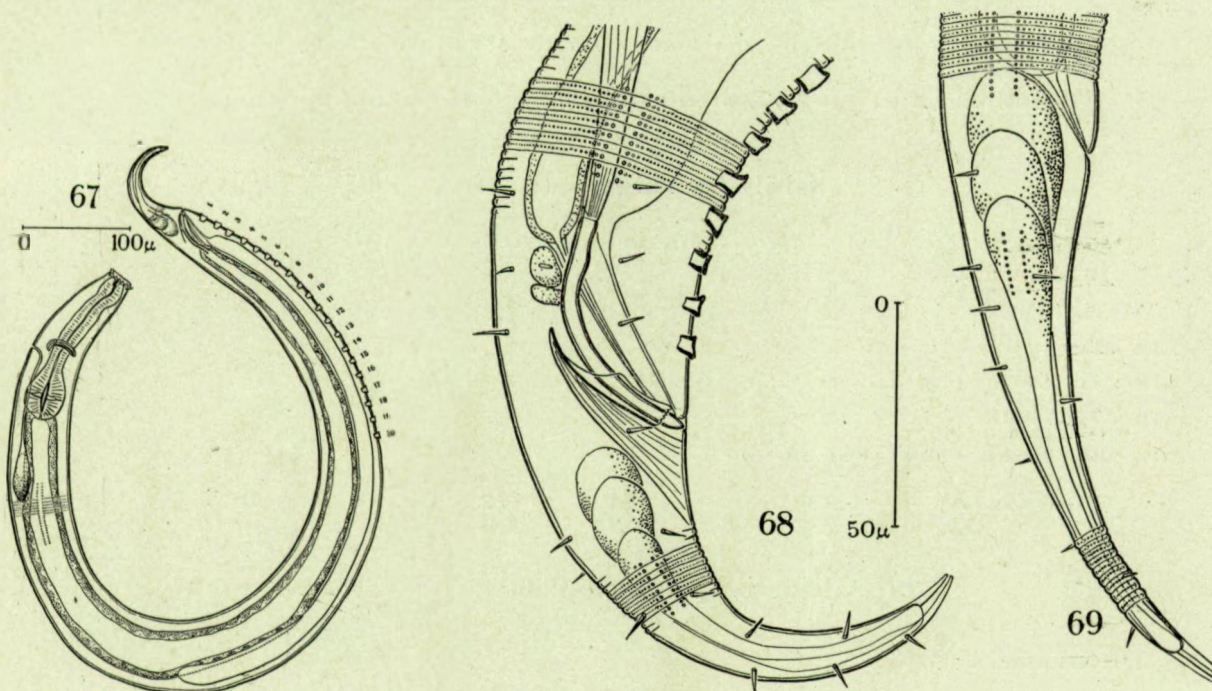
DIMENSIONS : ♂. L. : 1,185 mm.; α : 16,2; β : 7,46; γ : 10,2.

Cobb's formula :

85	137,5	240	M.	805	1060	1,185 mm.
25	55	82,5	35	5		

Here we will give some additional notes only to the dates from our predecessors. For *habitus* confer fig. 67.

Cuticula with numerous rather fine setae. Rings with a median row of rather fine points, those along the lateral fields distinctly larger than the other ones. The *lateral fields* 0,11 × body diameter, wider than the rings are high.



Hypodontolaimus buetschlii FILIPJEV.

67. General view of a male.

68. Spicular apparatus and tail of a male.

69. Tail of a female.

Amphids slit-like. *Cephalic setae* 1/4 of the corresponding cephalic diameter. *Oesophagus* with an anterior swelling. Posterior bulb 0,27 × oesophageal length. *Excretory pore* situated just behind the nerving which lies at 45 %

of the œsophageal length. Ventral gland at $1/2 \times$ œsophageal length behind the base of the œsophagus. *Testis* beginning at 45 % of the body length, *Spicula* very slender, curved, 1,43 anal diameter long and 16,5 times as long as they are wide, bluntly pointed at the apex. *Gubernaculum* gutter-shaped, 0,93 anal diameter long, with small denticles at the distal end. 20-23 preanal papillae (1×20 , 1×21 , 2×22 , 1×23). The most anterior preanal papilla is situated at 68 % of the body length.

Tail of the male elongate conical, 3,15 anal diameters long, 0,184 anal diameter wide at the base of the long, conical outlet of the spinneret glands. In the female tail the length equals 4,4 anal diameters, and the width at the end 0,16 anal diameter.

GEOGRAPHICAL DISTRIBUTION : North Sea and Baltic.

VII. — FAMILY COMESOMIDAE.

GENUS SABATIERIA DE ROUVILLE 1904.

Syn. : *Parasabatieria* DE MAN 1907.

We follow Filipjev in synonymising *Parasabatieria* and *Sabatieria*.

28. *Sabatieria vulgaris* (DE MAN) 1907.

Syn. : *Parasabatieria vulgaris* DE MAN 1907.

REFERENCES :

ALLGÉN 1929a, p. 48.

DE MAN 1907a.

DE MAN 1907b, p. 66, pl. I, fig. 12; pl. III, fig. 12a-b, d-i; pl. IV, fig. 12c.

DE MAN 1922b, p. 237, fig. 25.

1 ♀ on a break-water; Oostende, 30.XII.1931.

DIMENSIONS : L. : 2,38 mm.; α : 44,7; β : 12,5; γ : 16; V. : 48,3 %.

29. *Sabatieria quadripapillata* FILIPJEV 1922.

Fig. 70-72.

REFERENCES :

FILIPJEV 1922b, p. 207, pl. V, fig. 10a-d.

1 ♀ on a break-water; Knokke-Zoute, 28.XII.1931; NaCl : 31,6 ‰.

DIMENSIONS : ♀. L. : 1,48 mm.; α : 24,66; β : 8,7; γ : 11,2; V. : 57 %.

Cobb's formula :

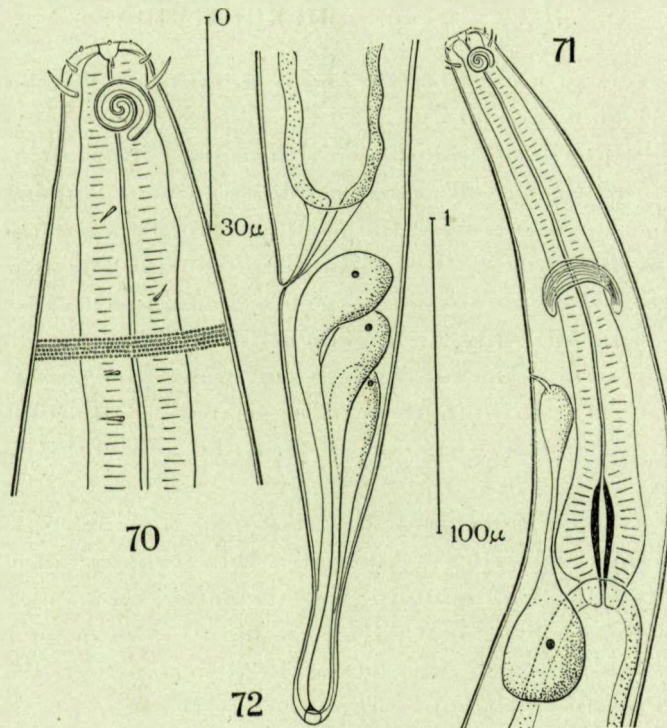
$$\frac{101 \quad 170 \quad 350 \quad 800 \quad ? \quad 1448}{13 \quad 42 \quad 60 \quad 60 \quad 12} \quad 1,480 \text{ mm.}$$

Filipjev's : ♀. L. : 1,50 mm.; α : 34 ; β : 9 ; γ : 11,2; V. : 51 %.

The species in question was discovered by Filipjev in the sea of Azov. Notwithstanding some small differences with the type specimen, e. g. the somewhat broader tail-end in the female, we are convinced that our specimen belongs to Filipjev's species. Filipjev has apparently overseen the cell body of the ventral gland which he described as tubular, whereas the broadest part of his ventral gland coincides with the ampulla of our specimen.

Habitus fusiform; confer the cobbian formula.

Cuticula more or less regularly dotted with points, without differentiation along the lateral fields; some scanty hairs are scattered over the body surface.



Sabatieria quadripapillata FILIPJEV.

- 70. Head end of a female.
- 71. Anterior end of a female.
- 72. Tail of a female.

Amphids with $2 \frac{1}{2}$ windings, paralleled by a faint line; $0,55 \times$ corresponding body diameter.

Head obtusely rounded, with 6 labial papillae, 6 cephalic papillae and 4 cephalic setae, $0,4 \times$ cephalic diameter.

Buccal cavity shallow, reaching slightly less than halfway the amphids, or $\frac{2}{3}$ the distance to the first crown of cephalic papillae. A minute dorsal tooth is present.

Oesophagus with a bulb-like posterior swelling, more or less $0,2 \times$ the oesophageal length. *Nerving* in the middle.

Ventral gland almost spherical, situated immediately behind the posterior end of the oesophagus, connected by a fine tube with the ampulla. *Excretory pore* on $0,6 \times$ oesophageal length.

Tail containing the spinneret gland cells $3,6$ anal diameters long. Width at the end $0,33 \times$ anal diameter. Basal $3/4$ conical, last $1/4$ claviform.

GEOGRAPHICAL DISTRIBUTION : North Sea and Black Sea.

VIII. — FAMILY MICROLAIMIDAE.

A new family is proposed for the representants of the genus *Microlaimus* De Man and some related genera.

Filipjev (1930) places *Microlaimus* in the same subfamily as *Theristus* and *Monhystera*. According to our opinion, this cannot be justified, since there is a great difference in symmetry at the head end, in the structure of the amphids and of the genital armature between *Microlaimus* and *Theristus* c. s.

On the contrary *Microlaimus* shows a close relation with the *Chromadoridae*. In both forms we find the same arrangement of the labial papillae, the cephalic papillae and the cephalic setae, in three distinct successive crowns, in respective numbers of $6,6$ and 4 . In both there is a striated vestibulum oris, a more or less distinct bulbus oesophagi, whereas the spicula, as well as the gubernaculum are of the same type.

Therefore, *Chromadoridae* and *Microlaimidae* belong together and ought to be reckoned to the same order. Since the skin ornamentation of *Chromadora* and its consorts fails in *Microlaimus*, and the latter has a different amphidial structure, we are justified in creating a new family for the genus *Microlaimus*.

The genus *Prodesmodora* Micoletzky 1923 certainly belongs also to this family and possibly also the genus *Ethmolaimus* De Man 1885.

Diagnose. — Nemas of median-small size, with a transversly striated cuticula, a more or less distinctly set off, swollen cephalic end, 6 labial papillae, 6 cephalic papillae and 4 cephalic setae.

Amphids almost circular, a more or less distinct spiral, situated behind the head. Buccal cavity elongate with faintly striated vestibulum and small denticles. Oesophagus with a posterior bulb. Ventral gland present. Female genital tract paired, symmetrical. Ovaries outstretched or reflexed. Spicula comparatively short, arcuate, gubernaculum spoon-shaped.

GENUS MICROLAIMUS DE MAN 1880.

The genus *Microlaimus* embraces at present 12 species of which 3 are doubtful.

True species of *Microlaimus* De Man :

1. *Microlaimus acuticaudatus* SCHUURMANS STEKHOVEN & DE CONINCK 1933a, p. 5, pl. III, fig. 1-3.
2. *Microlaimus borealis* STEINER 1916, p. 590, pl. XXVII, fig. 20a-c.
3. *Microlaimus cyatholaimoides* DE MAN 1922c, p. 118, fig. 1-1f.
4. *Microlaimus globiceps* DE MAN 1880, 1884, p. 52, pl. VI, fig. 24-24e.
5. *Microlaimus honestus* DE MAN 1922b, p. 241, fig. 30a-c.
6. *Microlaimus marinus* SCHULZ, 1932, p. 367, fig. 18a-e.
7. *Microlaimus robustidens* SCHUURMANS STEKHOVEN & DE CONINCK 1933a, p. 6, pl. III, fig. 4-7.
8. *Microlaimus tenuispiculum* DE MAN 1922b, p. 241, fig. 31a-b.
9. *Microlaimus zosterae* ALLGÉN 1930a, p. 62, fig. 5a-c.

Doubtful species :

10. *Microlaimus inermis* DITLEVSEN 1923, p. 179, fig. 1-4, possibly belongs to the genus *Paramonhystera* STEINER 1916. Certainly it is not a *Microlaimus*.
11. *Microlaimus problematicus* ALLGÉN 1932b, p. 181, fig. 41a-b, is indeed a problematical species. The shape of the head, the structure of the buccal cavity a. s. o. are so insufficiently characterised that no decision about the systematical position of this form is possible.
12. *Microlaimus tenuilaimus* ALLGÉN 1932b, p. 178, fig. 40a-e, is not a *Microlaimus* since the ovaries are reflexed. In other features it resembles to *Microlaimus* but the form needs more careful illustrations.

Apart from the species 1 and 7 which were described in a former paper : Schuurmans Stekhoven & De Coninck 1933a, the present material contains specimens of *Microlaimus honestus* De Man and *Microlaimus marinus* Schulz, whereas De Coninck (1930, p. 125) mentions the presence of *Microlaimus globiceps* De Man in 't Zwyn.

Microlaimus menzeli HOFMÄNNER 1914 : 84, HOFMÄNNER & MENZEL 1915 : 135, pl. V, fig. 15-16 = *Prodesmodora circulata* (MICOLETZKY) 1913, p. 119.

KEY TO THE GOOD SPECIES OF THE GENUS MICROLAIMUS DE MAN

- I. Buccal cavity with strongly cuticularised walls, wide; anterior portion of the oesophagus strongly muscularised, bulbiform :
 - Microlaimus robustidens* SCHUURMANS STEKHOVEN & DE CONINCK.
- II. Walls of the buccal cavity not so strongly cuticularised :
 - A. Oesophageal bulb $1/3 \times$ oesophageal length. Tail conical, pointed at the tip :
 - Microlaimus acuticaudatus* SCHUURMANS STEKHOVEN & DE CONINCK.
 - AA. Bulbus oesophagi $1/4-1/6 \times$ oesophageal length :
 - a. Tail elongate conical, swollen at the end. Spicula very long and slender, $3/5 \times$ the length of the tail :
 - Microlaimus tenuispiculum* DE MAN.

- aa. Tail never swollen at the end, rounded or more or less pointed. Spicula less than $1/2 \times$ the length of the tail :
- B. Submedian cephalic setae $2/3 \times$ cephalic diameter long. Amphids large, $1/2 \times$ corresponding body diameter, opposite to the bottom of the buccal cavity :
- Microlaimus borealis* STEINER.
- BB. Submedian cephalic setae less than $1/2 \times$ cephalic diameter :
- b. Head distinctly swollen, broader than the neck :
- c. Amphids $2 \times$ cephalic diameter from the anterior end :
- Microlaimus zosterae* ALLGÉN.
- cc. Amphids $1-1,7 \times$ cephalic diameter from the anterior end :
- Microlaimus globiceps* DE MAN.
- bb. Head not distinctly swollen :
- D. Amphids opposite to the bottom of the buccal cavity :
- Microlaimus cyatholaimoides* DE MAN.
- DD. Amphids behind the buccal cavity :
- d. Submedian cephalic setae almost $0,5 \times$ cephalic diameter. Spicula without longitudinal strengthening :
- Microlaimus marinus* SCHULZ.
- dd. Submedian cephalic setae $0,33 \times$ cephalic diameter. Spicula with median strengthening :
- Microlaimus honestus* DE MAN.

30. *Microlaimus honestus* DE MAN 1922.

Fig. 73-76.

REFERENCES :

- | | |
|---------------------------------|-----------------------------------|
| ALLGÉN 1928c, p. 295. | ALLGÉN 1931, p. 250. |
| ALLGÉN 1929a, p. 33. | DE MAN 1922a, p. 128. |
| ALLGÉN 1930a, p. 61, fig. 4a-b. | DE MAN 1922b, p. 241, fig. 30a-c. |

1 ♀ and 1 juv. from Heyst-Zeebrugge, 2.IX.1931.

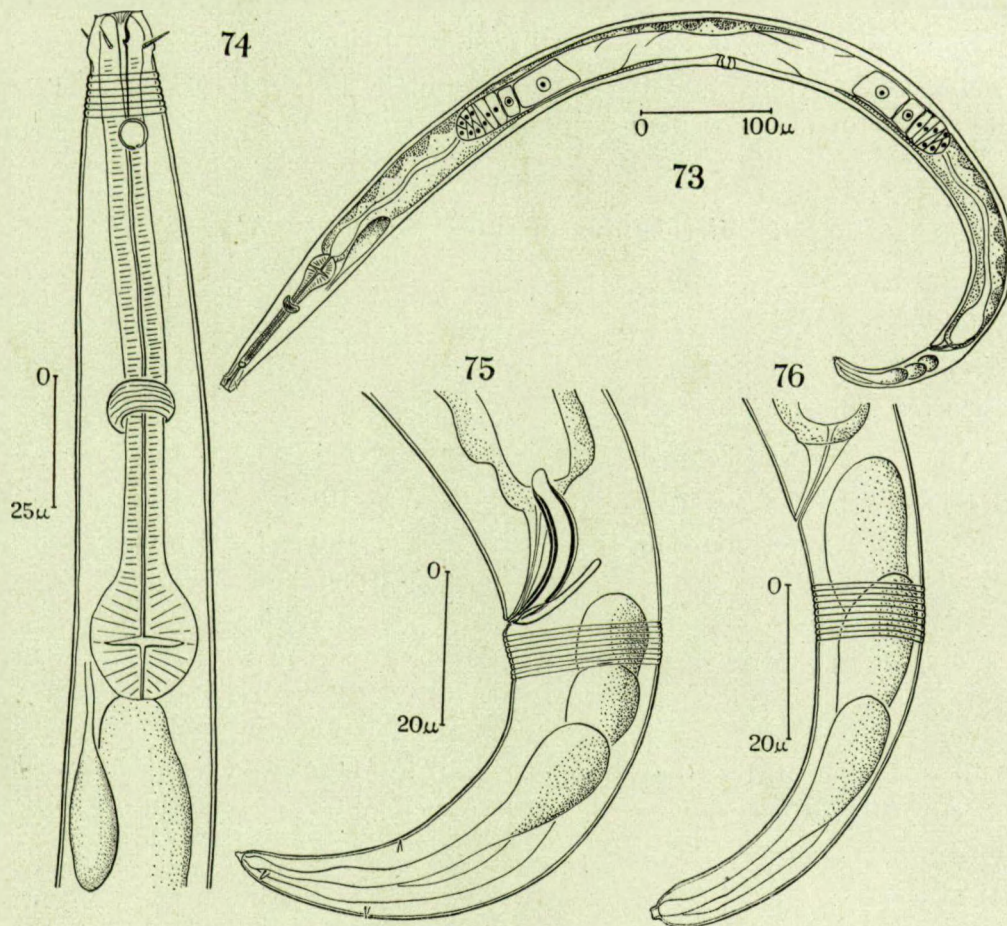
12 ♂♂, 3 ♀♀ and 7 juv. from Oostende, on a break-water, 18.XI.1931; NaCl : 30,77 ‰.

DIMENSIONS : ♂. L. : 0,600 mm.; α : 27,3; β : 8 ; γ : 12.
 ♂. L. : 0,707 mm.; α : 22,1; β : 8,03; γ : 10,5.
 ♀. L. : 0,710 mm.; α : 29,5; β : 8,05; γ : 10,3; V. : 49 %.
 ♀. L. : 1,170 mm.; α : 35,5; β : 9,8 ; γ : 11,8.

Habitus : Body elongate fusiform. *Cuticula* finely ringed, bare. *Amphids* 4μ in diameter = $0,29-0,33 \times$ corresponding body diameter, on $1,64$ cephalic diameters from the anterior end. They are almost circular, a one-looped spiral, situated behind the buccal cavity. Their foreborder on 15,6 % of the œsophageal length.

Head distinctly set off from the remainder of the body, a truncate cone with slightly convex sides. Lips indistinct with 6 labial papillae (not depicted in fig. 74, since the lips were intruded in the specimen in question), 6 minute cephalic papillae and 4 cephalic setae, $0,35 \times$ corresponding cephalic diameter long.

Buccal cavity elongate, narrow, with a distinct dorsal denticle; ventral denticle not seen. Vestibulum faintly striated.



Microlaimus honestus DE MAN.

- 73. General view of a female.
- 74. Anterior end of a female.
- 75. Spicular apparatus and tail of a male.
- 76. Tail of a female.

Oesophagus cylindrical; posterior bulb strong, occupying $0,18-0,20 \times$ oesophageal length. *Nervering* on 57 % of the oesophageal length.

Ventral gland situated immediately behind the posterior end of the oesophagus. *Pore* not seen.

Female genital tract paired. Ovaries equal in length, outstretched, broadly rounded at their ends.

Spicula slightly curved with longitudinal cuticularised strengthenings, $21,3\mu =$ more or less $1 \times$ anal diameter long.

Gubernaculum spoon-shaped, $12,2\mu = 0,6 \times$ length of spicula.

Tail cylindroconical, with a broadly rounded tip in the female, slightly more attenuated in the male than in the female, with a short tubular outlet for the spinneret glands.

GEOGRAPHICAL DISTRIBUTION : North Sea and Baltic.

Remarks. — Allgén and De Man mention the presence of 2 small preanal papillae in the male sex; we apparently did oversee them.

31. *Microlaimus marinus* (SCHULZ) 1932.

Syn. : *Paracothonolaimus marinus* SCHULZ.

Fig. 77-81.

REFERENCES :

SCHULZ 1932, p. 367, fig. 18a-e.

2 ♂♂, 17 ♀♀ in 't Zwyn, sand and organic detritus, 28.XII.1931; NaCl : 21 ‰.

DIMENSIONS : ♂♂ (n. 2) :

L. : 1,321-1,400 mm.;

α : 48,9-50,3;

β : 8,6-8,8;

γ : 16,2-18,1.

♀♀ (n. 10) :

L. : 0,938-1,205 mm.;

α : 30-35-6;

β : 8,5-9,9;

γ : 8,8-14,1;

V. : 47,7-53,9 %.

Our specimens differ from those of Schulz by their α 's only, an index which Schulz in different occasions as to our experience did not determine with sufficient accuracy.

DIMENSIONS :

♂ 1 L. : 1,321 mm.; α : 48,9; β : 8,8; γ : 18,1.

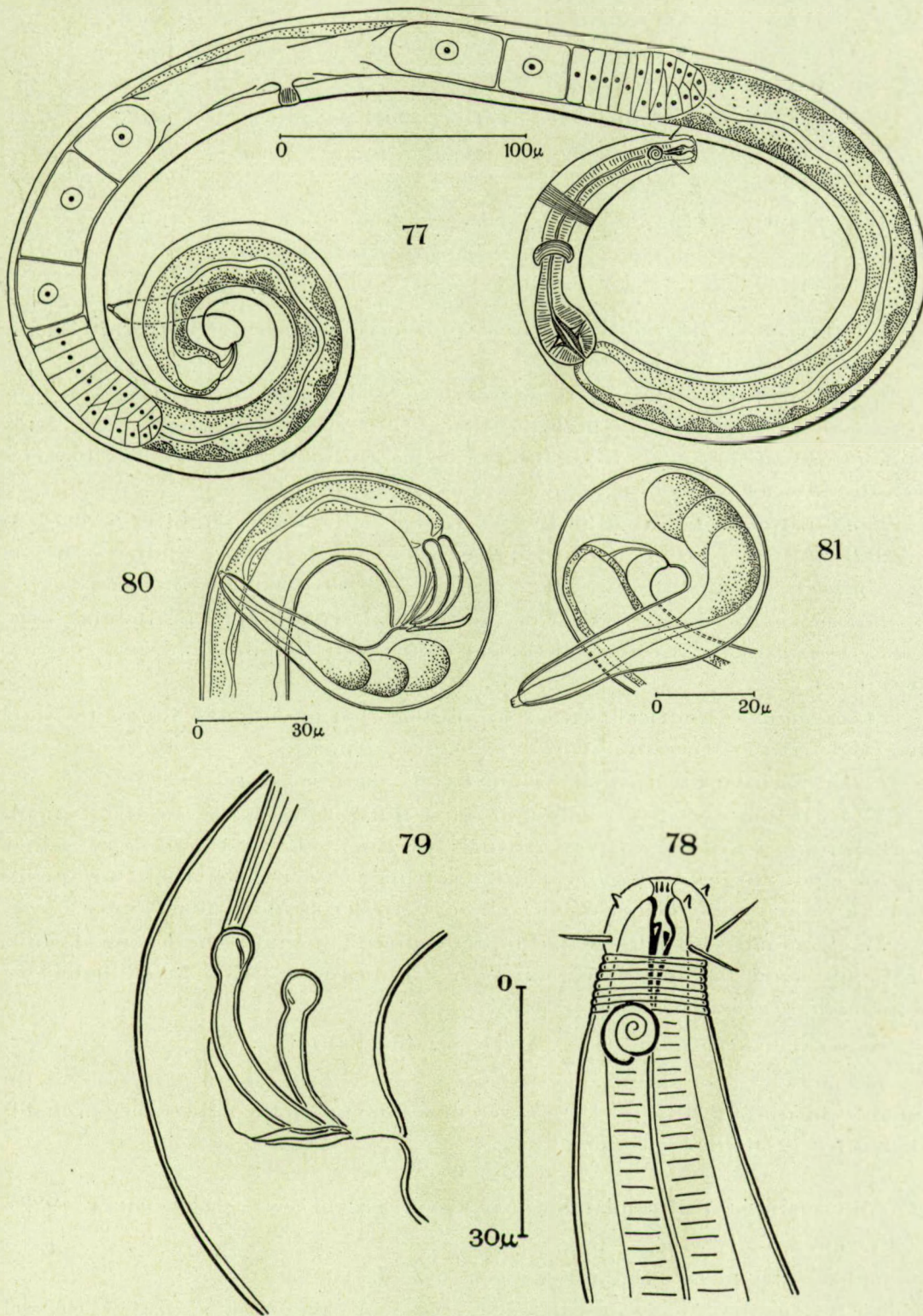
0	?	150	?	M	1250	1,321 mm.
10,8		27		27	21,6	

♂ 2 L. : 1,400 mm.; α : 50,3; β : 8,6; γ : 16,2.

0	130	160	500	M	1312	1,400 mm.
13,9		27,9		27,9	27,9	

♀ 1 L. : 0,938 mm.; α : 30,5; β : 9,08; γ : 10,06; V. : 47,7 %.

0	?	103	284	446	?	845	0,938 mm.
9,5		22,4		30,4		21	



Microlaimus marinus SCHULZ.

77. General view of a female.

78. Head end of a male.

79. Spicular apparatus of a male.

80. Posterior end of a male.

81. Posterior end of a female.

♀ 2 L. : 0,950 mm.; α : 31,1; β : 9,04; γ : 10,3; V. : 53,9 %.

0	?	401	?	512	?	858	
10,4		25,6		30,4		21	0,950 mm.

♀ 3 L. : 1,150 mm.; α : 34,5; β : 9,04; γ : 13,3; V. : 50,3 %.

0	97,5	122	?	616,6	885	1063	
13,9		27,8		33	30,5	?	1,150 mm.

♀ 4 L. : 1,152 mm.; α : 34,58; β : 9,9; γ : 8,8; V. : 49,6 %.

0	92	116	375	572	780	1012	
12,5		27,8	33	30	30	25	1,152 mm.

Habitus : Body distinctly narrowed anteriorly; head end 0,4 × width at the posterior border of the oesophagus.

Cuticle distinctly ringed, devoid of setae. *Amphids* distinctly spiral (one distinct and 2 faint loops); diameter $4,8\mu = 0,42-0,45 \times$ corresponding body diameter, situated caudad from the buccal cavity on $1,2 \times$ cephalic diameter from the anterior end, or on $1/9$ of the oesophageal length.

Head distinctly set off from the remainder of the body, slightly swollen; its length $0,75 \times$ its width. Labial papillae not seen. Cephalic papillae setiform, very distinct. Cephalic setae $5,6\mu$ long, about $0,5 \times$ cephalic diameter.

Buccal cavity elongate, narrow; vestibulum with faint longitudinal striations. Dorsal tooth distinct, subventral tooth (teeth?) somewhat smaller, on a lower level.

Oesophagus cylindrical, with a strong bulb, occupying $1/4-1/6$ of the oesophageal length. *Nerving* at 62 %. *Ventral gland* nor pore observed.

Female genital tract paired, symmetrical; ovaries outstretched.

Testis beginning at the end of the first third of the body length. Spicula short, strong, curved, with a proximal swelling, the distinctness of which depends upon the view under which the spicula are seen. Chord of the spicula $28,3\mu$ or more or less 1 anal diameter long. Gubernaculum 20μ , tender.

Tail gradually tapering, with bluntly rounded tip and a short conical outlet for the spinneret glands. In the female the tail measures $3,13-5,2$ anal diameters, in the male it is 3 anal diameters long.

GEOGRAPHICAL DISTRIBUTION : North Sea and Baltic.

Remarks. — Schulz's figure 18d gives a rather schematical picture of the spicular apparatus. His fig. 18c, representing the tip of the tail, is very probably taken after a flattened specimen.

32. *Microlaimus acuticaudatus* SCHUURMANS STEKHOVEN & DE CONINCK 1933.

REFERENCES :

SCHUURMANS STEKHOVEN & DE CONINCK 1933a, p. 5, pl. III, fig. 1-3.

Habitat : 2 ♀♀ from 't Zwyn, sand and organic detritus from a shallow channel, 28.XII.1931; NaCl : 21 ‰.

33. *Microlaimus robustidens* SCHUURMANS STEKHOVEN & DE CONINCK 1933.

REFERENCES :

SCHUURMANS STEKHOVEN & DE CONINCK 1933*a*, p. 6, pl. III, fig. 4-7.

Habitat : 2 ♂♂ from 't Zwyn, sand and organic detritus from a shallow channel,
28.XII.1931; NaCl : 21 ‰.

ORDER III : ARAEOLAIMOIDEA

We propose to bring together in a new order, that of the *Araeolaimoidea*, all those genera which are characterised by a 4-radiate symmetry in the distribution of the cephalic setae, and the peculiar structure of the amphid which in principle spiral-shaped, may develop into a closed or open, sometimes elongate loop. In some genera this loop is situated on a lateral shield.

The following families ought to be reckoned to this order :

I. — The family *Axonolaimidae* with the genera :

1. *Apodontium* COBB 1920, p. 277, n. 62.
2. *Araeolaimoides* DE MAN 1893, p. 86, syn. *Coinonema* COBB 1920, p. 259, n. 42.
3. *Araeolaimus* DE MAN 1888, p. 14, syn. *Parachromagaster* ALLGÉN 1929, p. 466 :
Spira BASTIAN 1865, ex parte.
4. *Ascolaimus* DITLEVSEN 1919, p. 168, syn. *Anticoma* BASTIAN 1865, ex parte :
Axonolaimus BUETSCHLI 1874, ex parte;
Monhystera BASTIAN 1865, ex parte.
5. *Axonolaimus* DE MAN 1888, p. 19, syn. *Anoplostoma* BUETSCHLI 1874, ex parte.
6. *Cynura* COBB 1920, p. 262, n. 46.
7. *Margonema* COBB 1920, p. 248, n. 27.
8. *Odontophora* BUETSCHLI 1874, p. 49 :
syn. *Conolaimus* FILIPJEV 1918-1921, p. 323;
Trigonolaimus DITLEVSEN 1919, p. 177.
9. *Synodontium* COBB 1920, p. 280, n. 65.

II. — The family *Diplopeltidae* with the genera :

1. *Acmaeolaimus* FILIPJEV 1918-1921, p. 345.
2. *Didelta* COBB 1929, p. 252, n. 33.
3. *Diplopeltis* COBB 1905, p. 100 (STILES & HASSALL 1905) :
syn. *Dipeltis* COBB 1891, p. 13;
Discophora VILLOT 1875, p. 463.

APPENDIX : *Disconema* Filipjev 1918-1921, p. 305.

This genus possesses amphids which resemble those of *Diplopeltis*, but it differs from the other representatives of the group by its 6-radiate symmetry.

III. — The family *Camacolaimidae* with the genera :

1. *Acontiolaimus* FILIPJEV 1918-1921, p. 186.
2. *Camacolaimoides* DE CONINCK & SCHUURMANS STEKHOVEN 1933, see below, p. 00.
3. *Camacolaimus* DE MAN 1889a, p. 8, syn. *Ypsilon* COBB 1920, p. 314, n. 96.
4. *Digitonchus* COBB 1920, p. 314, n. 95.
5. *Onchium* COBB 1920, p. 303, n. 83.
6. *Onchulella* COBB 1920, p. 306, n. 87.

IV. — The family *Halaphanolaimidae*.

We propose to create the afore mentioned new family for a group of genera which show a close relation to the *Camacolaimidae* at the one side, and the *Plectidae* at the other side. They are characterised by :

1. The typical 4-radiate symmetry in the distribution of the cepalic setae;
2. The spiral amphid from which that of *Anaplectus* DE CONINCK & SCHUURMANS STEKHOVEN (see below), *Dermatolaimus* STEINER and *Plectus* BASTIAN may be derived;
3. The spicular apparatus of the male, which strongly resembles that of *Camacolaimus* in certain genera, e. g. : *Halaphanolaimus*, *Deontolaimus*, *Dagda*, *Diodontolaimus*, and so on, and may easily be derived from this type in the other genera which belong to this family;
4. The preanal tubuli in the male, outlets of a series of preanal glands, typical for this family.

We reckon to this family the following genera :

1. *Anaplectus* DE CONINCK & SCHUURMANS STEKHOVEN nom. nov.
The present genus is proposed for all those species, formerly reckoned to *Plectus* BASTIAN, which possess a crown of 4 cephalic setae and a set of preanal tubuli in the male sex. Type species : *Anaplectus granulatus* (BASTIAN).
2. *Aphanolaimus* DE MAN 1860, p. 5 and 1884, p. 34.
3. *Cricolaimus* SOUTHERN 1914, p. 29.
4. *Dagda* SOUTHERN 1914, p. 29.
5. *Deontolaimus* DE MAN 1880, p. 3 and 1884, p. 31.
6. *Dermatolaimus* STEINER 1916, p. 604.
7. *Diodontolaimus* SOUTHERN 1914, p. 31.
8. *Halaphanolaimus* SOUTHERN 1914, p. 11.
9. *Leptolaimus* DE MAN 1876, p. 169 and 1884, p. 81.
10. *Paraphanolaimus* MICOLETZKY 1923a, p. 25.

APPENDIX :

11. *Aegialoalaimus* DE MAN 1907a, p. 228 and 1907b, p. 35.

Aegialoalaimus DE MAN has (confer SCHUURMANS STEKHOVEN 1931, p. 649) a 4-radiate distribution of the cephalic setae, and amphids which at first sight circular, prove to be faintly spiral when studied accurately. The ornamentation of the skin presents rings demarcated by points. In his paper of 1931, Schuurmans Stekhoven shifted this genus from the *Monhysteridae* to the *Chromadoridae*. We believe that this genus is more closely allied to the *Halaphanolaimidae* (order *Araeolaimoidea*).

12. *Alaimella* COBB 1920, p. 233, n. 7a-b.

This genus is not sufficiently characterised. As far as may be concluded from Cobb's descriptions, the spicular apparatus shows much resemblance with that of *Camacolaimus* and *Halaphanolaimus*. The distribution of the setae and the structure of the amphids point undoubtedly to this order.

In both genera *Aegialoalaimus* De Man and *Alaimella* Cobb the preanal tubules, characteristic for the other genera of the family, fail.

V. — The family *Plectidae*.

In this family remain :

1. *Haliplectus* COBB 1913, p. 443.
2. *Plectus* BASTIAN 1865, p. 118.
3. *Paraplectus* FILIPJEV 1930, p. 12.
4. *Pycnolaimus* COBB 1920, p. 258, n. 40 :
Closely allied with *Wilsonema* COBB 1913.
5. *Wilsonema* COBB 1913, p. 443 :
syn. *Bitholinema* DE CONINCK 1931b, p. 2.

APPENDIX : Insufficiently characterised and therefore of uncertain position :

6. *Aulolaimoides* MICOLETZKY 1915, p. 3 :
Shows great resemblance with *Siphonolaimus* DE MAN 1893.
7. *Rhabdolaimus* DE MAN 1880, p. 59 and 1884, p. 125.

VI. — APPENDIX : The family *Tripyloidea*.

The family of the *Tripyloidea*, brought by Filipjev not without hesitation to the *Enoplidae*, certainly ought not to be reckoned to that order. The systematic position of this family is extremely difficult. Instead of a 4-radiate symmetry at the anterior end, a 6-radiate symmetry prevails. Therefore a close relation with the other families of the *Araeolaimoidea* seems rather doubtful, although the similar structure of the amphids points to that direction. At the other hand, there is a striking resemblance between the genital armature of the *Tripyloidea* and that of the *Cyatholaimidae*.

Thus the systematic position of this family remains uncertain.

For us, the structure of the amphids is of primary value.

For that reason we place the family of the *Tripyloidea* into the order of the *Araeolaimoidea*, since it does not seem recommendable to us to base a new order on 2 or 3 genera only.

To this family we bring the following genera :

1. *Bathylaimus* COBB 1894, p. 409 :
(nec *Bathylaimus* DITLEVSEN 1919, p. 168 = *Ascolaimus* DITLEVSEN.
Bathylaimus FILIPJEV 1922a, p. 107 and 1925, p. 198 = *Parabathylaimus*
nov. gen.).
syn. *Cothonolaimus* DITLEVSEN 1919 : syn. *Macrolaimus* DITLEVSEN 1919, p. 188,
nec *Macrolaimus* MAUPAS 1900, p. 578.
2. *Parabathylaimus* DE CONINCK & SCHUURMANS STEKHOVEN 1933, nov. gen. (see below !)
3. *Triploides* DE MAN 1886, p. 60 :
syn. *Tripyla* BUETSCHLI 1874, p. 33, nec *Tripyla* BASTIAN 1865, p. 115.

APPENDIX : *Omicronema* Cobb 1920, p. 265, n° 50 strongly resembles *Parabathylaimus* De Coninck & Schuurmans Stekhoven, but since no figures of the spicular apparatus are given, no certain conclusion is possible.

Allgén's genus *Bathylaimella* Allgén 1930c, p. 257, is excluded from this family since there is no evidence for a relation with the genus *Bathylaimus* Cobb. The systematic position of this genus will remain uncertain till a more thorough description and more accurate figures will be given.

I. — FAMILY AXONOLAIMIDAE.

GENUS ARAEOLAIMOIDES DE MAN 1893.

Syn. : *Coinonema* COBB 1920.

The following species belong to this genus :

1. *Araeolaimoides microphthalmus* DE MAN 1893, p. 86, pl. V, fig. 4.
2. *Araeolaimoides punctatus* (COBB) 1920, p. 259 :
syn. *Coinonema punctatum* COBB 1920.
3. *Araeolaimoides zosteræ* FILIPJEV 1918, p. 326, pl. X, fig. 73a-d.

KEY TO THE SPECIES OF ARAEOLAIMOIDES

- I. Amphids on 1 cephalic diameter from the anterior end :
Araeolaimoides punctatus COBB.
- II. Amphids on 3 cephalic diameters from the anterior end :
 - A. Amphids *Axonolaimus*-like; ocelli on 1/2 of œsophageal length :
Araeolaimoides microphthalmus DE MAN.
 - AA. Amphids *Araeolaimus*-like; ocelli on 1/3 of œsophageal length :
Araeolaimoides zosteræ FILIPJEV.

No representants of this genus are found hitherto along the Belgian Coast. *Araeolaimoides microphthalmus* De Man however very probably will be found in a near future, since it occurs also in the Channel and in Helgoland.

GENUS ARAEOLAIMUS DE MAN 1888.

Syn. : *Parachromagaster* ALLGÉN 1929.

Spira BASTIAN 1865 ex parte.

The following species of the genus *Araeolaimus* were described until the present moment.

1. *Araeolaimus bioculatus* (DE MAN) 1878 :
syn. *Spira bioculata* DE MAN 1878, pp. 20-21, pl. VIII, fig. 13a-d.
2. *Araeolaimus cobbi* STEINER 1916, p. 637, pl. XVII, fig. 36a-b; pl. XXXII, fig. 36c-e, is no *Araeolaimus*. Probably a *Phanodermatid* of uncertain position.
3. *Araeolaimus cylindricauda* ALLGÉN 1931, p. 256, fig. 14a-c = *A. longicauda* ALLGÉN 1929.
4. *Araeolaimus ditlevseni* ALLGÉN 1928a, p. 287, fig. 19a-d = *A. elegans* DE MAN 1888.
5. *Araeolaimus dolichoposthius* SSAVELJEV 1912, p. 123 = *A. elegans* DE MAN 1888.
6. *Araeolaimus elegans* DE MAN 1888, p. 16, pl. I, fig. 9; pl. II, fig. 9b :
syn. *A. ditlevseni* ALLGÉN 1928.
A. dolichoposthius SSAVELJEV 1912.
A. spectabilis DITLEVSEN 1921.
7. *Araeolaimus filipjevi* SCHUURMANS STEKHOVEN & ADAM 1931, p. 52, pl. X, fig. 10-12.
8. *Araeolaimus longicauda* ALLGÉN 1929b, p. 490, fig. 44a-b :
syn. *A. cylindricauda* ALLGÉN 1931.
A. tenuis (ALLGÉN) 1932.
9. *Araeolaimus macrocirculus* KREIS 1928, p. 185, pl. IX and XII, fig. 31.
10. *Araeolaimus mediterranea* (DE MAN) 1878, pp. 21-22, pl. IX, fig. 14a-c :
syn. *Spira mediterranea* DE MAN 1878.
11. *Araeolaimus ponticus* FILIPJEV 1922a, p. 178, pl. IV, fig. 35a-d.
12. *Araeolaimus sabulicola* (ALLGÉN) 1929b, p. 466 :
syn. *Parachromagaster sabulicola* ALLGÉN 1929, ? = *A. steineri* FILIPJEV 1922.
13. *Araeolaimus spectabilis* DITLEVSEN 1921, p. 8, fig. 3, pl. II, fig. 1; pl. III, fig. 3 and 9 = *A. elegans* DE MAN 1888.
14. *Araeolaimus steineri* FILIPJEV, 1922a, p. 177 :
syn. *A. elegans* STEINER (nec DE MAN) 1916, pp. 634-636, pl. XVII, fig. 38b and pl. XXXIII, fig. 38c-e, nec pl. XVII, fig. 38a, nec pl. XXXIII, fig. 38f.
A. sabulicola (ALLGÉN) 1929.
15. *Araeolaimus tenuis* (ALLGÉN) 1932c, p. 426, fig. 11a-d :
syn. *Parachromagaster tenuis* ALLGÉN 1932 = *A. longicauda* ALLGÉN 1929.
16. *Araeolaimus tristis* ALLGÉN 1931, pp. 258-259, fig. 15a-c, a doubtful species; perhaps a synonym of *A. elegans* DE MAN.

KEY TO THE TRUE SPECIES OF ARAEOLAIMUS

(N° 1, 6-11, 14 of the foregoing list.)

I. Nervering on 1/4 of the œsophageal length :

Araeolaimus macrocirculus KREIS.

II. Nervering at the middle or behind the middle of the œsophagus :

A. Cephalic setae 1 × cephalic diameter :

Araeolaimus longicauda ALLGÉN.

AA. Cephalic diameter at the utmost 0,65 × cephalic diameter :

a. Amphids opposite to the anterior portion of the buccal cavity; foreborder on 0,117 × the distance : anterior end-ocelli :

Araeolaimus steineri FILIPJEV.

aa. Amphids opposite to the posterior portion of the buccal cavity or behind it

B. Amphibial diameter 1/2 × corresponding body diameter or larger :

b. Foreborder of the amphids on 0,166 × the distance : anterior end-ocelli. Gubernaculum without a caudal apophysis :

Araeolaimus ponticus FILIPJEV.

bb. Foreborder of the amphids on 0,222 × the distance : anterior end-ocelli. Gubernaculum without a caudal apophysis :

Araeolaimus filipjevi SCHUURMANS STEKHOVEN & ADAM.

BB. Amphibial diameter less than 1/2 × corresponding body diameter :

c. Ocelli absent :

Araeolaimus mediterraneus (DE MAN).

cc. Ocelli present :

d. Ocelli on 4 × the distance : anterior end- foreborder of the amphids :

Araeolaimus elegans DE MAN.

dd. Ocelli on 3 × the distance : anterior end- foreborder of the amphids :

Araeolaimus bioculatus (DE MAN).

We found in the Belgian material 1 species only :

34. *Araeolaimus filipjevi* SCHUURMANS STEKHOVEN & ADAM 1931.

Fig. 82.

REFERENCES .

SCHUURMANS STEKHOVEN & ADAM 1931, p. 52, pl. X, fig. 10-12.

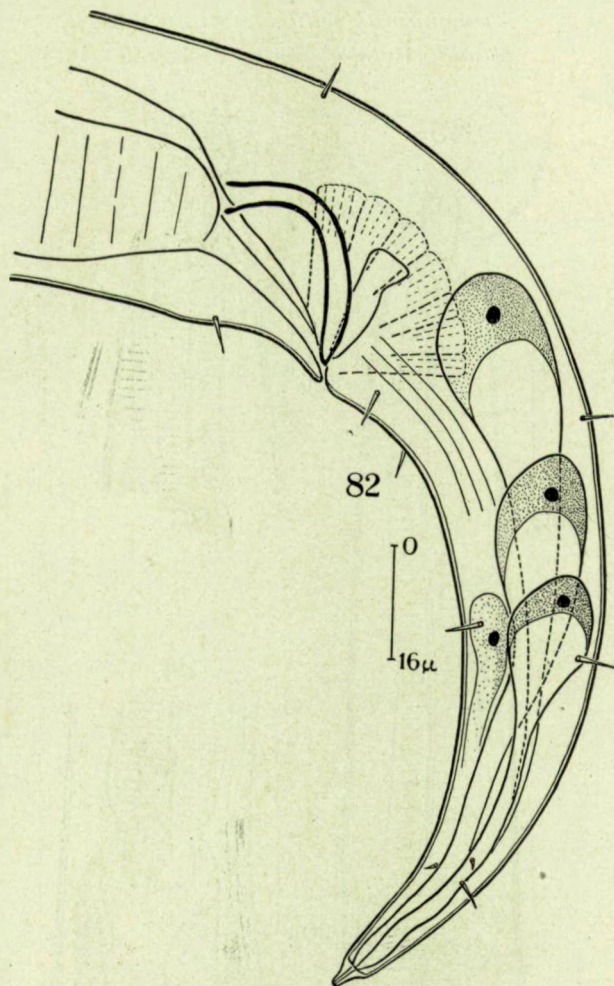
1 ♂, 1 ♀ and 5 juv. from Oostende, on a break-water, 18.XII.1931; NaCl : 30,77 ‰.

DIMENSIONS : ♂. L. : 1,165 mm.; α : 42,8; β : 7,6; γ : 13,7.

We may limit ourselves to some additional notes on the genital armature of the male. Schuurmans Stekhoven & Adam oversaw the tender gubernaculum which is plate-like and presents the indication of a caudal apophysis only.

Spicula strongly curved, not so slender as depicted by Schuurmans Stekhoven & Adam in their fig. 11, pl. 10. Tail 4 times as long as the chord of the spicula, beset with some short setae which occur in the subventral and subdorsal lines. Our fig. 82 is taken after a somewhat flattened individual, which naturally alters the relations.

GEOGRAPHICAL DISTRIBUTION : North Sea.



Araeolaimus filipjevi SCHUURMANS STEKHOVEN & ADAM.

82. Spicular apparatus and tail of a male.

GENUS ASCOLAIMUS DITLEVSEN 1919.

Syn. : *Anticoma* BASTIAN 1865, ex parte.

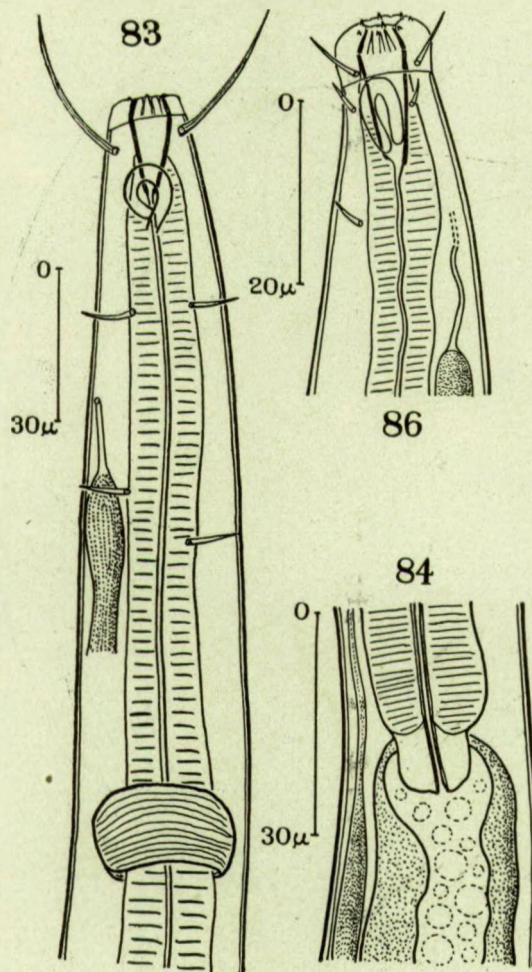
Axonolaimus BUETSCHLI 1874, ex parte.

Monhystera BASTIAN 1865, ex parte.

Up to this moment, only a single species represents this genus.

35. *Ascolaimus elongatus* (BUETSCHLI) 1874.

Fig. 83-84.

Syn : *Anticoma longisetosa* KREIS 1924.*Ascolaimus elongatus* SKWARRA 1921.*Ascolaimus filiformis* DITLEVSEN 1919.*Axonolaimus serpentulus* DE MAN 1922.*Axonolaimus tenuis* SCHULZ 1932.*Monohystera elongata* BUETSCHLI 1874.*Ascolaimus elongatus* (BUETSCHLI).

83. Anterior end of a male with partially expanded mouth.

84. Transition between oesophagus and intestine.

Axonolaimus paraspinosus SCHUURMANS STEKHOVEN & ADAM.

86. Head end of a male.

REFERENCES :

ALLGÉN 1929c, pp. 34-35, fig. 8a-b, *Ascolaimus filiformis* DITLEVSEN.BUETSCHLI 1874, p. 26, pl. II, fig. 9a-d, *Monohystera elongata* BUETSCHLI.

- DITLEVSEN 1919, pp. 168-169, pl. IV, fig. 2, 4, 8; pl. VI, fig. 6 *Ascolaimus filiformis* DITLEVSEN.
- FILIPJEV 1930, pp. 51-52, fig. 34a-c, *Ascolaimus elongatus* SKWARRA.
- KREIS 1924, pp. 4-6, pl. I, fig. 2-3, *Anticoma longisetosa* KREIS.
- DE MAN 1922c, p. 117, *Axonolaimus serpentulus* nom. nudum.
- SCHULZ 1932, pp. 411-412, fig. 45a-c, *Axonolaimus tenuis* SCHULZ.
- SCHUURMANS STEKHOVEN 1931, p. 618, *Ascolaimus filiformis* DITLEVSEN.
- SCHUURMANS STEKHOVEN & DE CONINCK 1932a, pp. 127-128, *Ascolaimus elongatus* (BUETSCHLI).
- SCHUURMANS STEKHOVEN & DE CONINCK 1932b, pp. 149-163, fig. 1-8, *Ascolaimus elongatus* (BUETSCHLI).
- SKWARRA 1921, p. 9, fig. 16a-b, *Ascolaimus elongatus* SKWARRA.
- 1 ♀ from Oostende, on a break-water, 18.XI.1931; NaCl : 30,77 ‰.
- 2 ♂♂, 4 ♀♀ and 1 juv. from Oostende, from a puddle on the strand, 18.XI.1931; NaCl : 29,3 ‰.
- 2 ♀♀ and 23 juv. from Heyst-Zeebrugge; strand, 2.IX.1931.
- 5 ♂♂, 6 ♀♀ and 9 juv. from 't Zwyn, sand and organic detritus, 28.XII.1931; NaCl: 21 ‰.

It may suffice to refer to our paper of 1932b, where an extensive discussion on its synonymy is given together with a new description of the species.

Here we will give only a figure of the œsophageal valve, and another of the anterior end of a male the buccal cavity of which is slightly protruded so that the vestibular cuticularisations may be confounded with small papillae. We once more call to the attention the variability of the absolute length and indices of this species and refer to what is said about this phenomenon on p. 18 in the general part.

GEOGRAPHICAL DISTRIBUTION : North Sea and Baltic.

GENUS AXONOLAIMUS DE MAN 1888.

Syn. : *Anoplostoma* BUETSCHLI 1874 ex parte.

Until now 16 species of *Axonolaimus* were described :

1. *Axonolaimus demani* nom. nov. :
syn. *Axonolaimus* spec. DE MAN 1928, p. 97, fig. 1-7.
2. *Axonolaimus elegans* SCHULZ 1932, p. 412, fig. 46a-e = *Odontophora setosa* ALLGÉN 1929.
3. *Axonolaimus limalis* SSAVELJEV 1912, p. 118.
4. *Axonolaimus paraspinosus* SCHUURMANS STEKHOVEN & ADAM 1931, p. 50 pl. X, fig. 6-9 :
syn. *Anoplostoma spinosum* DE MAN 1888 nec BUETSCHLI.
Axonolaimus similis SCHULZ 1932.
5. *Axonolaimus ponticus* FILIPJEV 1918-1921, p. 322, pl. X, fig. 71a-c.

6. *Axonolaimus serpentulus* DE MAN 1922c, p. 117 = *Ascolaimus elongatus* (BUETSCHLI) 1874.
7. *Axonolaimus setosus* FILIPJEV 1918-1921, p. 319, pl. X, fig. 70a-c.
8. *Axonolaimus setosus* SKWARRA 1921, p. 9, fig. 15a-b = *Axonolaimus villosus* SKWARRA 1922.
9. *Axonolaimus similis* SCHULZ 1932, p. 410, fig. 44a-b = *Axonolaimus paraspinosus* SCHUURMANS STEKHOVEN & ADAM 1931.
10. *Axonolaimus spinosus* (BUETSCHLI) 1874, p. 37, pl. IV, fig. 20a; pl. V, fig. 20b-c :
syn. *Anoplostoma spinosum* BUETSCHLI 1874, nec DE MAN 1888.
11. *Axonolaimus tenuis* SCHULZ 1932, pp. 411-412, fig. 45a-c = *Ascolaimus elongatus* (BUETSCHLI) 1874.
12. *Axonolaimus typicus* DE MAN 1922b, p. 232, fig. 20a-b.
13. *Axonolaimus villosus* SKWARRA 1922, p. 112.
syn. *Axonolaimus setosus* SKWARRA 1921 nec FILIPJEV 1918.

Doubtful species :

14. *Axonolaimus filiformis* DE MAN 1889a, p. 3.
15. *Axonolaimus impar* SSAVELJEV 1912, p. 119.
16. *Axonolaimus polaris* COBB 1914, p. 30, n° 24 = *Odontophora polaris* (COBB) 1914 (see below).

KEY TO THE TRUE SPECIES OF AXONOLAIMUS

(N° 1, 3-5, 7, 10, 12-13 of the foregoing list.)

I. Amphids a closely pinched loop :

- a. Body length less than 2 mm.; amphids 0,75 × length of buccal cavity; 4 × as long as wide :

Axonolaimus spinosus (BUETSCHLI).

- aa. Body length more than 3 mm.; amphids 0,66 × length of buccal cavity; 3 × as long as wide :

Axonolaimus setosus FILIPJEV.

II. Amphids an open loop :

- A. Nervering in front of the middle of the œsophagus :

Axonolaimus limalis SSAVELJEV.

- AA. Nervering at 2/3-3/4 of the œsophageal length :

- B. Cephalic setae 1,5 × as long as the cephalic diameter :

Axonolaimus villosus SKWARRA.

- BB. Cephalic setae less than 1 × cephalic diameter :

- b. Amphids roundish, only slightly longer than wide :

- c. Cephalic setae accompanied by minute bristles, which reach at the utmost 1/3 of the length of the longer cephalic setae :

Axonolaimus typicus DE MAN.

- cc. Cephalic setae not accompanied by minute bristles :

Axonolaimus demani nom. nov.

bb. Amphids elongate, at least 2 × as long as wide :

d. On a level with the middle of the amphids small setae are to be seen :

Axonolaimus paraspinosus SCHUURMANS STEKHOVEN & ADAM.

dd. No such setae on a level with the amphids :

Axonolaimus ponticus FILIPIEV.

Along the Belgian Coast 2 species of *Axonolaimus* were found :

1. *Axonolaimus paraspinosus* SCHUURMANS STEKHOVEN & ADAM.
2. *Axonolaimus spinosus* (BUETSCHLI).

36. *Axonolaimus paraspinosus* SCHUURMANS STEKHOVEN & ADAM 1931.

Fig. 85-88.

Syn. : *Axonolaimus similis* SCHULZ 1932.

Axonolaimus spinosus DE MAN 1888 nec BUETSCHLI 1874.

REFERENCES :

- DE MAN 1888, p. 19, pl. II, fig. 11-11b, *Anoplostoma spinosum* (BUETSCHLI).
 SCHNEIDER, G. 1926b, p. 38, fig. 2, *Axonolaimus spinosus* (BUETSCHLI).
 SCHULZ 1932, p. 410, fig. 44a-b, *Axonolaimus similis* SCHULZ.
 SCHUURMANS STEKHOVEN & ADAM 1931, p. 50, pl. X, fig. 6-9, *Axonolaimus paraspinosus*
 SCHUURMANS STEKHOVEN & ADAM.
 1 ♂, 2 ♀♀ and 4 juv. from Oostende, on a break-water, harbour entrance, IX.1931:
 DE SAEDELEER.

DIMENSIONS :

♂ L. : 1,675 mm.; α : 29,9; β : 8,04; γ : 10,5.

0	20	?	208	358	M	1516		
12			38		56	40	8	1,675 mm.

♀ L. : 1,710 mm.; α : 31,6; β : 7,6 ; γ : 10,2; V. : 53,6 %.

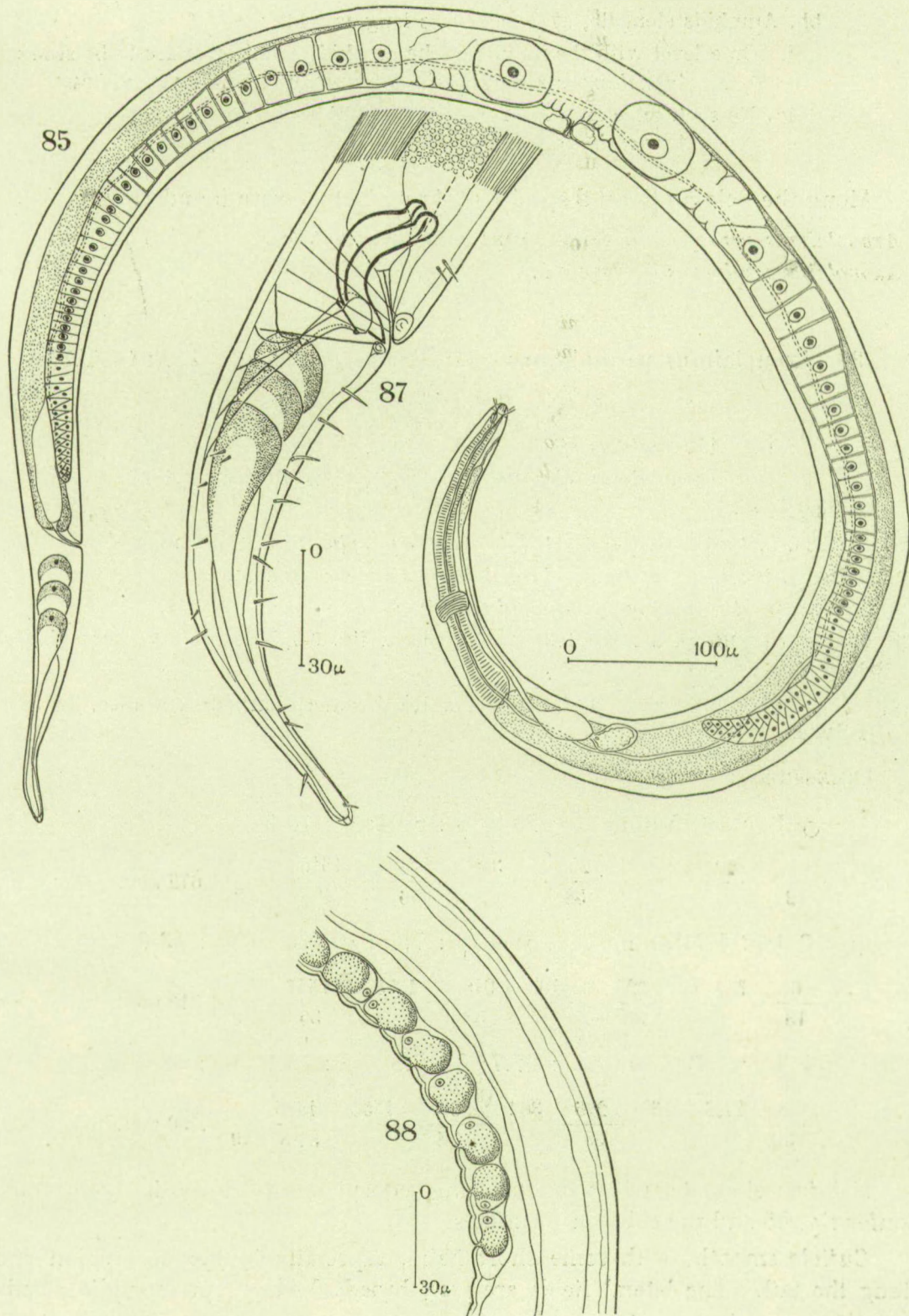
0	?	?	225	416	916	1375	1542		
13			38		54		36	8	1,710 mm.

♀ L. : 1,790 mm.; α : 27,7; β : 7,8 ; γ : 9,1; V. : 53,6 %.

0	17,8	153	226	382	960	1550	1595		
15,5			38		64,4		37,3	9	1,790 mm.

Habitus elongate fusiform, tapering conspicuously towards both ends. Confer fig. 85 and the cobbian formula's.

Cuticle smooth, with some short hairs, especially in the neckregion and along the tail. The lateral fields are very broad, 0,44 × corresponding body diameter.



Axonolaimus paraspinosus SCHUURMANS STEKHOVEN & ADAM.

85. General view of a female.
 87. Spicular apparatus of a male.
 88. Preanal glands in a male.

Amphids loop-shaped, open, 10μ long and $4,6\mu$ broad, $0,30 \times$ corresponding body diameter, situated just behind the cephalic suture, opposite to the second portion of the buccal cavity, accompanied by 2 small setae.

Head distinctly set off from the remainder of the body, somewhat swollen. There is a crown of labial papillae, a crown of minute cephalic papillae and a crown of 4 cephalic setae $0,66 \times$ cephalic diameter.

Buccal cavity 20μ deep, $1,60-1,65 \times$ cephalic diameter; vestibular portion with 8 longitudinal cuticularisations. Second portion $4-5 \times$ as long as the vestibular portion.

Oesophagus gradually swelling towards the base. Nervering on 66 % of its length.

Ventral gland on 33 % of the length of the oesophagus behind the base of the latter, with a large appendant cell. *Excretory pore* immediately behind the buccal cavity. Ampulla on 2 buccal cavities from the anterior end.

Female genital tract paired, symmetrical; ovaries outstretched, reaching in adult females almost to the base of the ventral gland on the one side, to the anal opening on the other side.

Testis very long, beginning at 21 % of the body length. *Spicula* arcuate, strong, with a proximal knob-like swelling; pointed at the distal end. Chord of spiculum 39μ , or $1 \times$ anal diameter long. *Gubernaculum* anvil-shaped, with a 16μ long dorsal apophysis. There is a preanal row of 17 unicellular glands which open by small ducts and are situated close together. G. Schneider 1926 found similar preanal glands in a male *Axonolaimus spinosus*. On a level with the proximal end of the spicula there are 2 pairs of subventral setae.

Tail of the same shape in both sexes, gradually tapering, last $1/5$ cylindrical, slightly swollen at the end. In the male, short setae are scattered along the subventral lines. Irregularly distributed setae occur along the subdorsal lines.

GEOGRAPHICAL DISTRIBUTION : North Sea and Baltic.

37. *Axonolaimus spinosus* (BUETSCHLI) 1874.

Syn. : *Anoplostoma spinosum* BUETSCHLI 1874.

REFERENCES :

- | | |
|--|---|
| ALLGÉN 1927a, pp. 57-58. | FILIPJEV 1930, p. 50. |
| ALLGÉN 1929a, p. 47. | DE MAN 1922b, p. 233, fig. 21a-c. |
| ALLGÉN 1929c, pp. 33-34. | SCHNEIDER, G. 1906, p. 39, pl. 2, fig. 18a-b. |
| BUETSCHLI 1874, p. 37, pl. 4, fig. 20a; pl. 5, fig. 20b-c. | SCHNEIDER, G. 1927, pp. 38-40, fig. 2. |
| | Nec DE MAN 1888, pp. 50-51, pl. 10, fig. 6-9. |
- 1 ♂ and 2 juv. from Oostende on a break-water, 18.XI.1931; NaCl : $30,77 \text{ ‰}$.

GEOGRAPHICAL DISTRIBUTION : Channel, North Sea and Baltic.

Remarks. — G. Schneider's *Axonolaimus spinosus* (Buetschli) possesses a similar row of preanal ventral glands as *Axonolaimus paraspinosus* Schuurmans Stekhoven & Adam, whereas the pilosity at the anterior end, especially that along the œsophagus, is similar in both species.

38. *Axonolaimus demani* nom. nov.

Syn. : *Axonolaimus* spec. DE MAN 1928.

REFERENCES :

DE MAN 1928, pp. 97-101, fig. 1-7

We propose to name *Axonolaimus demani* nom. nov. the specimens from the Canal de Caen described by De Man as *Axonolaimus* spec., since it proves to be a good species, which may be easily recognized from the nearly related *Axonolaimus typicus* of the same author by the absence of the small setae which accompany the larger cephalic setae in *Axonolaimus typicus*.

GENUS ODONTOPHORA BUETSCHLI 1874.

Syn. : *Axonolaimus* DE MAN 1888 ex parte.

Conolaimus FILIPJEV 1918-1921.

Trigonolaimus DITLEVSEN 1919.

In 1929d Allgén pointed to the fact that Buetschli's *Odontophora marina* Buetschli 1874 belongs to the same genus as the species later on described as representants of the genera *Conolaimus* Filipjev 1918 and *Trigonolaimus* Ditlevsen 1919. Filipjev is of the same opinion; confer Allgén's footnote on page 309 of his paper of 1929. This opinion is also confirmed by our observations. In accordance with the rules of priority Buetschli's name must be retained, although Buetschli's *Odontophora marina* is a doubtful one and cannot be recognised with certainty after the description.

The genus *Odontophora* embraces the following species :

1. *Odontophora angustilaima* (FILIPJEV) 1918, p. 324, pl. X, fig. 72 :
syn. *Conolaimus angustilaimus* FILIPJEV 1918.
2. *Odontophora armata* (DITLEVSEN) 1919, p. 178, pl. VIII, fig. 1, 4, 6, 7 :
syn. *Trigonolaimus armatus* DITLEVSEN 1919.
Trigonolaimus intermedius ALLGÉN 1929.
Trigonolaimus minor DITLEVSEN 1919.
3. *Odontophora intermedia* (ALLGÉN) 1929b, p. 487, fig. 42a-b :
syn. *Trigonolaimus intermedius* ALLGÉN 1929.
= *Odontophora armata* (DITLEVSEN) 1919.
4. *Odontophora longicaudata* SCHUURMANS STEKHOVEN & DE CONINCK 1933, p. 8, pl. IV, fig. 3-4.

5. *Odontophora longisetosa* (ALLGÉN) 1928c, p. 303, fig. 4a-b :
syn. *Conolaimus longisetosus* ALLGÉN 1928.
6. *Odontophora minor* (DITLEVSEN) 1919, p. 180, pl. VIII, fig. 5, 9, pl. IX, fig. 4, 5 :
syn. *Trigonolaimus minor* DITLEVSEN 1919.
= *Odontophora armata* (DITLEVSEN) 1919.
7. *Odontophora setosa* (ALLGÉN) 1929c, p. 37, fig. 9a-b :
syn. *Trigonolaimus setosus* ALLGÉN 1929.
Axonolaimus elegans SCHULZ (confer above, p. 101).
? *Odontophora marina* BUETSCHLI 1874 (see below).
Odontophora longisetosa SCHUURMANS STEKHOVEN 1931. nec ALLGÉN.

Doubtful species :

8. *Odontophora marina* BUETSCHLI 1874, p. 49, pl. III, fig. 13; it is very probably that this species is synonym with *O. setosa* (ALLGÉN); a comparison of Allgén's and Schulz's figures of *O. setosa* (ALLGÉN) with Buetschli's figure of *O. marina* shows a striking similarity in the pilosity at the anterior end. The fact that Buetschli and Schulz studied specimens of the same habitat (Kiel) speaks also in favour of a possible synonymy.
9. *Odontophora parasetosa* (ALLGÉN) 1929b, p. 489, fig. 43a-b :
syn. *Trigonolaimus parasetosus* ALLGÉN 1929.
10. *Odontophora polaris* (COBB) 1914, p. 30 :
syn. *Axonolaimus polaris* COBB 1914.

KEY TO THE SPECIES OF THE GENUS ODONTOPHORA

- I. Tail elongate, almost cylindrical, 10 anal diameters long; amphids large, 1 cephalic diameter long :
Odontophora longicaudata SCHUURMANS STEKHOVEN & DE CONINCK.
- II. Tail clumsy, conical, at the utmost 5 anal diameters long :
 - A. Cephalic and cervical setae very long : cephalic setae $2,2 \times$ cephalic diameter, cervical setae $1 \times$ body diameter; amphids very large, 1 cephalic diameter long :
Odontophora longisetosa (ALLGÉN).
 - AA. Cephalic setae less than $1,5 \times$ cephalic diameter :
 - a. Amphids roundish; cephalic setae $1,1 \times$ cephalic diameter, subcephalic setae as long as $2/3$ cephalic setae :
Odontophora angustilaima (FILIPJEV).
 - aa. Amphids elongate; length of the subcephalic setae less than $1/2 \times$ that of the cephalic ones :
 - b. Excretory pore opposite to the posterior end of the buccal cavity, on $1,5 \times$ cephalic diameter from the anterior end :
Odontophora setosa (ALLGÉN).
 - bb. Excretory pore far behind the buccal cavity on $4,4$ cephalic diameters from the anterior end :
Odontophora armata (DITLEVSEN).

39. *Odontophora armata* (DITLEVSEN) 1919.

Fig. 89-95.

Syn. : *Trigonolaimus armatus* DITLEVSEN 1919.*Trigonolaimus intermedius* ALLGÉN 1929.*Trigonolaimus minor* DITLEVSEN 1919.

REFERENCES :

- ALLGÉN 1929d, p. 305, fig. 2a-b, *Trigonolaimus armatus*.
 ALLGÉN 1929b, p. 487, fig. 42a-b, *Trigonolaimus intermedius*.
 ALLGÉN 1930b, p. 204, *Conolaimus armatus*.
 ALLGÉN 1931, p. 254, *Conolaimus armatus*.
 DITLEVSEN 1919, p. 178, pl. VIII, fig. 1, 4, 6, 7, *Trigonolaimus armatus*.
 DITLEVSEN 1919, p. 180, pl. VIII, fig. 5, 9; pl. IX, fig. 4, 5, *Tr. minor*.
 SCHUURMANS STEKHOVEN & DE CONINCK 1932, p. 129, fig. 1a-c, *Conolaimus armatus*.
 1 ♂ and 1 juv. from Oostende, on a break-water, harbour entrance, IX.1931; DE SAEDE-
 LEER.
 1 ♂, 1 ♀ and 11 juv. from Heyst-Zeebrugge, 2.IX.1931.

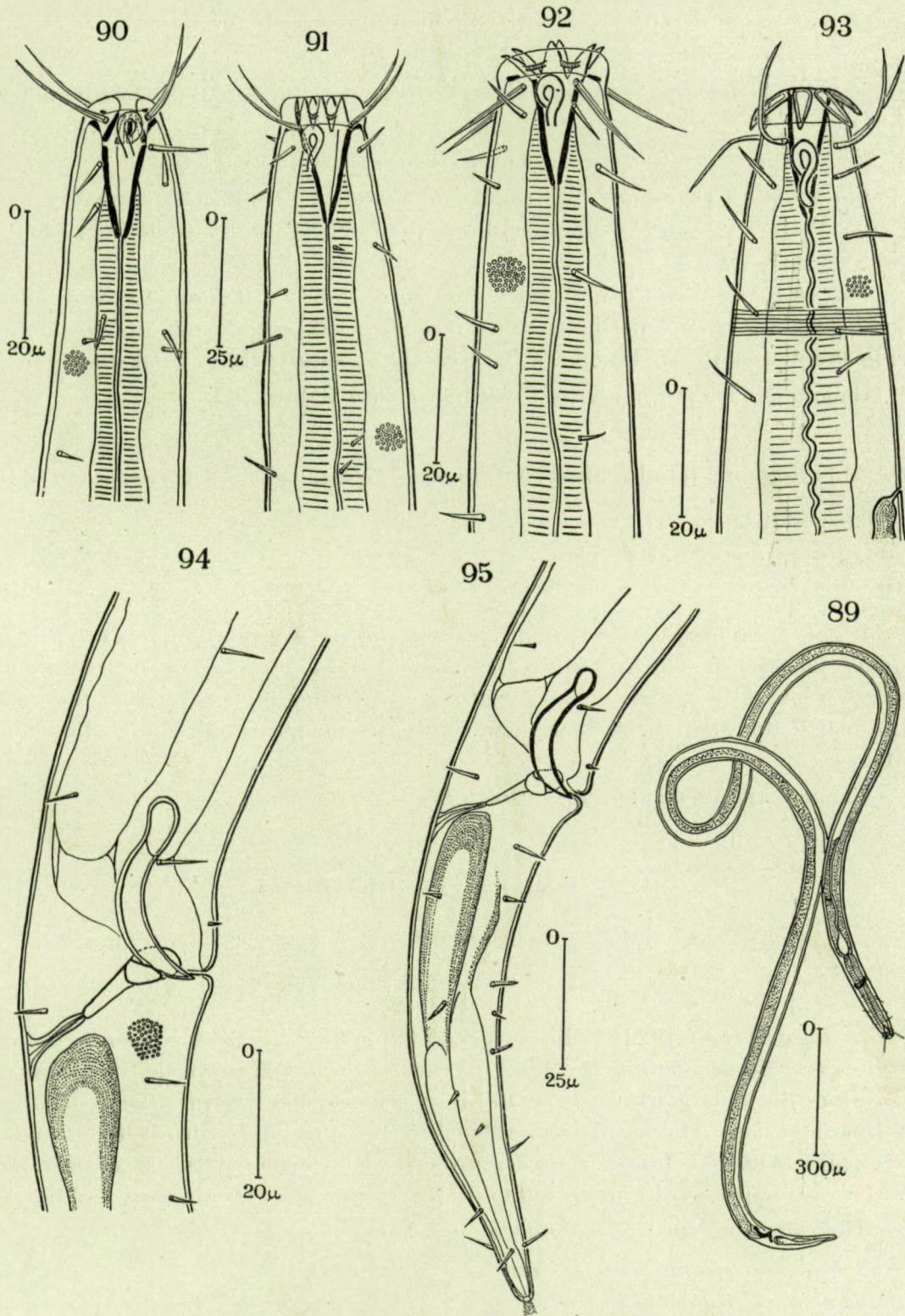
DIMENSIONS :

♂ L. :	2,83 mm.; α : 73,6; β : 14,84; γ : 21,77.							
0	25	133	190	?	M	2700		
	10,8		33,6		38,4	28,8	2,83 mm.	
♀ L. :	4 mm.; α : 85; β : 21,34; γ : 29,2; V. : 53,1 %.							
0	21,6	133	187	?	2125	2575	3860	
			36		50,4		32,4	4 mm.

Body almost cylindrical. *Cuticle* very finely and faintly ringed, with a dot-like inner structure (confer the dotted spots in fig. 90-92). Short setae are scattered along the submedian lines. *Amphids* loop-shaped, resembling a tennis-racket, situated just behind the cephalic suture, its anterior border on a level with the implantation of the cephalic setae. Its place in relation with the buccal cavity varies according to the state of the buccal cavity; it is situated opposite to the vestibular indentation when the lips are intruded; in the case of total extrusion the amphids are shifted opposite to the posterior end of the buccal cavity (fig. 90-93).

Head truncate at the anterior end. Lips fused, without labial papillae; 4 cephalic setae 1-1,4 × cephalic diameter long. Subcephalic setae short, inconspicuously longer than the other bristles distributed along the oesophageal portion.

Buccal cavity typical. Vestibular portion with 6 protrusible teeth linked together by striated elastic (?) ligaments. Oesophageal portion simply funnel-shaped.



Odontophora armata (DITLEVSEN).

- 89. General view of a male.
- 90. Head end of a juvenile, intruded.
- 91. Head end of a male, opened.
- 92. Head end of a female, slightly extruded.
- 93. Head end of a male, totally extruded.
- 94. Spicular apparatus of a male.
- 95. Spicular apparatus and tail of a male.

Oesophagus cylindrical, slightly broadening towards the base.

Nerving on 70 % of the oesophageal length.

Ventral gland post-oesophageal; *excretory pore* on 4,5 cephalic diameters from the anterior end.

Female genital tract paired, symmetrical; ovaries outstretched.

Spicula strong, arcuate; proximal end knobbed, distal end pointed; chord 1 anal diameter long. Gubernaculum anvil-shaped with a distinct dorsal apophysis.

Tail elongate; basal 2/3 almost cylindrical; apical 1/3 conical with bluntly rounded apex. Short stiff bristles are placed in subventral and subdorsal lines along the male tail. Relations in the male tail : length 4,2 × anal diameter.

GEOGRAPHICAL DISTRIBUTION : North Sea and Baltic.

40. *Odontophora longicaudata* SCHUURMANS STEKHOVEN & DE CONINCK 1933.

REFERENCES :

SCHUURMANS STEKHOVEN & DE CONINCK 1933, p. 8, pl. IV, fig. 3-4.

1 juv. from Oostende, from a puddle on the strand, 18.XI.1931; NaCl : 29,3 ‰.

It is not impossible that this species will prove to be only a juvenile *Odontophora longisetosa* Allgén, but for the moment this cannot be stated. Although the relations of the tail will change with age, it seems improbable that they will diminish so far that the tail length in adult specimens equals 4 anal diameters only.

GEOGRAPHICAL DISTRIBUTION : North Sea.

III. — FAMILY CAMACOLAIMIDAE.

GENUS CAMACOLAIMUS DE MAN 1889.

Syn. : *Ypsilon* COBB 1920.

In his paper of 1922, Filipjev brought together the genera *Acontiolaimus* Filipjev and *Camacolaimus* De Man. We cannot follow him in this synonymisation, since the distal portion of the dorsal spear protrudes free into the vestibulum in *Acontiolaimus*, whereas the same structure lies quite imbedded in the oesophageal wall in *Camacolaimus*. This feature must be considered as of generic value. Confer our diagnose of *Camacolaimoides* De Coninck & Schuurmans Stekhoven.

The following species of *Camacolaimus* were described :

1. *Camacolaimus australis* ALLGÉN 1932b, p. 125, fig. 17a-c.
2. *Camacolaimus bathycola* FILIPJEV 1922a, p. 111, pl. I, fig. 8a-b = *Acontiolaimus bathycola* (FILIPJEV) 1922.

3. *Camacolaimus dolichocercus* FILIPIJEV 1922a, p. 112, pl. I, fig. 9a-c = *Acontiolaimus dolichocercus* (FILIPIJEV) 1922.
4. *Camacolaimus exilis* (COBB) 1920, p. 314, n° 96 :
syn. *Ypsilon exile* COBB 1920.
5. *Camacolaimus longicauda* DE MAN 1922a, p. 124, and 1922b, p. 225, fig. 11a-c.
6. *Camacolaimus praedator* DE MAN 1922a, p. 125 and 1922b, p. 225, fig. 12a-b = *Camacolaimoides praedator* (DE MAN) (see below).
7. *Camacolaimus tardus* DE MAN 1889a, p. 8 and 1889b, p. 3, pl. V, fig. 2-2e.
8. *Camacolaimus zostericola* (FILIPIJEV) 1918-1921, p. 187, pl. VI, fig. 36 = *Acontiolaimus zostericola* FILIPIJEV 1918.

Doubtful species :

9. *Camacolaimus propinquus* ALLGÉN 1929b, p. 446, fig. 11a-d, may be a synonym of *Camacolaimus longicauda* DE MAN; needs further examination.

KEY TO THE SPECIES OF CAMACOLAIMUS

- I. Cephalic setae very short, $1/7 \times$ cephalic diameter :
 - A. Tail 2,5-3 anal diameters long. Ventral gland posterior to the oesophagus :
Camacolaimus tardus DE MAN.
 - AA. Tail 4 anal diameters long. Ventral gland opposite to the base of the oesophagus :
Camacolaimus australis ALLGÉN.
- II. Cephalic setae $1 \times$ cephalic diameter or longer :
 - a. Tail 5-6 anal diameters long :
Camacolaimus longicauda DE MAN.
 - aa. Tail 2,5 anal diameters long :
Camacolaimus exilis (COBB).

41. *Camacolaimus longicauda* DE MAN 1922.

Fig. 96-99.

REFERENCES :

- DE MAN 1922a, p. 124.
 DE MAN 1922b, p. 225, fig. 11a-c.
 2 ♀ ♀ from Heyst-Zeebrugge, 2.IX.1931.
 1 ♂ and 1 ♀ from Oostende, sand, 28.XII.1931.

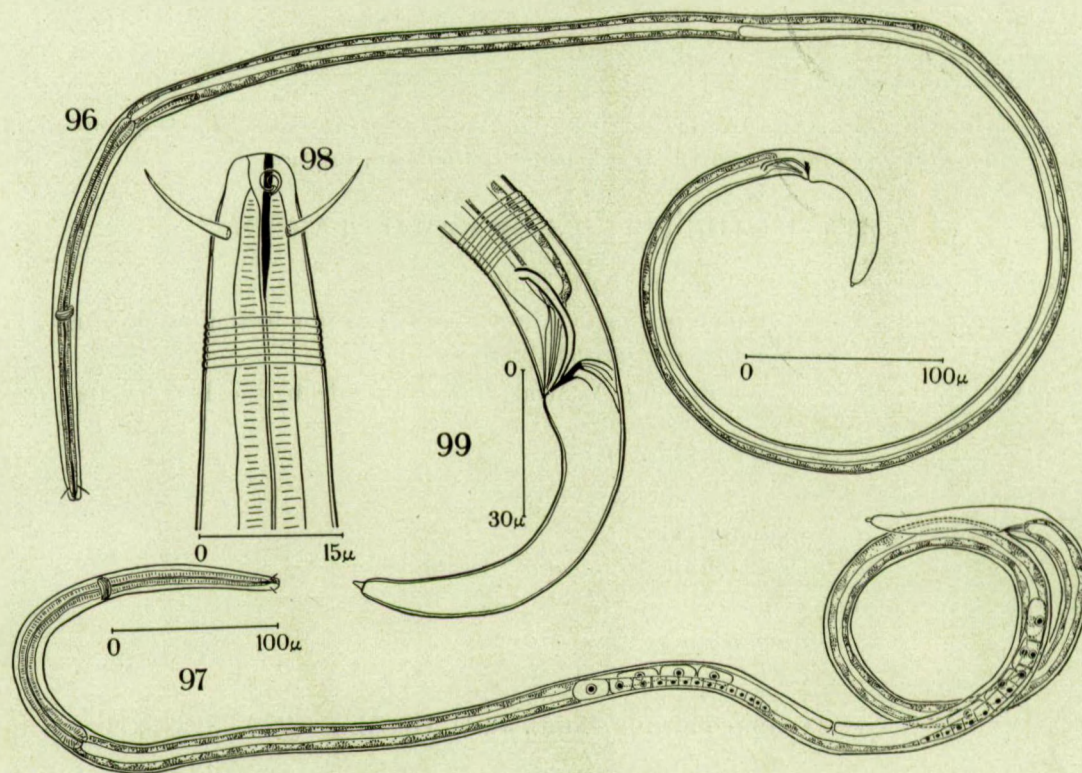
DIMENSIONS :

♂ L. : 1,400 mm.; α : 87,4; β : 6,8; γ : 17,9.									
0	7	100	203	273	M	1320			
7,8		12,5		14	16	1,4 mm.			
♀ L. : 1,430 mm.; α : 72,7; β : 6 ; γ : 17,7; V. : 49,3 %.									
0	?	100	237	?	?	703	758	884	1340
7,1		17	18,5	19		15		1,43 mm.	

Body filiform, cylindrical. Cuticle very finely ringed, 12-14 rings on 10μ , bare.

Amphids spiral-shaped, 1 winding, $2,2\mu$ in diameter, $1/3 \times$ corresponding body width.

Head end bluntly conical, $6,7\mu$ high, reckoned from the base of the cephalic setae. Length of the head = $0,77 \times$ base (at the implantation of the setae). 4 cephalic setae of 10μ = $1,2 \times$ cephalic diameter long.



Camacolaimus longicauda DE MAN.

- 96. General view of a male.
- 97. General view of a female.
- 98. Head end of a male.
- 99. Spicular apparatus and tail of a male.

Buccal cavity irregular funnel-shaped, with a strong dorsal spear-shaped cuticularisation which is 15μ long or $2/27 \times$ oesophageal length.

Oesophagus gradually broadening towards the posterior end.

Nerving at or in front of the middle of the oesophageal length.

Ventral gland long, just posterior to the oesophagus. Excretory pore not observed.

Female genital tract paired, symmetrical; ovaries reflexed.

Spicula very slender, slightly curved, with at the proximal end a swollen nod, pointing ventrad. Apex sharply pointed. Chord 26,9 μ or 1,66 anal diameters long. Gubernaculum minute, 6,9 μ long; median portion linear, with lateral alae.

Tail in both sexes almost cylindrical, in the male 5 anal diameters, in the female 6 anal diameters long, with a conical outlet for the spinneret glands.

GEOGRAPHICAL DISTRIBUTION : North Sea and Baltic.

GENUS CAMACOLAIMOIDES nov. gen.

Syn. : *Camacolaimus* DE MAN ex parte.

This new genus, closely related to *Acontiolaimus* and *Camacolaimus* is characterised by the fact that the dorsal spear of the *Camacolaimidae* has almost completely lost its intimate connection with the buccal and oesophageal wall and has become a needle-shaped onchium. There is a crown of 4 cephalic papillae (absent in *Camacolaimus*) and a crown of 4 cephalic setae, homologous with those of *Camacolaimus*. Amphids spiral-shaped. Genital armature of the male like in *Camacolaimus*.

42. Type species : *Camacolaimoides praedator* (DE MAN) 1922.

Syn. : *Camacolaimus praedator* DE MAN 1922.

REFERENCES :

DE MAN 1922a, p. 125.

DE MAN 1922b, p. 225, fig. 12a-b.

IV. — FAMILY HALAPHANOLAIMIDAE

GENUS DERMATOLAIMUS STEINER 1916.

Until now 4 species of this genus were described :

1. *Dermatolaimus ditlevseni* STEINER 1916, pp. 604-606, pl. XXVII, fig. 21a-d.
2. *Dermatolaimus elegans* SCHUURMANS STEKHOVEN & DE CONINCK 1933a, pp. 7-8, pl. II, fig. 3-5.
3. *Dermatolaimus steineri* FILIPJEV 1922a, pp. 109-110, pl. I, fig. 7a-b.
4. *Dermatolaimus trichodes* KREIS 1929, pp. 42-43, pl. I, fig. 12a-c, pl. III, fig. 12d.

KEY TO THE SPECIES

- I. Amphidial diameter about 0,5 \times corresponding body diameter :
 - A. Tail somewhat swollen at the end, bluntly rounded :
Dermatolaimus trichodes KREIS.
 - AA. Tail not swollen at the end :
Dermatolaimus steineri FILIPJEV.

- II. Amphidial diameter about $0,33 \times$ corresponding body diameter, or less :
- a. Head long, $6/9 \times$ cephalic diameter at the base of the cephalic setae; a truncate cone :
- Dermatolaimus dittevseni* STEINER.
- aa. Head short, $4/9 \times$ cephalic diameter at the base of the cephalic setae :
- Dermatolaimus elegans* SCHUURMANS STEKHOVEN & DE CONINCK 1933.

43. *Dermatolaimus elegans* SCHUURMANS STEKHOVEN & DE CONINCK 1933.

REFERENCES :

SCHUURMANS STEKHOVEN & DE CONINCK 1933a, pp. 7-8, pl. II, fig. 3-5.
1 ♀ from Heyst-Zeebrugge.

Remark. — When one compares the different species of the genus *Dermatolaimus*, one could wonder why we did not use the difference in length of the buccal cavity in the different species as a specific characteristic in the key.

We did not do that because the data in the literature about this feature do not seem to be absolutely reliable, since between the walls of the buccal cavity and those of the oesophagus there is no sharp demarcation, by which the definition of the length of the buccal cavity remains more or less arbitrary.

GENUS HALAPHANOLAIMUS SOUTHERN 1914.

44. *Halaphanolaimus pellucidus* SOUTHERN 1914.

REFERENCES :

ALLGÉN 1928c, p. 285.
ALLGÉN 1925, p. 25.
SOUTHERN 1914, p. 11, pl. I, fig. 2a-f.
1 ♂ and 1 juv. from a break-water, harbour entrance Oostende, IX.1931; DE SAEDELEER.

It is questionable if *Halaphanolaimus longisetosus* Allgén 1928c, p. 287, fig. 2a-b, belongs to this genus.

GEOGRAPHICAL DISTRIBUTION : Atlantic, North Sea.

GENUS LEPTOLAIMUS DE MAN 1876.

From this genus, until now only 2 species are known :

1. *Leptolaimus papilliger* DE MAN 1876, pp. 169-171, pl. X, fig. 42a-b, pl. XI, fig. 42c-e.
DE MAN 1884, pp. 81-82.
DE MAN 1922b, p. 226, fig. 13a-b.
2. *Leptolaimus setiger* SCHUURMANS STEKHOVEN & DE CONINCK 1933a, p. 8, pl. IV, fig. 1-2.

KEY TO THE SPECIES

- I. Head with a crown of 4 long submedian setae. Amphidial diameter larger than $0,5 \times$ corresponding body diameter, on $3 \times$ cephalic diameter from the anterior end :

Leptolaimus setiger SCHUURMANS STEKHOVEN & DE CONINCK.

- II. Head without cephalic setae, with a crown of labial papillae and a crown of 4 submedian cephalic papillae. Amphidial diameter $0,33 \times$ corresponding body diameter on $1,5 \times$ cephalic diameter from the anterior end :

Leptolaimus papilliger DE MAN.

The only species that was found along the Belgian Coast is :

45. *Leptolaimus setiger* SCHUURMANS STEKHOVEN & DE CONINCK 1933.

REFERENCES :

SCHUURMANS STEKHOVEN & DE CONINCK 1933a, p. 8, pl. IV, fig. 1-2.

1 juvenile female specimen from a puddle on the strand at Oostende, 18.XI.1931;
NaCl : $29,3 \text{ ‰}$.

Some corrections may be given to our original description. The length of the cephalic setae is 6μ instead of $4,6\mu$, but the relation to the cephalic diameter remains 1,66.

The length of the buccal cavity is 20μ . The cobbian formula in absolute measures becomes :

0	12,5	82,5	140	360	460	540	785	0,950 mm.
3,6	7,3		19		19		12,5	

For further information, confer the original description.

VI. — FAMILY TRIPYLOIDIDAE.

The representants of the genus *Cothonolaimus* Ditlevsen answer quite to Cobb's diagnose of his genus *Bathylaimus*. Both genera show a buccal cavity which is divided into 2 portions of unequal size. So we may go safe in saying that *Cothonolaimus* Ditlevsen is a synonym of *Bathylaimus* Cobb.

Some species ascribed to the genus *Bathylaimus* Cobb by Filipjev so, for instance, *B. poncticus* Filipjev and *B. profundus* Filipjev possess a voluminous buccal cavity which is not subdivided and lips of minor development as in the typical species of *Bathylaimus*. These species belong to another genus for which we propose the name *Parabathylaimus* nov. gen.

GENUS BATHYLAIMUS COBB 1894.

Syn. : *Cothonolaimus* DITLEVSEN 1919.
 nec *Bathylaimus* DITLEVSEN 1919.
 nec *Bathylaimus* FILIPJEV 1922 & 1925 ex parte.
 nec *Bathylaimus* VON DADAY 1905.

The following species were described until now :

1. *Bathylaimus assimilis* DE MAN 1922c, pp. 119-120, pl. I, fig. 2-2e.
2. *Bathylaimus australis* COBB 1894, pp. 409-410, fig. 9.
3. *Bathylaimus cobbi* FILIPJEV 1922a, pp. 106-107, pl. I, fig. 5a-b.
4. *Bathylaimus denticaudatus* ALLGÉN 1930a, pp. 60-61, fig. 3a-b = *Parabathylaimus ponticus* (FILIPJEV) 1922.
5. *Bathylaimus filicaudatus* SCHUURMANS STEKHOVEN & ADAM 1931, p. 27, pl. VI, fig. 1-3 :
 syn. *Cothonolaimus filicaudatus* SCHUURMANS STEKHOVEN & ADAM 1931.
6. *Bathylaimus gracilis* (DITLEVSEN) 1919, pp. 190-191, pl. IX, fig. 3; pl. X, fig. 4 :
 syn. *Cothonolaimus gracilis* DITLEVSEN 1919.
 = *Tripylloides septentrionalis* DE CONINCK & SCHUURMANS STEKHOVEN nom. nov.
7. *Bathylaimus inermis* (DITLEVSEN) 1919, p. 189, pl. IX, fig. 1, 6, 8, 9 :
 syn. *Cothonolaimus inermis* DITLEVSEN 1919.
8. *Bathylaimus longisetosus* (ALLGÉN) 1929c, pp. 16-17, fig. 2a-d :
 syn. *Cothonolaimus longisetosus* ALLGÉN 1929.
9. *Bathylaimus maculatus* VON DADAY 1905, p. 59 = *Dadaya maculata* MICOLETZKY 1925.
10. *Bathylaimus macramphis* SCHUURMANS STEKHOVEN & DE CONINCK 1933a, pp. 1-2, pl. I, fig. 1-3.
11. *Bathylaimus mirabilis* HOFMÄNNER & MENZEL 1905, p. 162, pl. V, fig. 13-14 = *Dadaya mirabilis* MICOLETZKY 1925.
12. *Bathylaimus paralongisetosus* SCHUURMANS STEKHOVEN & DE CONINCK 1933a, pp. 2-3, pl. Ibis, fig. 4-6.
13. *Bathylaimus ponticus* FILIPJEV 1922a, pp. 107-108, pl. I, fig. 6a-b = *Parabathylaimus ponticus* (FILIPJEV) 1922 :
 syn. *Bathylaimus denticaudatus* ALLGÉN 1930.
14. *Bathylaimus profundus* FILIPJEV 1925, p. 198, pl. V, fig. 74a-b = *Parabathylaimus profundus* (FILIPJEV) 1925.
15. *Bathylaimus sabulicolus* (SCHULZ) 1932, p. 364, fig. 17 :
 syn. *Cothonolaimus sabulicolus* SCHULZ 1932.
 = *Bathylaimus inermis* (DITLEVSEN) 1919.
16. *Bathylaimus septentrionalis* (FILIPJEV) 1925, p. 197, pl. V, fig. 73a-b :
 syn. *Cothonolaimus septentrionalis* FILIPJEV 1925.
Cothonolaimus similis ALLGÉN 1931.
17. *Bathylaimus similis* (ALLGÉN) 1931, pp. 231-233, fig. 6a-c :
 syn. *Cothonolaimus similis* ALLGÉN 1931.
 = *Bathylaimus septentrionalis* (FILIPJEV) 1925.
18. *Bathylaimus stenolaimus* SCHUURMANS STEKHOVEN & DE CONINCK 1933a, p. 4, pl. II, fig. 1-2.
19. *Bathylaimus tenuis* (KREIS) 1924, p. 7, pl. I, fig. 4a-b :
 syn. *Cothonolaimus tenuis* KREIS 1924.
 = *Sphaerolaimus tenuis* (KREIS) 1924

KEY TO THE TRUE SPECIES OF THE GENUS BATHYLAIMUS

(Foregoing list, n° 1-3, 5, 7-10, 14 & 16.)

- I. Tail greatly filiform :
- A. Tail gradually tapering :
Bathylaimus filicaudatus (SCHUURMANS STEKHOVEN & ADAM).
- AA. Tail narrowing abruptly on 1/3 of its length :
Bathylaimus cobbi FILIPJEV.
- II. Tail much more clumsy, with blunt apex :
- a. Amphidial diameter 0,44 × corresponding body diameter :
Bathylaimus paralongisetosus SCHUURMANS STEKHOVEN & DE CONINCK.
- aa. Amphidial diameter 0,35 × corresponding body diameter :
Bathylaimus macramphis SCHUURMANS STEKHOVEN & DE CONINCK.
- aaa. Amphidial diameter 0,25 × corresponding body diameter or less :
- B. Lips with setiform papillae, 0,11-0,143 × length of the longer cephalic setae :
Bathylaimus septentrionalis (FILIPJEV).
- BB. Lips with distinct setae :
- b. Amphids situated distinctly behind the buccal cavity :
Bathylaimus stenolaimus SCHUURMANS STEKHOVEN & DE CONINCK.
- bb. Amphids situated opposite to the posterior half of the first portion of the buccal cavity :
- c. Second portion of the buccal cavity without ? teeth :
Bathylaimus australis COBB.
- cc. Second portion of the buccal cavity with teeth :
Bathylaimus assimilis DE MAN.
- bbb. Amphids situated opposite to the second portion of the buccal cavity or opposite to the limit between this portion and the oesophagus :
- d. Tail of the male club-shaped; adults longer than 2 mm. :
Bathylaimus inermis (DITLEVSEN).
- dd. Tail of the male digitiform. Adults shorter than 1,5 mm. :
Bathylaimus longisetosus (ALLGÉN).

46. *Bathylaimus assimilis* DE MAN 1922.

Fig. 100-109.

REFERENCES :

- DE MAN 1922c, pp. 119-120, pl. I, fig. 2-2e.
 79 ♂♂, 168 ♀♀ and 25 juv. from 't Zwyn, between sand and organic detritus, 28.XII.1931;
 NaCl : 21 ‰. 62,4 % of the nema-population of this locality.

DIMENSIONS :

♂ L. : 2,115 mm.; α : 44,5; β : 5,23; γ : 17,8.

33,25	47,5	?	405	?	M	1995	2,155 mm.
28,5			42,75		47,75	42,75	

♂ L. : 2,200 mm.; α : 42,4; β : 6,02; γ : 17,6.

36,5	50	?	365	?	M	2075		
28,8			52		52	36,5	17,25	2,2 mm.

♀ L. : 1,900 mm.; α : 33,3; β : 5,33; γ : 14,8; V. : 48,7 %.

38	47,5	125	355	785	925	1075	1770	
28,5			52,25		57		38	14,25
								1,9 mm.

♀ L. : 2,075 mm.; α : 30,8; β : 5,4 ; γ : 12,7; V. : 51,8 %.

38,4	52	125	384	900	1075	1275	1910	
20,7			65,3		67,2		46,2	17,2
								2,075 mm.

Habitus : Body strong, almost cylindrical, inconspicuously tapering at both ends.

Cuticle smooth, with scanty, minute hairs.

Amphids spiral-shaped, and not circular like De Man depicted them (cf. his fig. 2, pl. V). Amphidial diameter in a male $7,5\mu$ or $2,9 \times$ corresponding body diameter; opposite to the posterior half of the first portion of the buccal cavity.

Head rounded, with 3 voluminous lips, each with 2 labial setae, 6μ long in the male, $4,8\mu$ long in the female; a crown of 10 cephalic setae in both sexes; the 6 longer ones reach $23,3\mu$ or $0,81 \times$ corresponding cephalic diameter in the male, $20,2\mu$ or $0,9 \times$ corresponding cephalic diameter in the female; the shorter submedian setae are respectively 10μ and $7,7\mu$ long.

Buccal cavity subdivided, spacious, more or less 50μ long; first division wide, toothless, second division much smaller, $0,4 \times$ the width of the first division, with a least 2 subequal teeth (De Man depicts 2 pairs of 2 teeth each).

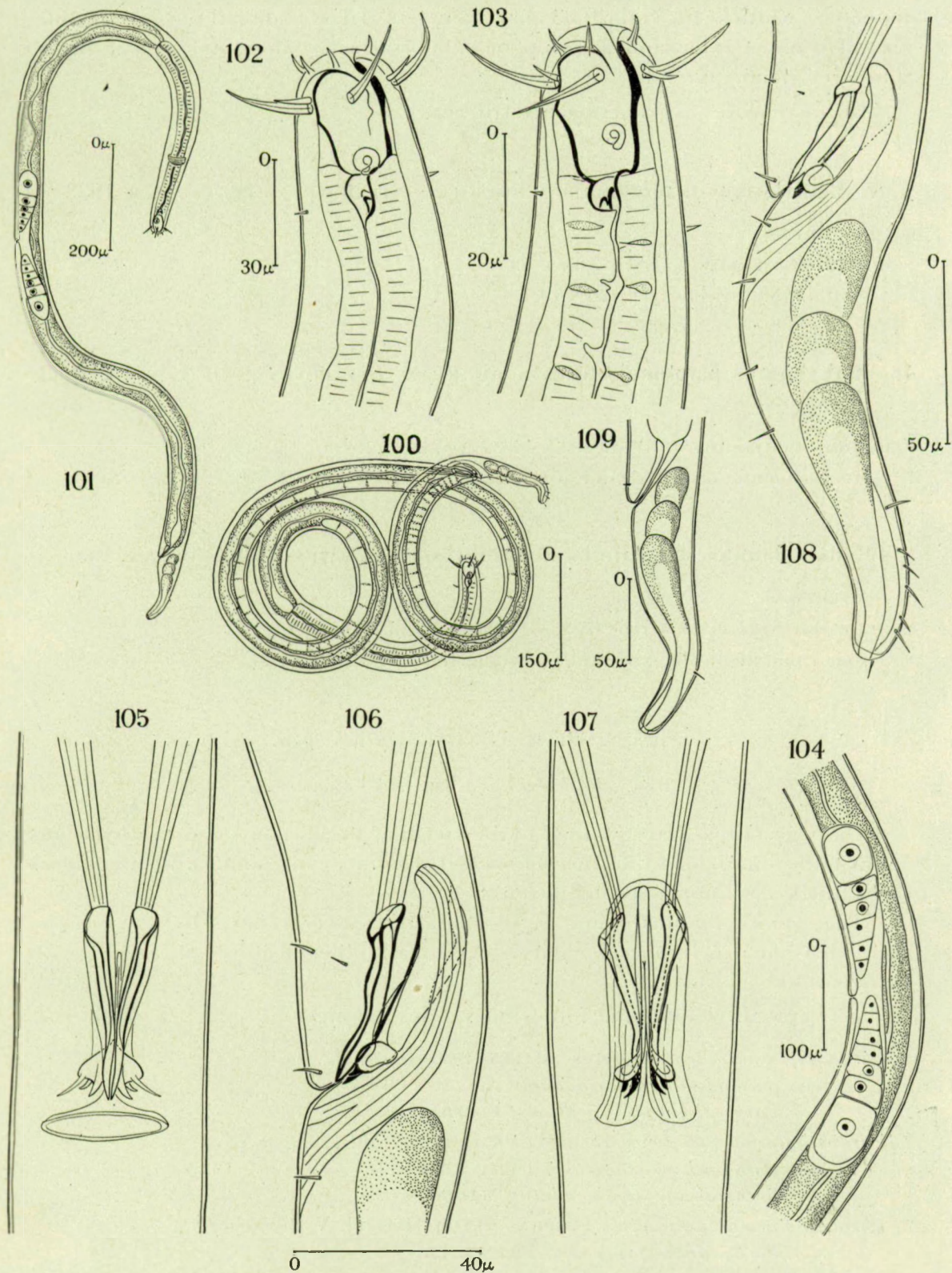
Oesophagus cylindrical. *Nerving* on $1/3$ of the oesophageal length.

$$\frac{\text{Length of portion I}}{\text{Length of portion II}} = \frac{2,6 - 4}{1}$$

Female genital tract paired, symmetrical, ovaries reflexed.

Testis very long, showing the same regular division as depicted by Cobb. *Spicula* strong, 45μ long = $1,1$ anal diameter, swollen at their proximal end, pointed at their distal end, with longitudinal median strengthenings. *Gubernaculum* very intricate, showing striking resemblances with that of *Cyatholaimus* and *Paracanthonus*, consisting of 2 large, median, soldered pieces, bearing at their distal end a lateral expansion with 2 teeth pointing in ventral direction.

Tail elongate, conical, with bluntly rounded apex. Male tail $3,5$ anal diameters long; width at the end $0,33 \times$ anal diameter. Female tail of almost the same shape, last $1/3$ cylindrical, not swollen at the end; length : $3,9$ anal



Bathylaimus assimilis DE MAN.

- | | |
|---|--|
| 100. General view of a male. | 105. Spicular apparatus of a male in ventral view. |
| 101. General view of a female. | 106. Id. in lateral view. |
| 102. Head end of a male. | 107. Id. in dorsal view. |
| 103. Head end of a young female. | 108. Spicular apparatus and tail of a male. |
| 104. Genital apparatus of a young female. | 109. Tail of a female. |

diameters; width at the end : 0,33 anal diameters. The male tail possesses 2 sub-ventral rows of setae and a group of subdorsal setae along the apical third. Spinneret glands present.

GEOGRAPHICAL DISTRIBUTION : North Sea.

47. *Bathylaimus macramphis* SCHUURMANS STEKHOVEN & DE CONINCK 1933.

REFERENCES :

SCHUURMANS STEKHOVEN & DE CONINCK 1933a, pp. 1-2, pl. I, fig. 1-3.
3 ♂♂ from Heyst-Zeebrugge, 2.IX.1931.

48. *Bathylaimus paralongisetosus* SCHUURMANS STEKHOVEN & DE CONINCK 1933.

REFERENCES :

SCHUURMANS STEKHOVEN & DE CONINCK 1933a, pp. 2-3, pl. Ibis, fig. 4-6.
1 ♂ from a puddle on the strand at Oostende, 18.XI.1931; NaCl : 29,3 ‰.

49. *Bathylaimus stenolaimus* SCHUURMANS STEKHOVEN & DE CONINCK 1933.

REFERENCES :

SCHUURMANS STEKHOVEN & DE CONINCK 1933a, p. 4, pl. II, fig. 1-2.
1 ♂ from a puddle on the strand at Oostende, 18-XI-1931; NaCl : 29,3 ‰.

GENUS PARABATHYLAIMUS nov. gen.

Syn. : *Bathylaimus* COBB 1894 ex parte.

On page 115 we have pointed to the fact that the former genus *Bathylaimus* ought to be subdivided into the genera *Bathylaimus* Cobb and *Parabathylaimus* De Coninck & Schuurmans Stekhoven.

The genus *Parabathylaimus* is characterised especially by its simple, undivided, unarmed buccal cavity. As to all other features it agrees with *Bathylaimus*.

To *Parabathylaimus* the following species belong :

1. *Parabathylaimus denticaudatus* (ALLGÉN) 1930, p. 60, fig. 3a-b :
syn. *Bathylaimus denticaudatus* ALLGÉN 1930.
= *Parabathylaimus ponticus* (FILIPJEV) 1922.
2. *Parabathylaimus ponticus* (FILIPJEV) 1922a, p. 107, pl. I, fig. 6a-h :
syn. *Bathylaimus ponticus* FILIPJEV 1922.
Bathylaimus denticaudatus ALLGÉN 1930.
3. *Parabathylaimus profundus* (FILIPJEV) 1925, p. 198, pl. V, fig. 74a-b :
syn. *Bathylaimus profundus* FILIPJEV 1925.

GENUS TRIPYLOIDES DE MAN 1886.

Syn. : *Tripyla* BUETSCHLI 1874 nec BASTIAN 1865.

Cothonolaimus DITLEVSEN 1919 ex parte.

Tripyloides De Man embraces the following species :

1. *Tripyloides gracilis* (DITLEVSEN) 1919, p. 190, pl. IX, fig. 3; pl. X, fig. 4 :
syn. *Cothonolaimus gracilis* DITLEVSEN 1919.
Tripyloides septentrionalis DE CONINCK & SCHUURMANS STEKHOVEN nom. nov.
2. *Tripyloides marinus* (BUETSCHLI) 1874, p. 33, pl. III, fig. 12a-d :
syn. *Tripyla marina* BUETSCHLI 1874.
Tripyloides vulgaris DE MAN 1886.
3. *Tripyloides omblaica* MICOLETZKY 1923b, p. 257.
4. *Tripyloides septentrionalis* nom. nov. :
syn. *Tripyloides marinus* DE MAN 1922b, p. 229, fig. 18.
Cothonolaimus gracilis DITLEVSEN 1919.
5. *Tripyloides vulgaris* DE MAN 1886, pp. 61-66, pl. XI, fig. 1-11 = *Tripyloides marinus* (BUETSCHLI) 1874.

DOUBTFUL SPECIES

6. *Tripyloides demani* FILIPJEV 1918, p. 181, pl. VI, fig. 35.

KEY TO THE TRUE SPECIES

- I. Amphids $0,5 \times$ corresponding body diameter :
Tripyloides omblaica MICOLETZKY.
- II. Amphids $0,33 \times$ corresponding body diameter, or less :
 - A. Apart from the vestibulum 4 divisions of the buccal cavity, the most caudal one with distinct teeth :
Tripyloides marinus (BUETSCHLI).
 - AA. Buccal cavity with 3 indistinct divisions, the most caudal one without distinct teeth :
Tripyloides septentrionalis DE CONINCK & SCHUURMANS STEKHOVEN.

50. *Tripyloides marinus* (BUETSCHLI) 1874.

Fig. 110-112.

Syn. : *Tripyla marina* BUETSCHLI 1874.

Tripyloides vulgaris DE MAN 1886.

REFERENCES ·

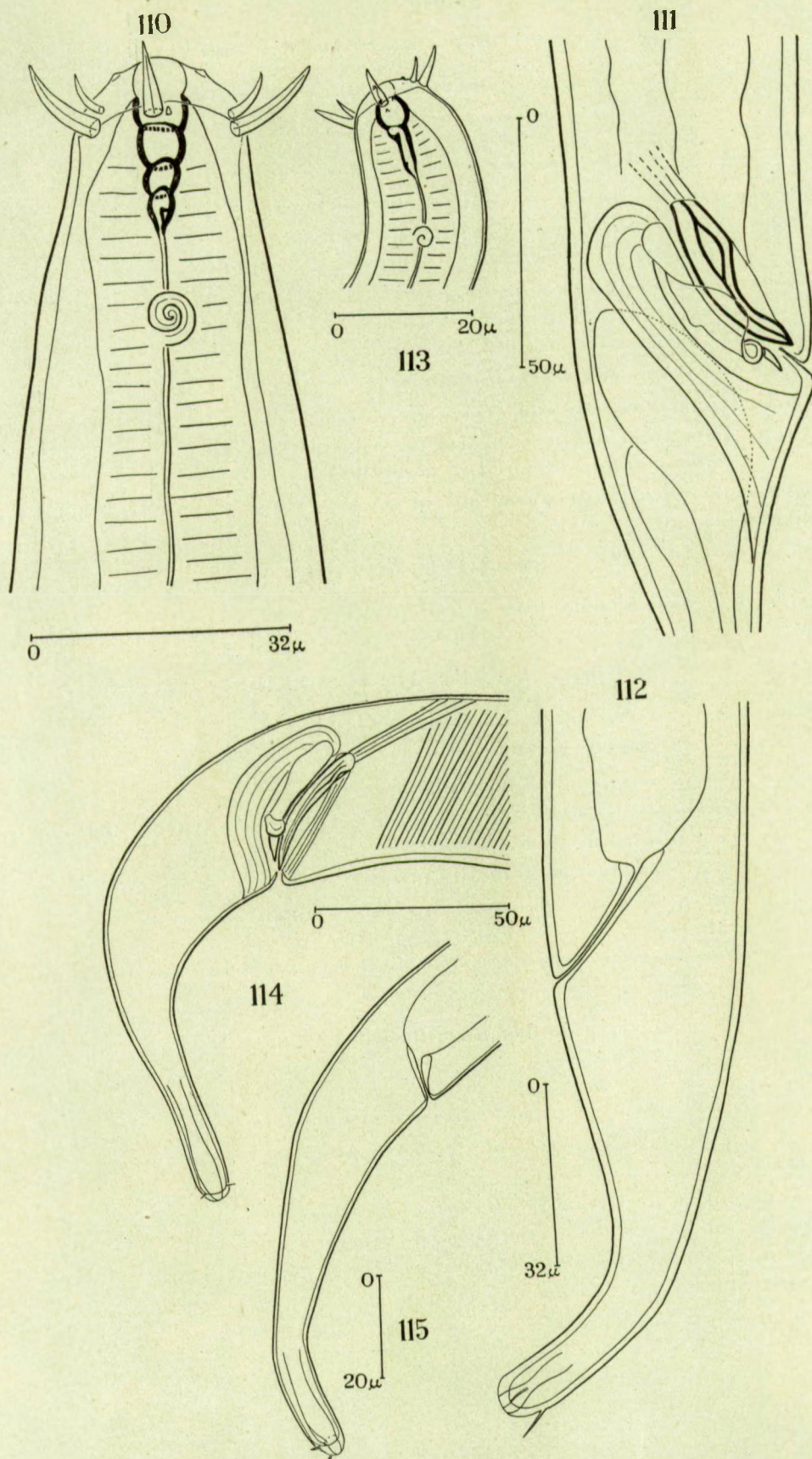
BUETSCHLI 1874, p. 33, pl. III, fig. 12a-d, *Tripyla marina*.

DE MAN 1886, p. 61, pl. XI, fig. 1-11, *Tripyloides vulgaris*.

SSAVELJEV 1912, p. 119, *Tripyloides vulgaris*.

? SCHNEIDER, G. 1926b, p. 12, *Tripyloides marinus*.

3 ♂♂, 1 ♀ and 2 juv. on a break-water, Oostende, 18.XI.1931; NaCl : 30,77 ‰.



Tripylodes marinus (BUETSCHLI).

110. Head end of a male.
 111. Spicular apparatus of a male.
 112. Tail of a female.

Tripylodes septentrionalis DE CONINCK
 & SCHUURMANS STEKHOVEN.

113. Head end of a female.
 114. Spicular apparatus and tail of a male.
 115. Tail of a female.

DIMENSIONS : ♂. L. : 2,380 mm.; α : 45 ; β : 7,7 ; γ : 19.

♀. L. : 1,945 mm.; α : 33,75; β : 7,71; γ : 18,6; V.: 53,3 %.

We will give only some additional notes.

Amphids a twice looped spiral, 0,2 × corresponding body diameter, on 1,3 × cephalic diameter, behind the buccal cavity.

Head rounded, with a crown of 6 labial papillae and 10 stout cephalic setae, the longer ones being 0,6 × cephalic diameter long, the shorter submedian ones 0,35 × cephalic diameter.

Buccal cavity 1 × cephalic diameter deep, with strongly cuticularised walls, divided by distinct transversal strengthenings into 4 successive portions; the last of these possesses 2 distinct subventral teeth.

Male genital armature. Spicula rather short and strong, only slightly curved, distally pointed, proximally with an inconspicuous swelling, strengthened by longitudinal cuticularisations. Their length equals that of the gubernaculum and reaches 0,8 × anal diameter. Gubernaculum typical with a large median piece, bearing lateral expansions at its distal end. Here one finds a strong prong that points to the ventral side.

Tail almost of equal size in both sexes. Basal 2/3 conical, apical 1/3 cylindrical. In a female it is 2,8 × anal diameters long; the width at the apex 0,275 × anal diameter.

GEOGRAPHICAL DISTRIBUTION : North Sea and Baltic.

Remarks. — A conscientious comparison of the data of Buetschli and De Man brought us to the conviction that *Tr. marinus* (Buetschli) and *Tr. vulgaris* De Man are synonymous, whilst *Tr. marinus* De Man is not identical with *Tr. marinus* (Buetschli). Therefore we brought *Tr. vulgaris* De Man to *Tr. marinus* Buetschli, and we propose to name *Tr. marinus* De Man : *Tripyloides septentrionalis* nom. nov.

51. *Tripyloides septentrionalis* nom. nov.

Fig. 113-115.

Syn. : *Tripyloides marinus* DE MAN 1922 nec BUETSCHLI.

Cothonotaimus gracilis DITLEVSEN 1919.

REFERENCES :

- ALLGÉN 1927a, p. 52, *Tr. marinus*.
 ALLGÉN 1929c, p. 14, *Tr. marinus*.
 ALLGÉN 1931, p. 230, *Coth. gracilis*.
 DITLEVSEN 1919, p. 190, pl. IX, fig. 3; pl. X, fig. 4, *Coth. gracilis*.
 FILIPJEV 1930, p. 9, *Tr. marinus*.
 DE MAN 1922b, p. 229, fig. 18, *Tr. marinus*.
 SCHNEIDER, G. 1906, p. 14, pl. I, fig. 8, *Tr. marinus*.
 SCHUURMANS STEKHOVEN, 1931, p. 618, *Tr. marinus*.
 SCHUURMANS STEKHOVEN & ADAM 1931, p. 26, ? *Tr. marinus*.

1 ♀ and 2 juv. from 't Zwyn, on *Enteromorpha* between poles, 28.XII.1931; NaCl : 27,2 ‰.
 4 ♂♂, 4 ♀♀ and 3 juv. from 't Zwyn, sand and organic detritus, 28.XII.1931;
 NaCl : 21 ‰.

DIMENSIONS :

♂ L. : 1,51 mm.; α : 24,2; β : 7; γ : 15,7.

0	?	120	216	?	M	1415	1,510 mm.
28,8			48		62,5	43	

♀ L. : 1,31 mm.; α : 34 ; β : 7; γ : 15,1; V. : 55 %.

0	14,4	?	192	?	720	?	1225	1,310 mm.
19,2			33,6		38,4		28,8	

Cuticle with punctation of the inner layers like in *Ascolaimus* and *Odon-tophora*.

Amphids in a female 0,166 × corresponding body diameter, on 1,7 × cephalic diameter from the anterior end, 1 ½ windings; in a male 0,2 × corresponding body diameter on 1 × cephalic diameter from the anterior end.

Head, with 10 cephalic setae, the longer ones 0,33 × cephalic diameter in a male, 0,5 × cephalic diameter in a female.

Buccal cavity 1,1 × cephalic diameter long, with 3 divisions, with a small tooth in the anterior portion, and possibly also in both following divisions.

Nerving on 55 % of the oesophageal length.

Male genital armature. Spicula more feeble than in *Tripyloides marinus* (Buetschli), 1 anal diameter long, longer than the gubernaculum which is typical in shape and structure.

Tail in the male 3,3 anal diameters long, the width on the end 0,26 × anal diameter. In the female 4,4 anal diameters long, the width at the end 0,31 × anal diameter.

The tail is distinctly more slender than in *Tripyloides marinus* (Buetschli). Its last 1/3 is cylindrical like in the latter species, but its apex is more or less swollen and bears a couple of short bristles.

GEOGRAPHICAL DISTRIBUTION : North Sea and Baltic.

ORDER IV : MONHYSTEROIDEA

To this order, representants of the following families belong :

1. *Monhysteridae* = *Monhysterinae*.
2. *Sphaerolaimidae* = *Sphaerolaiminae*.
- ? 3. *Siphonolaimidae* = *Siphonolaiminae*.

We exclude from this order the :

1. *Comesomidae* = *Comesominae*, which are brought to the *Chromadoroidea*.
2. *Axonolaimidae* = *Axonolaiminae*, which are shifted to a new order, the *Araeolaimoidea*.
3. *Diplopeltidae* = *Diplopeltinae*, which are shifted to the same order as the *Axonolaimidae*.

Along the Belgian Coast, representants of the first 2 families occur.

I. FAMILY MONHYSTERIDAE.

GENUS THERISTUS BASTIAN 1865.

Syn. : *Monhystra* BASTIAN pro parte.

8 species of the Genus *Theristus* were found in the present material. They may be identified by means of the following Key.

KEY

- I. Head bluntly conical, sharply set off from the remainder of the body. Lips indistinct, more or less fused. Cephalic setae $0,5 \times$ cephalic diameter :
Theristus tenuispiculum (DITLEVSEN).
- II. Head with distinct lips, obtusely rounded, more or less continuous with the remainder of the body. Cephalic setae much longer :
 - A. Postamphidial cervical setae twice as long as the body diameter; tail elongate conical with blunt apex :
Theristus parasetosus (ALLGÉN).
 - AA. Postamphidial cervical setae shorter than $1,5 \times$ body diameter, tail more attenuated :
 - a. Spicula forked at the distal end :
 - B. Gubernaculum with a large dorsal apophysis. Numerous ± 1 body diameter long setae all over the body :
Theristus setosus (BUETSCHLI).
 - BB. Gubernaculum wanting. Body setae $0,5 \times$ body diameter :
Theristus acrilabiatus n. sp.
 - aa. Spicula pointed at the distal end :
 - b. Amphids more than $2,5$ cephalic diameters from the anterior end; body with numerous, 1 body diameter long, tender setae :
Theristus longisetosus SCHUURMANS STEKHOVEN & DE CONINCK.
 - bb. Amphids at about 1 cephalic diameter from the anterior end :
 - c. Spicula distinctly knobbed at the proximal end; gubernaculum with a small dorsal apophysis :
Theristus normandicus (DE MAN).

cc. Spicula not knobbed at the proximal end :

d. Tail elongate conical, gradually tapering till to the end. Gubernaculum with a large plate-like dorsal apophysis :

Theristus acer BASTIAN.

dd. Tail with a distal cylindrical portion. Gubernaculum calceolate, without a dorsal apophysis :

Theristus calceolatus n. sp.

52. *Theristus setosus* (BUETSCHLI) 1874.

Fig. 116-120.

Syn. · *Monhystera setosa* BUETSCHLI 1874.

REFERENCES :

- | | |
|--|--|
| ALLGÉN 1927a, p. 56. | KREIS 1929, p. 66, pl. VI, fig. 27a-b. |
| ALLGÉN 1929c, p. 27. | DE MAN 1888, p. 9, pl. I, fig. 5-5a. |
| ALLGÉN 1929a, p. 41. | DE MAN 1922b, p. 220, fig. 5a-b. |
| BUETSCHLI 1874, p. 29, pl. II, fig. 11a; | MICOLETZKY 1925, p. 230. |
| pl. III, fig. 11b. | SCHNEIDER, G. 1906, p. 11, pl. I, fig. 3a-c. |
| DITLEVSEN 1919, p. 151. | SCHNEIDER, G. 1926, p. 33. |
| FILIPJEV 1930, p. 44, fig. 31a-c. | SCHNEIDER, G. 1927, p. 23. |
| FILIPJEV 1930, p. 46, fig. 32a-b, var. | SCHNEIDER, W. 1924, p. 210, fig. 1b-c, 2a-b. |
| <i>izhorica</i> . | SKWARRA 1922, p. 111. |

3 ♂♂ and 3 ♀♀ from Heyst-Zeebrugge, 2.IX.1931.

1 ♂ from 't Zwyn, on *Enteromorpha* between poles, 28.XII.1931; NaCl : 27,2 ‰.

1 ♂ from Oostende, on a break-water, 18.XI.1931; NaCl : 30,77 ‰.

1 ♀ from Oostende, on a break-water, harbour entrance, IX.1931; DE SAEDELEER.

DIMENSIONS : ♂. L. : 1,520 mm.; α : 22,7; β : 4 ; γ : 6.

♀. L. : 1,570 mm.; α : 22 ; β : 4,1; γ : 6; V. : 66,6 %.

Body clumsy, confer fig. 116.

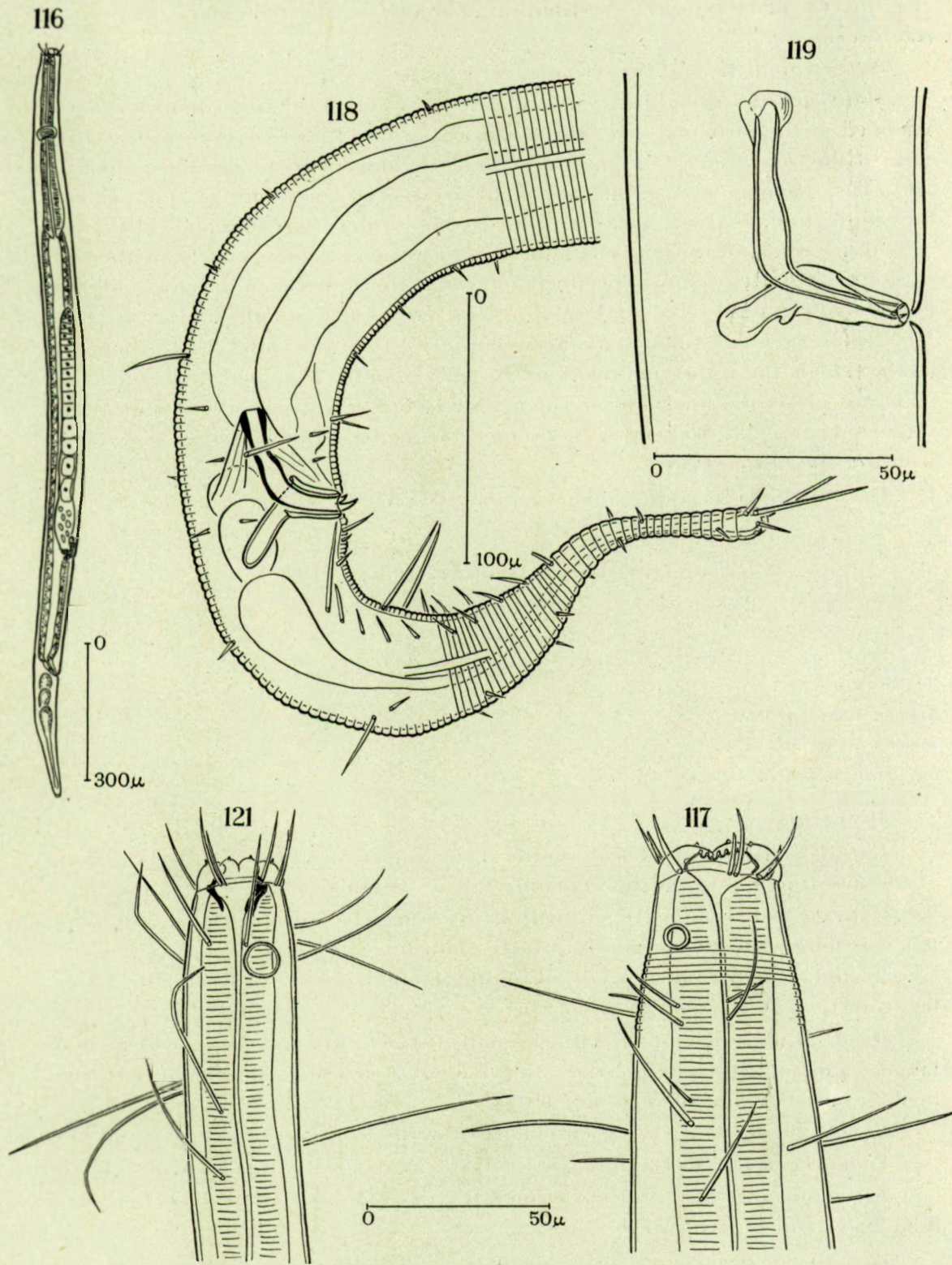
Cuticle transversely striated, covered with many setae of variable length, the longer ones reaching a length of 1 body diameter. In the male they may surpass this dimension a little.

Lateral fields very narrow, $1/20 \times$ corresponding body diameter.

Amphids in the male $0,23 \times$ corresponding body diameter, situated on $0,7 \times$ cephalic diameter from the anterior end. In the female they are $0,15 \times$ corresponding body diameter and situated on $0,9 \times$ cephalic diameter from the anterior end.

Head with 6 broad lips, crowned each by a minute labial papilla. Male with 12, female with 10 cephalic setae. Those of the male $0,5 \times$ those of the female $0,6 \times$ cephalic diameter long.

The shorter hairs reach a length of $0,33 \times$ cephalic diameter in both sexes.



Theristus setosus (BUETSCHLI).

116. General view of a female.
117. Head end of a female.

118. Spicular apparatus and tail of a male.
119. Spicular apparatus of a male.

Theristus parasetosus ALLGÉN.

121. Head end of a female.

Buccal cavity typical. Vestibulum characterised by irregular cuticularised reinforcements.

Nerving at 45 % of the œsophageal length.

Male genital armature. *Spicula* curved; chord 1 anal diameter long; knobbed at the proximal end, swollen near the middle and forked at the distal end. *Gubernaculum*, chord 0,75 anal diameter long, with a long dorsal apophysis. The shape as well as the size of the accessory pieces vary in relation with the angle under which they are observed. Confer fig. 118 and 119. This misled apparently Filipjev and induced him to make a new variety of this species: var. *izhoricus*, for a specimen in which the gubernaculum was observed under such an angle that it showed a very long dorsal apophysis.

Tail in the male 4,3 anal diameters long; width at the end 0,2 anal diameter. In the female the respective relations are 5,6 × and 0,2 × anal diameter. The male tail presents some long and many short bristles placed in subventral and subdorsal rows. Apical end with 2 long setae, being 4 times as long as the body width at the tail end.

GEOGRAPHICAL DISTRIBUTION : Channel, North Sea, Baltic.

53. *Theristus parasetosus* (ALLGÉN) 1928.

Fig. 121-122.

Syn. : *Monohystera parasetosa* ALLGÉN 1928.

REFERENCES :

ALLGÉN 1928c, p. 300.

ALLGÉN 1929a, p. 41.

1 ♀ from Heyst-Zeebrugge, littoral, 2.IX.1931.

DIMENSIONS : ♀. L. : 1,312 mm.; α : 28,1; β : 4,32; γ : 8,26; V. : 70 %.

Habitus admost cylindrical; width at the anterior end 0,7, at the beginning of the intestine 0,8, at the anal opening 0,9 × maximal width.

Cuticula transversely ringed, with many long setae towards the anterior end, twice as long as the corresponding body-diameter.

Amphids circular, 0,3 × corresponding body diameter, at 1 cephalic diameter from the anterior end.

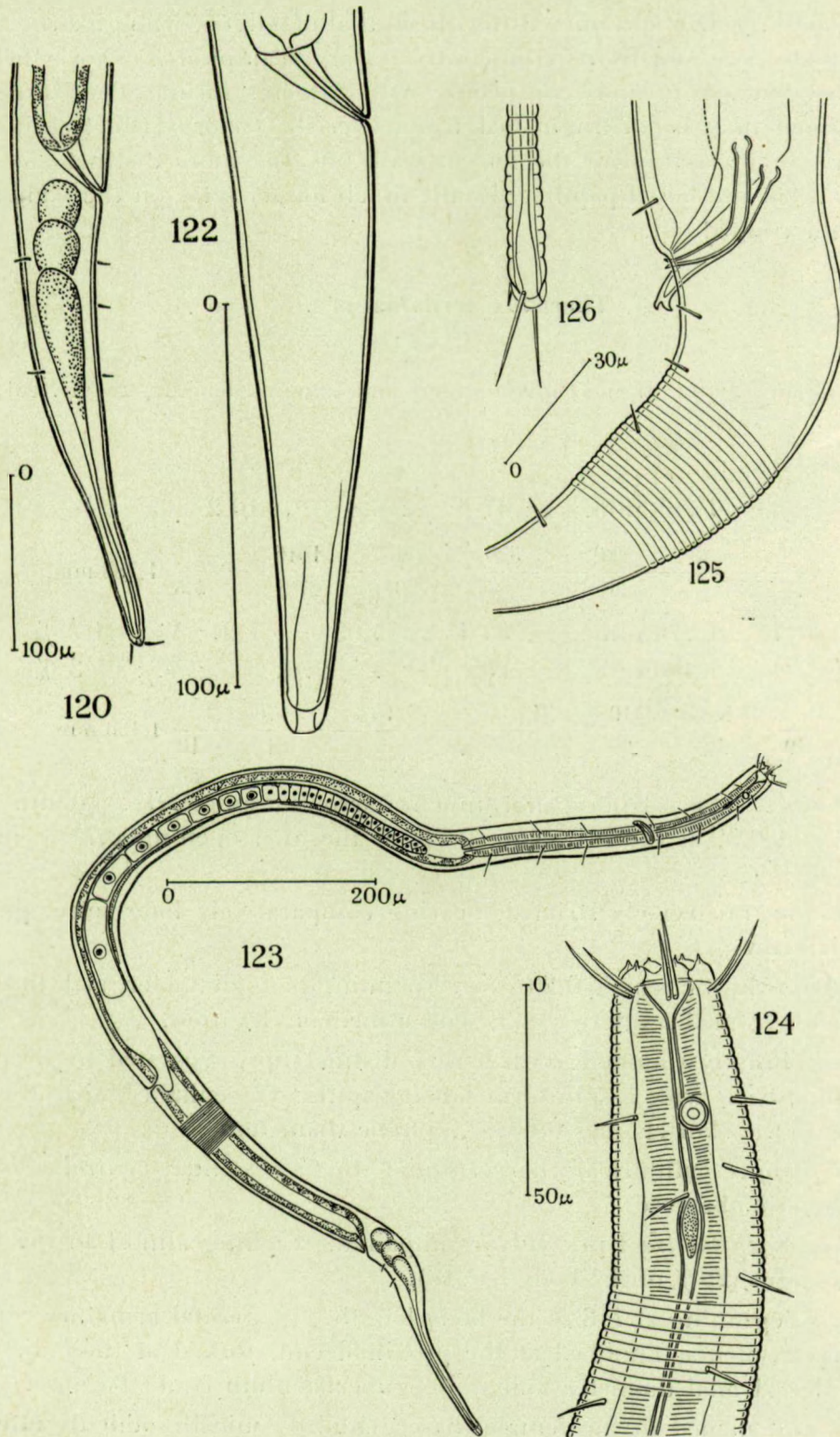
Head obtusely rounded, with 6 small distinct lips and high, conspicuous labial papillae; 10 cephalic setae, the 6 longer ones 0,9, the 4 shorter, submedian ones 0,6 × cephalic diameter.

Buccal cavity with strong cuticularised walls.

Female genital tract single, praevulvar. Vulva with small vulvar glands.

Tail conical, with obtusely rounded tip, 4,3 anal diameters long and 0,33 anal diameter wide at the tip.

GEOGRAPHICAL DISTRIBUTION : North Sea and Baltic.



Theristus setosus (BUETSCHLI).

120. Tail of a female.

Theristus parasetosus ALLGÉN.

122. Tail of a female.

Theristus acrilabiatu DE CONINCK & SCHUURMANS STEKHOVEN

123. General view of a female.

125. Spicular apparatus of a male.

124. Head end of a female.

126. Tip of tail of a male.

Remarks. — Our specimen differs from that of Allgén, who gives no figures, by its smaller size and by its comparatively larger amphids. Nevertheless we think that our specimen is conspecific with Allgén's form. *Theristus parasetosus* Allgén may be distinguished from *Theristus setosus* (Buetschli) by the stronger cuticularisation of the buccal walls, by the more distinct and longer cephalic setae and labial papillae, by the much longer setae on the body surface and by the conical tail.

54. *Theristus acrilabiatus* nov. spec.

Fig. 123-126.

1 ♂, 2 ♀♀ and 2 juv. from 't Zwyn, sand and organic detritus, 28.XII.1931; NaCl : 24 ‰.

DIMENSIONS :

♂ L. : 1,785 mm.; α : 47,6; β : 6,8 ; γ : 10,2.

?	260	590	M	1610		
15	30		30	27,5	5,5	1,785 mm.

♀ L. : 1,270 mm.; α : 33,4; β : 5,03; γ : 7,21; V. : 64,7 %.

♀ L. : 1,400 mm.; α : 29 ; β : 4,5 ; γ : 6 ; V. : 65,3 %.

	138	310	345		915	1170	
20	31	33		48	31	10	1,400 mm.

Habitus : Body slender, not much narrowed anteriorly. Width at the anterior end 0,5, at the nerving 0,71, at the anal opening 0,71 × maximal width.

Cuticula transversely striated, bearing comparatively long setae, placed in submedian rows.

Amphids in the female 0,20 × corresponding body diameter, at 1,45 × cephalic diameter from the anterior end, with a median elevation.

Head obtusely rounded, with 6 very distinct lips, separated by deep interlabial rims, each with a spiniform labial papilla; 12 cephalic hairs, the larger ones 0,9 × the shorter ones 0,66 × cephalic diameter.

Œsophagus cylindrical; *nerving* at 45 %. Neither *ventral gland* nor *excretory pore* observed.

Female genital tract praevulvar, unpaired, reaching almost to the base of the *oesophagus* (25 % of the body length).

Testis beginning at 1/3 of the body length. ♂ genital armature composed of 2 curved spicula, knobbed at the proximal end, forked at their distal end, more or less 1 anal diameter long. No gubernaculum could be observed.

Tail gun-shaped in the female; base cylindro-conical, suddenly attenuated at the end of the first 1/3; last half cylindrical, not swollen at the apex; 6 anal

diameters long; width at the apex $0,22 \times$ anal diameter. Male tail similar, with 2 long setae at the end, which are $2,6 \times$ as long as the width at tip of tail. Some short hairs along the subventral lines.

55. *Theristus normandicus* DE MAN 1890.

Fig. 127-129.

REFERENCES :

ALLGÉN 1929c, p. 28.

DE MAN 1922b, p. 222, fig. 7.

ALLGÉN 1931, p. 247.

SOUTHERN 1914, p. 13.

DE MAN 1890, p. 169, pl. II, fig. 1-1d.

1 juv. ♂ on a break-water Knokke-Zoute, 28.XII.1931; NaCl : $31,6 \text{ ‰}$.

3 ♂♂ from Heyst-Zeebrugge, 2.IX.1931.

1 ♀ on a break-water at Oostende, 31.XII.1931.

DIMENSIONS :

♂ L. : 0,970 mm.; α : 26,2; β : 5,1 ; γ : 6,06.

?	?	190	?	M	810	
15		30		37	30	

♂ L. : 1,340 mm.; α : 37,2; β : 6,53; γ : 8,2.

16	144	205	240	M	1177	
14,4		32,4		36	29	

♀ L. : 1,080 mm.; α : 28,1; β : 5 ; γ : 6,75; V. : 58 %.

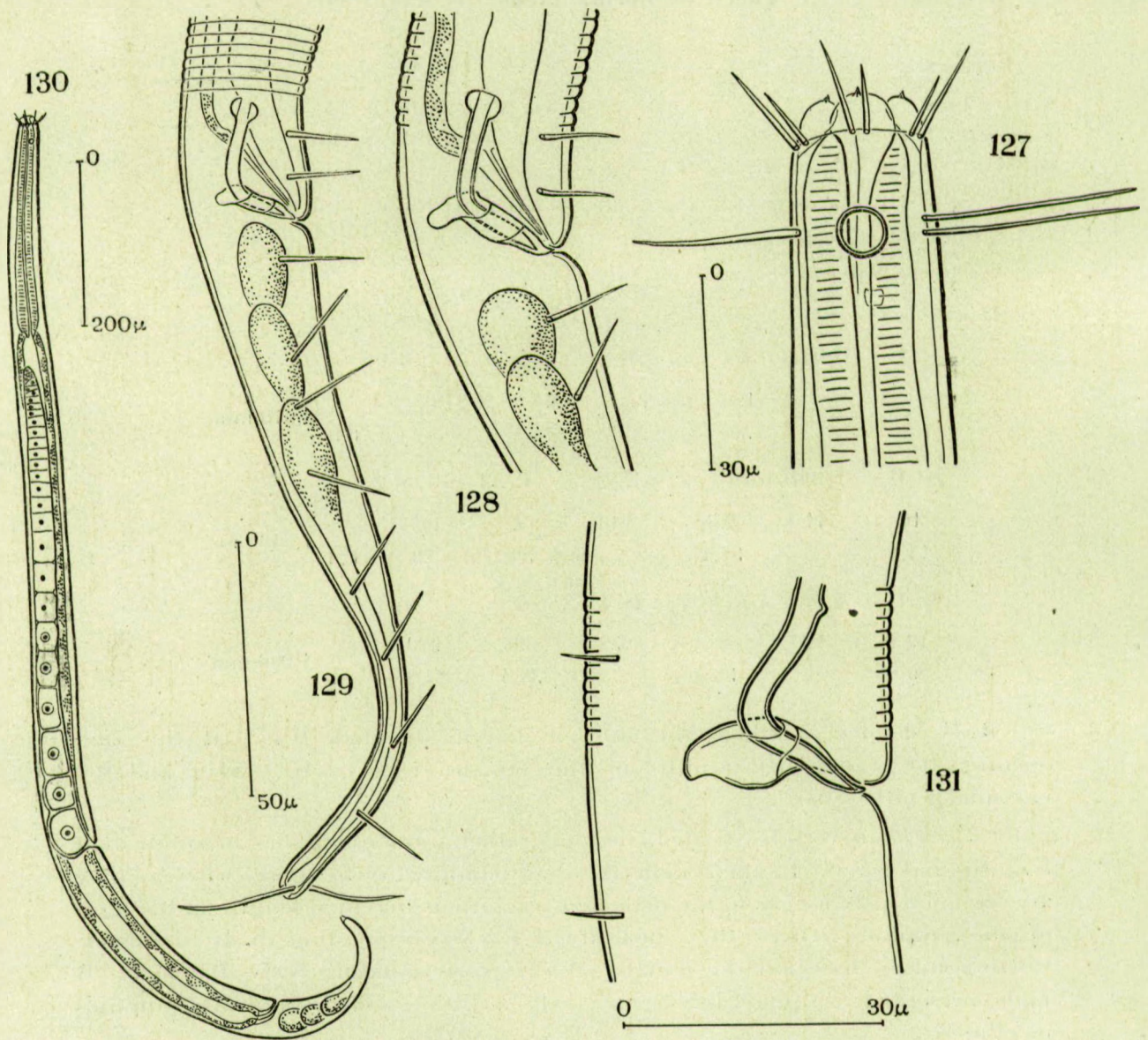
19,2	120	216	232	696	920	
20,8		35,2		38,4	27,2	

Body slender; width at the anterior end in the male $0,4 \times$ at the anal opening $0,8 \times$ maximal width, in the female respectively $0,54 \times$ and $0,7 \times$ maximal width.

Cuticle transversely striated, bearing rather numerous hairs in submedian longitudinal rows. In the female these are comparatively short, whereas they are conspicuously longer in the male and reach their maximal length on the level of the amphids where they measure $1,4 \times$ corresponding body diameter. Corresponding hairs on the female : $0,5 \times$ corresponding body diameter. A male presented a square refringent body a little caudad from the amphids (ocellus?).

Amphids circular, sometimes with a distinct median elevation, distinctly larger in the male than in the female. In the male their diameter is $0,35 \times$ corresponding body diameter, and they are situated at $0,9 \times$ cephalic diameter from the anterior end. In the female the diameter reaches $0,31 \times$ corresponding body diameter and the distance from the anterior end is $0,8 \times$ cephalic diameter.

Head rounded, with 6 spherical lips, beset with distinct labial papillae; 12 cephalic setae; in the male the longer measure $0,7 \times$, the shorter ones $0,45 \times$ cephalic diameter, whereas the respective relations in the female are $1 \times$ and $0,68 \times$ cephalic diameter.



Theristus normandicus (DE MAN).

127. Head end of a male.
128. Spicular apparatus of a male.
129. Spicular apparatus and tail of a male.

Theristus acer BASTIAN.

130. General view of a female.
131. Spicular apparatus of a male.

Buccal cavity typical. *Oesophagus* slightly broadening towards the base. *Nerving* at 55 % of the *oesophageal* length.

Female genital tract unpaired, prevulvar, reaching almost to the base of the *oesophagus*. The same may be said of the male *testis*.

Male genital armature composed of 2 curved spicula, conspicuously swollen at the proximal end and pointed at the distal end. Chord or spiculum 1,1 × anal diameter long. *Gubernaculum* 0,8 × anal diameter, surrounding the spicula like a ruffle, and bearing a small, blunt, dorsal apophysis.

Tail in the male gradually tapering, last 1/3 cylindrical, 6 anal diameters long, 0,23 × anal diameter wide at the apex, with subventral rows of conspicuously long setae, those at the tip 4,6 × the width at tip of tail. Female tail identical in shape, but without the conspicuously long setae. Some short bristles are found at the tip; the relations are : length 7,2 ×, width at the end 0,25 × anal diameter.

GEOGRAPHICAL DISTRIBUTION : Atlantic, Channel and North Sea.

56. *Theristus acer* BASTIAN 1865.

Fig. 130-131.

Syn. *Theristus velox* SCHUURMANS STEKHOVEN & ADAM nec BASTIAN.

Theristus velox STEINER 1916 nec BASTIAN.

REFERENCES :

- | | |
|---|---|
| ALLGÉN 1927a, p. 56. | DE MAN 1928, p. 97. |
| ALLGÉN 1928a, p. 291. | SCHUURMANS STEKHOVEN & ADAM 1931, p. 48,
pl. IX, fig. 13; pl. X, fig. 1-3, <i>Th. acer</i> . |
| ALLGÉN 1929c, p. 28. | SCHUURMANS STEKHOVEN & ADAM 1931, p. 47,
pl. X, fig. 4-5, <i>Th. velox</i> . |
| ALLGÉN 1929a, p. 41. | SOUTHERN 1914, p. 12. |
| ALLGÉN 1931, p. 246. | STEINER 1916, p. 645, pl. 17, fig. 42a, c;
pl. 34, fig. 42b, d, f, <i>Th. velox</i> . |
| BASTIAN 1865, p. 156, pl. XIII, fig. 187-188. | |
| DE MAN 1889b, p. 1, pl. V, fig. 1-1d. | |

1 ♂ from Heyst-Zeebrugge, littoral, 2.IX.1931.

9 ♂♂, 28 ♀♀ and 23 juv. on a break-water at Oostende, IX.1931, DE SAEDELEER; 14 % of the nemic fauna at this locality.

29 ♂♂, 48 ♀♀ and 83 juv. on a break-water at Oostende, 18.XI.1931; NaCl : 30,77 ‰; 43 % of the nemic fauna at this locality.

2 ♂♂ and 4 ♀♀ from Oostende, littoral, 18.XI.1931; NaCl : 29,3 ‰.

2 ♀♀ and 1 juv. on a break-water at Knokke-Zoute, 28.XII.1931; NaCl : 31,6 ‰.

9 ♂♂, 11 ♀♀ and 26 juv. in sand and organic detritus from 't Zwyn, 28.XII.1931; NaCl : 21 ‰; 7,7 % of the nemic fauna at this locality.

DIMENSIONS : ♂. L. : 1,370 mm.; α : 34,5; β : 5,06; γ : 8,4.
 ♀. L. : 1,320 mm.; α : 26,1; β : 5,22; γ : 7,8; V. : 64,5 %.
 ♀. L. : 1,680 mm.; α : 26,7; β : 5,35; γ : 8,9; V. : 68,2 %.
 ♀. L. : 1,500 mm.; α : 36 ; β : 6,66; γ : 7,5; V. : 64 %.

For *habitus* confer fig. 130.

The *spicula* are strongly curved, not knobbed at the proximal end, but here they present at the ventral side a little notch; distal end pointed. Gubernaculum embracing the *spicula* like a ruffle, presenting a large dorsal plate-like apophysis.

Remarks. — The figures of *Theristus acer* and *Theristus velox* given by Schuurmans Stekhoven & Adam are, according to our present experience, not quite correct. So for instance is the proximal portion of the *spicula* of *Th. acer* (pl. X, fig. 1) depicted too short, whereas the gubernaculum in pl. X, fig. 5 is somewhat distorted. We believe therefore that both mentioned species in reality are conspecific and ought to be brought to *Theristus acer* Bastian.

GEOGRAPHICAL DISTRIBUTION : Atlantic, Channel, North Sea and Baltic.

57. *Theristus calceolatus* nov. spec.

Fig. 132-136.

2 ♂♂, 3 ♀♀ and 5 juv. on a break-water at Oostende, 18.XI.1931; NaCl : 30,77 ‰.

203 ♂♂, 310 ♀♀ and 236 juv. from Heyst-Zeebrugge, littoral, 2.IX.1931; 79 % of the nemic fauna at this locality.

1 ♂ and 3 juv. from Knokke-Zoute, on stones along the littoral, 28.XII.1931; NaCl : 31,6 ‰.

DIMENSIONS :

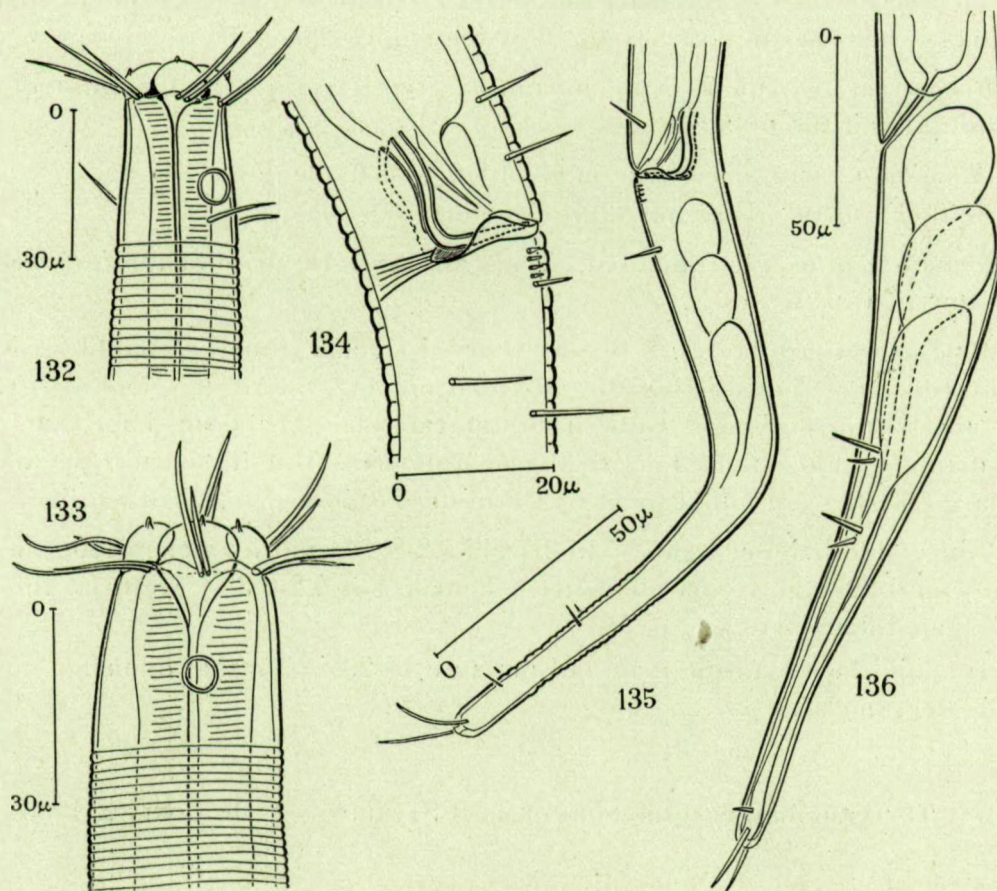
♂ L. : 1,215 mm.; α : 44,1 ; β : 4,48; γ : 7,9.						
22	?	271	332	M	1060	1,215 mm.
20		27,5		27,5	20	
♂ L. : 1,267 mm.; α : 44 ; β : 4,71; γ : 8.						
?	115	270	?	M	1108	1,267 mm.
16,8	24	26,4		28,8	19,2	
♂ L. : 1,270 mm.; α : 44,5 ; β : 4,85; γ : 8,3.						
?	125	264	?	M	1128	1,270 mm.
16,8	26,4	26,4		28,8	19,2	
♂ L. : 1,228 mm.; α : 51,2 ; β : 4,65; γ : 7,3.						
♀ L. : 1,495 mm.; α : 29,9 ; β : 4,04; γ : 7,47; V. : 72,9 %.						
27	?	370	?	1090	1296	1,495 mm.
28,8		43,2		50,4	32,4	

♀ L. : 1,548 mm.; α : 30,96; β : 4,39; γ : 7,54; V. : 70,9 %.

27	144	377	432	1098	1343	
28,8		46,8		50,4	32,4	10,8
1,548 mm.						

♀ L. : 1,566 mm.; α : 29 ; β : 4,19; γ : 7,67; V. : 72,09 %.

27	?	373	418	1130	1362	
28,8		43,2		54	32,4	10,8
1,566 mm.						



Theristus calceolatus DE CONINCK & SCHUURMANS STEKHOVEN.

- 132. Head end of a male.
- 133. Head end of a female.
- 134. Spicular apparatus of a male.
- 135. Spicular apparatus and tail of a male.
- 136. Tail of a female.

Habitus : Body much more slender in the male than in the female. In the male not much, in the female comparatively much narrowed anteriorly, 0,6 × maximal width on the level of the amphids. This depends upon the filling of the ovaries and the swelling of the uterus.

Cuticle distinctly ringed; rings in the male $1,77\mu$ apart in the middle of the body. Comparatively short and scanty hairs are irregularly scattered over the body surface.

Amphids in the male $0,29 \times$ corresponding body diameter, in the female $0,20 \times$ corresponding body diameter. In the male it is situated on $1 \times$, in the female on $0,9 \times$ cephalic diameter from the anterior end.

Head rounded with 6 large lips, each with a conical papilla; 12 cephalic setae, the larger ones in the male 20μ or $1,2 \times$, in the female $1 \times$ cephalic diameter, the shorter ones in both sexes $2/3$ of the longer ones.

Buccal cavity typical, with an annular reinforcement at the limit of the vestibulum and the oesophagus.

Oesophagus with nerving on about 40 % of the length.

Neither *ventral gland* nor *excretory pore* were seen.

Female genital tract unpaired, almost reaching the base of the oesophagus. The same fits for the *testis*.

Male genital armature : 2 slender, curved spicula, much resembling those of *Theristus acer*, but missing the proximal notch. Chord of spiculum $19-22\mu$ or 1 anal diameter long. Gubernaculum calceolate, baboosh-shaped, $0,6-0,7$ anal diameters long or $14,4\mu$. In the neighbourhood of the cloacal opening a few large bristles are found, next to 4 minute postcloacal setiform papillae.

Tail of the male elongate cylindrical, $7,2-8 \times$ anal diameters long; width at the end $0,32-0,36 \times$ anal diameter. Female tail $6,2-6,3 \times$, width at the end $0,33 \times$ anal diameter.

The apical setae in the male tail measure $18-20\mu = 1$ anal diameter; in the female the same setae are 25μ long.

58. *Theristus longisetosus* SCHUURMANS STEKHOVEN & DE CONINCK 1933.

REFERENCES :

SCHUURMANS STEKHOVEN & DE CONINCK 1933a, p. 12, pl. VI, fig. 1-5.

Apart from the habitat mentioned in the above-named paper this species was also found in 't Zwyn, on *Enteromorpha* between poles (1 ♂ and 1 ♀), 28.XII.1931; NaCl : $27,2 \text{ ‰}$.

For description, consult the cited literature.

Unpublished figures found in the bequest of the late helminthologist Dr. J. G. De Man prove that he also has seen this species at Veere. His figures show the typical sudden attenuation of the body at about the level of the *excretory pore*; this attenuation is a feature more especially characteristic for the male sex.

59. *Theristus tenuispiculum* (DITLEVSEN) 1919.Syn. : *Monhystera tenuispiculum* DITLEVSEN 1919.*Monhystera demani* SCHUURMANS STEKHOVEN 1931 nec DE ROUVILLE 1904.

Fig. 137-140.

REFERENCES :

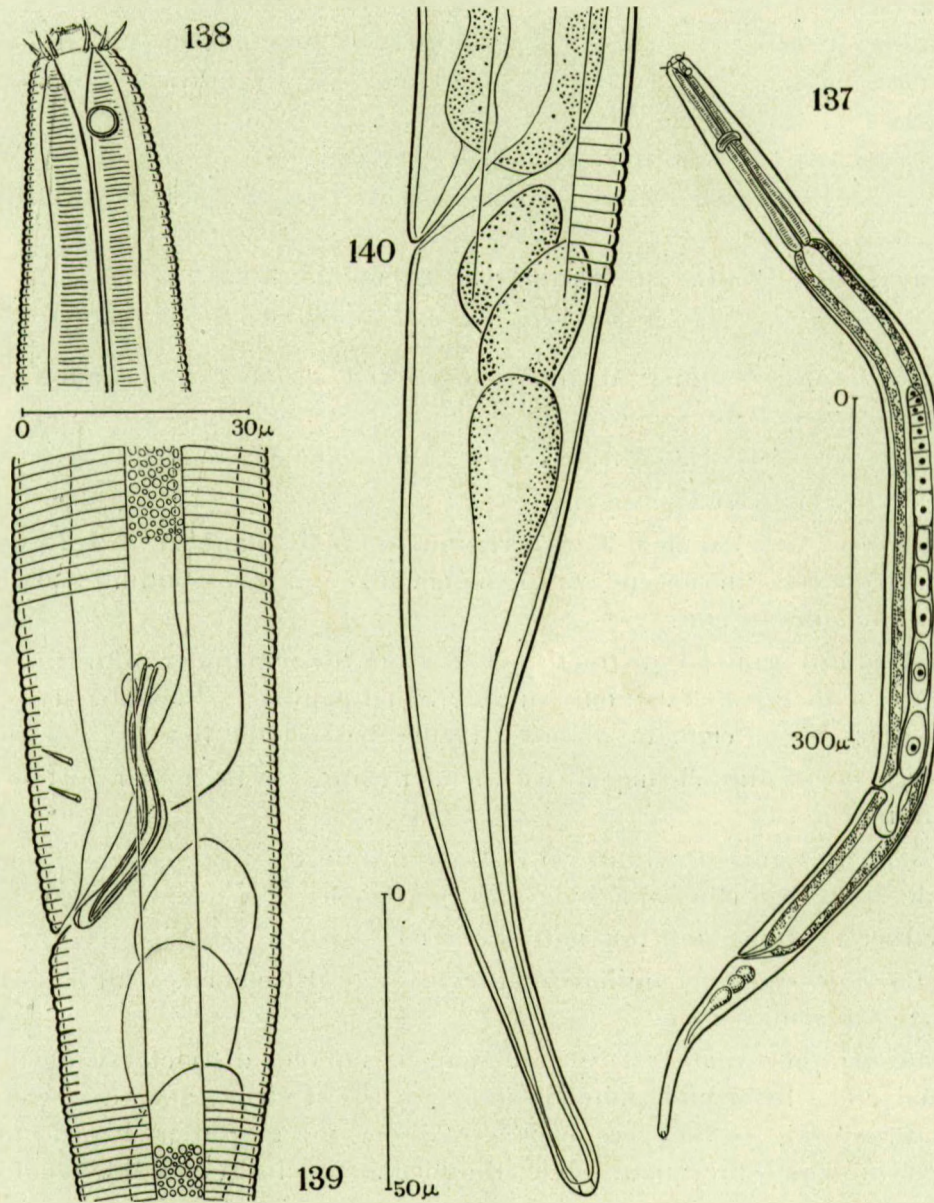
- ALLGÉN 1928c, p. 300. DITLEVSEN 1919, p. 150, pl. I, fig. 3, 6, 10.
 ALLGÉN 1929a, p. 42. SCHUURMANS STEKHOVEN 1931, p. 654.
 ALLGÉN 1932c, p. 423.

5 ♂♂, 2 ♀♀ and 1 juv. from Heyst-Zeebrugge, 2.IX.1931.

1 ♂, 2 ♀♀ and 1 juv. from 't Zwyn, on *Enteromorpha* between poles, 28.XII.1931; NaCl : 27,2 ‰.DIMENSIONS : ♂. L. : 0,890 mm.; α : 20,66; β : 4,65; γ : 6,4.♀. L. : 0,950 mm.; α : 22 ; β : 4,7 ; γ : 6,38; V.: 66,6%.*Habitus* rather clumsy, distinctly narrowed at the extreme anterior end, where it measures 0,45 × the width at the base of the œsophagus.*Cuticle* coarsely striated transversely, almost devoid of setae.*Lateral fields* wide.*Amphids* : In the male 0,23 × corresponding body diameter on 1,2 × cephalic diameter from the anterior end; in the female 0,25 × corresponding body diameter from the anterior end.*Head* bluntly conical, distinctly set off from the remainder of the body, with 6 inconspicuous lips and as many minute labial papillae. Cephalic setae small, in both sexes 0,5 × cephalic diameter (at the base of the lips).*Buccal cavity* funnel-shaped, with tender linings in the upper portion of the vestibulum.*Œsophagus* almost cylindrical. *Nervering* on 0,5 × œsophageal length in the male, on 0,43 × the same length in the female.Neither *ventral gland* nor *pore* observed.*Female genital tract* unilateral, prevulvar, outstretched, with a postvulvar receptaculum seminis.*Male genital armature*. Spicula slender, curved, distinctly winged at the proximal end; distal end pointed; more or less 1,15 × anal diameter long, 16 times as long as they are wide. Accessory pieces gutter-shaped, forming 2 grooves in which the spicula slide, rounded at the distal end, 0,66 anal diameter long.*Tail* in the male sex 4,14 ×, in the female 6,1 × anal diameters long; width at the apex 0,2 × anal diameter.

GEOGRAPHICAL DISTRIBUTION : North Sea and Baltic.

Remarks. — Ditlevsen's male measured 1.3 mm., was therefore somewhat larger than our specimens. The general shape of the spicula is in accordance with our findings, however Ditlevsen did not distinguish clearly spicula and accessory pieces, thus giving an incorrect impression of the relations at the distal end of the spicula. A comparison of our specimens with new Zuiderzee-material



Theristus tenuispiculum (DITLEVSEN).

137. General view of a female.
138. Head end of a male.

139. Spicular apparatus of a male.
140. Tail of a female.

proved the synonymy of Schuurmans Stekhoven's *M. demani* with *Theristus tenuispiculum* Ditlevsen.

Monhystera spec. 8 De Man 1922, which Schuurmans Stekhoven thought to be conspecific with his *M. demani*, is very closely allied with our form but may be distinguished from it by the larger size of its amphids.

GENUS STEINERIA MICOLETZKY 1921.

Syn. : *Monhystera* BASTIAN 1865 ex parte.

60. *Steinera mirabilis* SCHUURMANS STEKHOVEN & DE CONINCK 1933.

REFERENCES :

SCHUURMANS STEKHOVEN & DE CONINCK 1933a, p. 9, pl. IV, fig. 5; pl. V, fig. 1-3.
Habitat : coarse sand of the littoral, Oostende, 18.XI.1931; NaCl : 29,3 ‰.

GENUS MONHYSTERA BASTIAN 1865.

Syn. : *Tachyhodites* BASTIAN 1865 ex parte.

Three *Monhystera*-species were found in the present material :

1. *Monhystera microphthalma* DE MAN.
2. *Monhystera disjuncta* BASTIAN.
3. *Monhystera parva* (BASTIAN).

61. *Monhystera microphthalma* DE MAN 1884.

Fig. 141-144.

REFERENCES :

DE CONINCK 1930, p. 114.	SCHNEIDER, G. 1906, p. 10.
DE MAN 1884, p. 38, pl. II, fig. 8.	SCHNEIDER, G. 1916, p. 21.
DE MAN 1922b, p. 218, fig. 3a-c.	SCHNEIDER, G. 1927, p. 13.

11 ♂♂, 20 ♀♀ and 9 juv. on a break-water at Oostende, 18.XI.1931; NaCl : 30,77 ‰.
 1 ♀ from 't Zwyn, on *Enteromorpha* between poles, 28.XII.1931; NaCl : 27,2 ‰.
 1 ♂ from 't Zwyn, in sand and organic detritus, 28.XII.1931; NaCl : 21 ‰.

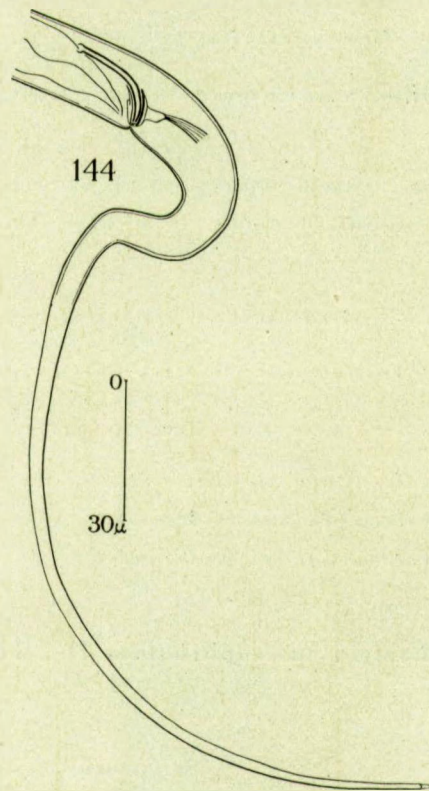
DIMENSIONS :

♂ L. : 0,856 mm.; α : 53,3 ; β : 6,69; γ : 3,82.						
13,6	72	128	208	M	632	0,856 mm.
9,6	12,8	14,4		16	14,4	
♀ L. : 0,580 mm.; α : 40,33; β : 6,36; γ : 3,18; V. : 48 %.						
?	61	91,2	120	280	397	0,580 mm.
9,6		14,4		14,4	9,6	

The species may be distinguished at once by its long, filiform tail and by its violet ocelli, very distinct in living specimens but inconspicuous in fixed material.

Cuticle smooth, bare.

Amphids circular, $0,3 \times$ corresponding body diameter in the female on $1,5 \times$ cephalic diameter from the anterior end. *Ocelli* immediately behind the amphids.



Monhystera microphthalmalma DE MAN.

144. Spicular apparatus and tail of a male.

Head set off, with 6 lips and 6 small labial papillae; 6 cephalic setae, $0,4 \times$ cephalic diameter long.

Buccal cavity typical.

Œsophagus distinctly swollen at the base. *Nerving* on 55-66 % of the œsophageal length.

Ventral gland situated immediately behind the base of the œsophagus.

Excretory pore not found.

Female genital tract unpaired, outstretched, prevulvar, reaching to the base of the ventral gland, beginning at 20 % of the body length.

Testis long, beginning at 25 % of the body length. *Spicula* slender, slightly curved, 1,57 × anal diameter long, with a proximal knobbed and a distal pointed end. *Accessory* pieces anvil-shaped, 0,5 × anal diameter long, with distinct dorsal apophysis.

Tail very long, tapering gradually, the last 2/3 almost filiform. In the male, the tail is frequently knee-like curved (fig. 144). The relations are : in the male, length 15,5 ×, width at the end 0,073 × anal diameter; in the female, length 19 ×, width at the end 0,14 × anal diameter.

The tail ends in an elongate, conical outlet for the spinneret glands.

GEOGRAPHICAL DISTRIBUTION : North Sea and Baltic.

62. *Monhystera disjuncta* BASTIAN 1865.

Fig. 145-150.

Syn. : *Monhystera ambigua* BASTIAN 1865.

Monhystera ambiguoides BUETSCHLI 1874.

REFERENCES :

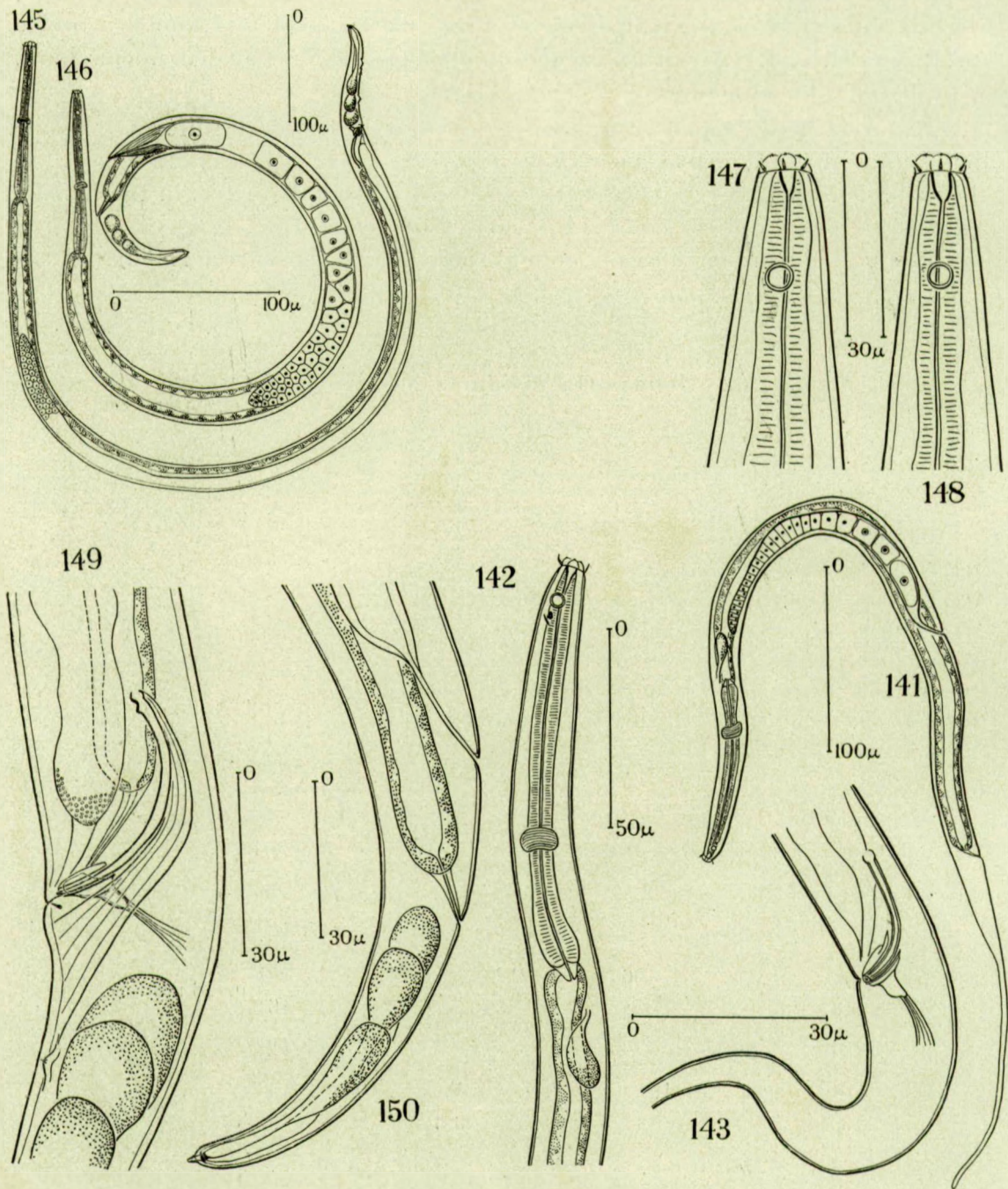
- ALLGÉN 1931, p. 247, *M. ambigua*.
 ALLGÉN 1932b, p. 166, *M. ambigua*.
 ALLGÉN 1932c, p. 422, *M. ambigua*.
 BASTIAN 1865, p. 98, pl. IX, fig. 12-13, *M. disjuncta*.
 BASTIAN 1865, p. 99, pl. IX, fig. 14-15, *M. ambigua*.
 BUETSCHLI 1874, p. 27, pl. II, fig. 7a, *M. ambiguoides*.
 DE MAN 1888, p. 7, fig. 4-4c.

8 ♂♂, 8 ♀♀ and 10 juv. on a break-water at Oostende, harbour entrance, IX.1931;
 DE SAEDELEER.

1 ♂ and 3 juv. on stones along the littoral, Knokke-Zoute, 28.XII.1931.

DIMENSIONS :

♂ L. :	0,628 mm.;	α :	36,9	;	β :	5,9	;	γ :	10,46.	
	14	?	106		212	M		566		
	9,3		14			17		16		0,628 mm.
♂ L. :	1,200 mm.;	α :	32,8	;	β :	7,5	;	γ :	11,42.	
	18	80	160		300	M		1095		
	13,7		27,5			36,5		25	6,8	1,200 mm.
♀ L. :	0,635 mm.;	α :	24,4	;	β :	6,35	;	γ :	9,77; V. :	85,8 %.
	14	60	100		280			545	570	
	9,3		16			26			12	0,635 mm.
♀ L. :	0,645 mm.;	α :	24,25;	β :	6,9	;	γ :	10,2; V. :	85,2 %.	
		14	57		93			265	550	580
	5,3	9,3		14,6		26			14	0,645 mm.

*Monhystera microphthalmma* DE MAN.

141. General view of a female.
 142. Anterior end of a female.
 143. Spicular apparatus of a male.
 144. General view of a male.
 145. General view of a female.
 146. General view of a female.

Monhystera disjuncta BASTIAN.

147. Head end of a male.
 148. Head end of a female.
 149. Spicular apparatus of a male.
 150. Posterior end of a female.

Habitus : Body tapering gradually towards both ends. Confer figures and formulas.

Cuticle smooth, bare.

Amphids circular, in a male $0,3 \times$, in a female $0,33 \times$ corresponding body diameter, on $2 \times$ cephalic diameter from the anterior end in both sexes.

Head bluntly rounded, with 6 round lips, each with a small labial papillae; 6 cephalic setae measuring in the male $0,2 \times$, in the female $0,25 \times$ cephalic diameter.

Buccal cavity elongate, with distinct, although faintly cuticularised walls, $1 \times$ cephalic diameter long.

Oesophagus gradually widening towards the base. *Nerving* in a male at 50 %, in a female at 60 % of the oesophageal length.

Female genital tract unpaired, prevulvar.

Testis long, outstretched, beginning at 25 %-33 % of the body length. *Spicula* very slender, $26 \times$ as long as they are wide, $1,55 \times$ anal diameter, proximal end knobbed, distal end sharply pointed. *Gubernaculum* anvil-shaped, of the same type as in *M. microphthalmia* and *M. parva*.

Tail gradually tapering, broadly rounded with a nipple-like outlet for the spinneret glands. The male tail presents a pair of small ventral setae on the lower lip of the cloaca, 1 pair of mamelliform papillae with a short setum at the apex on $1/3$, a second pair at the beginning of the distal $1/3$. This last pair is preceded by 2 pairs of minute setae.

GEOGRAPHICAL DISTRIBUTION : Channel, North Sea, Baltic, Campbell-islands.

Remarks. — Bastian, misled by the posterior position of the vulva in the female of *ambigua*, described his female specimen as a male; confer pl. IX, fig. 15.

Our material, containing males as well as females of the said species, proves that Bastian's *M. ambigua* and *M. disjuncta* are conspecific. Since *M. disjuncta* was described prior to *M. ambigua*, the first name prevails.

The shape of the tail in both figures (13 and 15, pl. IX) has been depicted as pointed too much, as in so many other figures of Bastian.

As for *M. ambiguoides* Buetschli, we can only confirm De Man's opinion that it is a synonym of *M. ambigua* Bastian, and therefore also of *M. disjuncta* Bastian

63. *Monhystera parva* (BASTIAN) 1865.

Fig. 151-160.

Syn. : *Tachyhodites parvus* BASTIAN 1865.*Monhystera heteroparva* MICOLETZKY 1924.*Monhystera parva* var. *meridiana* MICOLETZKY 1922.

REFERENCES :

- ALLGÉN 1927a, p. 57. DE MAN 1888, p. 7, pl. I, fig. 3-3b.
 ALLGÉN 1928c, p. 298. DE MAN 1922b, p. 219, fig. 4a-c.
 ALLGÉN 1929a, p. 42. MICOLETZKY 1922c, p. 4, var. *meridiana*.
 ALLGÉN 1932c, p. 422. MICOLETZKY 1924, p. 169, *M. heteroparva*.
 BASTIAN 1865, p. 165, pl. XIII, fig. 185,
Tachyhodites parvus.

9 ♂♂, 15 ♀♀ and 7 juv. on a break-water at Oostende, harbour entrance, IX.1931;
 DE SAEDELEER.

8 ♂♂, 17 ♀♀ and 15 juv. from 't Zwyn, sand and organic detritus, 28.XII.1931; NaCl :
 21 ‰.

DIMENSIONS :

♂ L. : 0,500 mm.; α : 27,4; β : 5,55; γ : 5,55.

12,7	?	90	118	M	410	0,500 mm.
10		16,6		18,2	13,6	

♂ L. : 0,610 mm.; α : 25,4; β : 7,6 ; γ : 6,1.

?	?	80	?	M	510	0,610 mm.
		18		24	18	

♂ L. : 0,645 mm.; α : 26,4; β : 5,1 ; γ : 6,1.

?	75	126	155	M	540	0,645 mm.
12,5		20		24	19,5	

♀ L. : 0,600 mm.; α : 25,4; β : 5,9 ; γ : 5,2 ; V. : 59,1 %.

13,6	?	104	165	355	485	0,600 mm.
12,7		20		23,6	13,6	

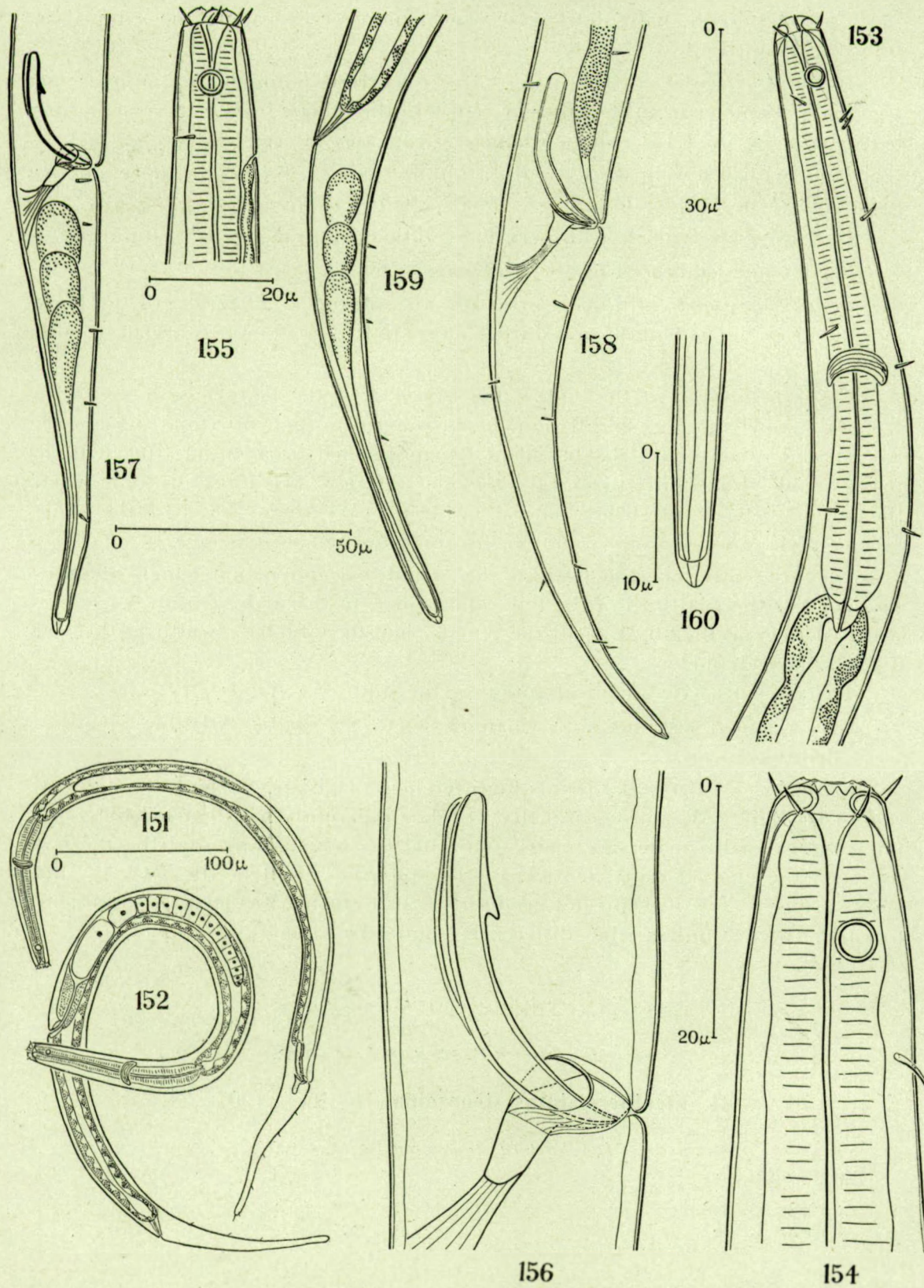
♀ L. : 0,660 mm.; α : 25,3; β : 5,5 ; γ : 6,2 ; V. : 59,1 %.

?	?	119	140	390	555	0,660 mm.
11,5		18	26	15	4,5	

♀ L. : 0,760 mm.; α : 25,3; β : 6,33; γ : 6,33; V. : 55,4 %.

?	?	120	155	422	640	0,760 mm.
13,5		22,5	30	19,5	5	

Habitus : Body small; tail conspicuously more narrowed than the head end;
 confer the cobbian formulas and the figures.



Monhystera parva (BASTIAN).

- | | |
|--------------------------------|---|
| 151. General view of a male. | 156. Spicular apparatus of a male. |
| 152. General view of a female. | 157. Spicular apparatus and tail of a male. |
| 153. Anterior end of a female. | 158. Id. of another male. |
| 154. Head end of a female. | 159. Tail of a female. |
| 155. Head end of a male. | 160. Tip of tail in a male. |

Cuticle smooth, with short setae placed more or less along the submedian lines, distributed all over the body.

Amphids circular, in the male $0,315 \times$ corresponding body diameter, on 1 cephalic diameter from the anterior end. In the female $0,26 \times$ corresponding body diameter, on 1,15 cephalic diameters from the anterior end.

Head with 6 low lips, each with a minute papilla; 6 cephalic setae, in the male $0,33 \times$, in the female $0,28 \times$ cephalic diameter long.

Buccal cavity typical, with very faint cuticularisation of the vestibulum.

Oesophagus embraced by the nervering at 60 % of its length.

Female genital tract unpair, prevulvar, beginning at 20-27,5 % of the body length, growing in length and shifted more and more forwards, relative with age.

Testis beginning at the end of the first $1/4$ of the body length. *Spicula* 1,5 anal diameters long, slightly curved, broadened in their proximal third, with a ventral denticle at the distal end of the mentioned broadening, the denticle being visible clearly only in slightly dorso-lateral view, becoming invisible when the animal is seen in strictly lateral position. *Accessory pieces* of the same type as in *M. microphthalma* and *M. disjuncta* but not so massive.

Tail gradually tapering towards the cylindrical endportion which occupies more or less the last third of the tail. Relations : in the male, length $6,1-8,4 \times$, width at the end $0,12-0,21 \times$, in the female, length $5,3-6,6 \times$, width at the end $0,2-0,3 \times$ anal-diameter.

The tail ends with a conical outlet for the spinneret-glands.

GEOGRAPHICAL DISTRIBUTION : Channel, North Sea, Baltic, Atlantic (Sargasso-sea), Mediterranean.

Remarks. — Micoletzky points to differences of his species with the description of De Man. We must admit that De Man apparently has depicted the genital armature of his male specimens somewhat too schematical, and that he has overseen the characteristic denticle of the spicula as well as the setae on the body surface. Now it seems not necessary to us to bring Micoletzky's specimens to a new species, unless other differences should be found.

GENUS ELEUTHEROLAIMUS FILIPJEV 1922.

Syn. : *Monhystera* BASTIAN 1865 ex parte.

64. *Eleutherolaimus stenosoma* (DE MAN) 1907.

Syn. : *Monohystera stenosoma* DE MAN 1907.

REFERENCES :

ALLGÉN 1928c, p. 298.
ALLGÉN 1929c, p. 28.

ALLGÉN 1929a, p. 42.
ALLGÉN 1932c, p. 423.

DE MAN 1907a, p. 229.

DE MAN 1922, p. 223, fig. 9a-c.

DE MAN 1907b, p. 36, pl. I, fig. 3-3e.

SCHNEIDER, G. 1927, p. 14.

1 ♂ and 2 juv. from Heyst-Zeebrugge, 2.IX.1931.

5 juv. from 't Zwyn, between sand and organic detritus, 28.XII.1931; NaCl : 21 ‰.

The present specimens are typical representants of the species.

Cuticle smooth with rare setae.

Amphids circular, with a median elevation, 0,53 × corresponding body diameter, on 1,5 × cephalic diameter from the anterior end. When fresh material is examined with great care, the amphids prove to be faintly spiral, and not circular.

Head with (2) lips, each with a small labial papilla and an anterior crown of labial setae (4 setae) 0,53 × cephalic diameter long, and a second crown of 4 cephalic setae 1 × cephalic diameter long.

Tail tapering gradually to the bluntly rounded tip. Length : 7-8 ×, width at the end 0,2 × anal diameter.

GEOGRAPHICAL DISTRIBUTION : Channel, North Sea and Baltic.

ORDER VI : ANGUILLULOIDEA

FAMILY ANGUILLULIDAE.

GENUS RHABDITIS DUJARDIN 1845.

65. *Rhabditis marina* BASTIAN 1865.

Fig. 161-163.

REFERENCES :

ALLGÉN 1931, p. 191.

SCHULZ 1932, p. 419, fig. 49a-e.

BASTIAN 1865, p. 129, pl. X, fig. 60-62.

STEINER 1916, p. 518, pl. 18, fig. 1a-g.

DITLEVSEN 1911, p. 240, pl. II, fig. 1-5, 7

STEINER 1922, p. 9, pl. 1, fig. 1a-b.

1 ♂, 1 ♀ and 17 juv. from break-water, Oostende, 18.XI.1931; NaCl : 30,77 ‰.

1 ♂, 1 ♀ and 10 juv. from a puddle on the strand at Oostende, 18.XI.1931; NaCl : 29,3 ‰; 27,9 % of the nemic fauna at this locality.

DIMENSIONS :

♂ L. : 1,420 mm.; α : 21,8; β : 6,4; γ : 28,4.

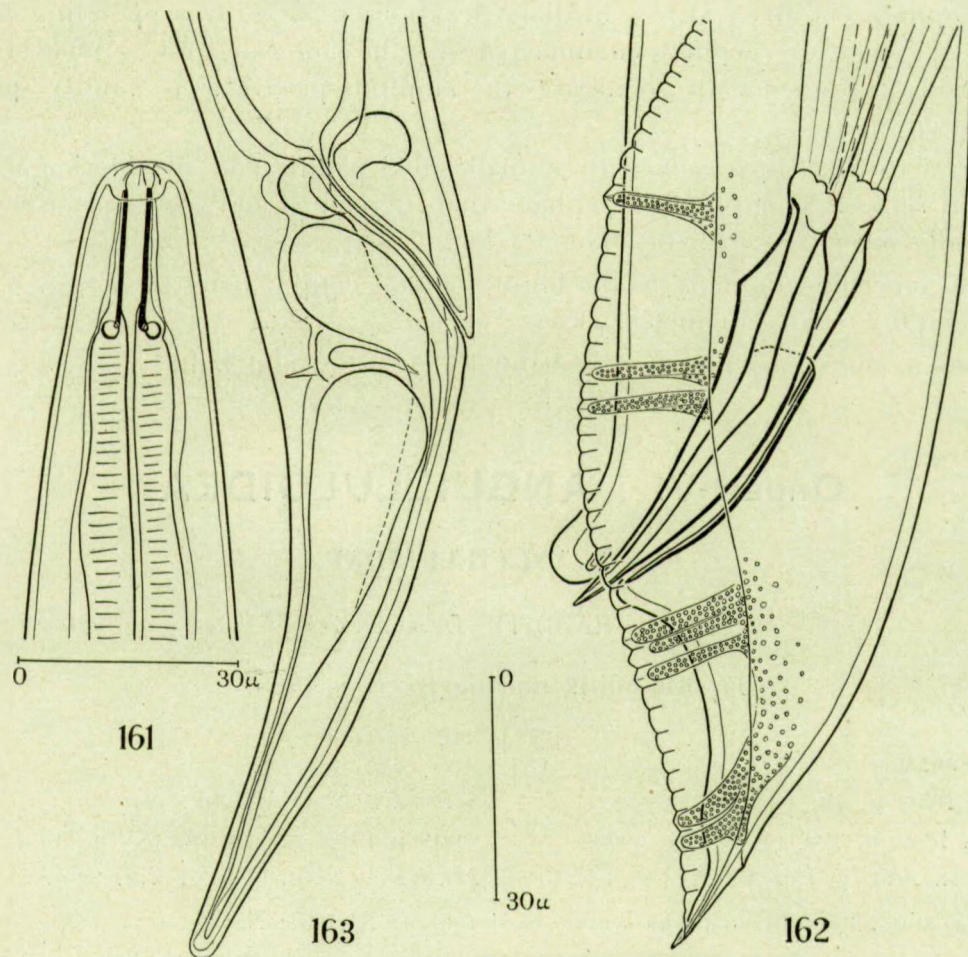
17	150	205	295	500	M	1370	
13	40	45			65	24	1,420 mm.

♀ L. : 1,010 mm.; α : 37,3; β : 4,9; γ : 11,8; V. : 53,9 %.

20	150	205	?	355	545	735	925
14	32	37			37		24

It is not certain whether the species *Rhabditis marina* Bastian does not embrace two different species corresponding with Steiner's division in *Rh. marina typ.* and *Rh. marina var. septentrionalis*, but a conclusion was not possible after the present, comparatively scanty material.

It is highly probable that Schulz's var. *kieliensis* falls into the mode of variability of the var. *septentrionalis* Steiner, to which our specimens also belong.



Rhabditis marina BASTIAN.

161. Head end of a juvenile.
 162. Copulatory apparatus and tail of a male.
 163. Tail of a female.

The buccal cavity of a young female proved to be 2 cephalic diameter long.

Male genital armature. Spicula long and strong, $1,87 \times$ anal diameter or $1,23 \times$ length of tail. Proximal end swollen, distal end pointed. Gubernaculum 1 anal diameter long.

Bursa 3,42 × anal diameters long, embracing the whole male tail, with 1 + 2 preanal + 3 + 2 ¹/₃ postanal pairs of bursal papillae. (Cf. fig. 162.)

Immediately in front of the anal opening there are two small papillae on each side of the midventral line. Another small papilla (phasmid) is found on the dorsal side of the tail near to the apex.

Male *tail* 1,52 × anal diameter long. Female *tail* conical, with the indication of a cylindrical end-portion, which was more distinctly visible in the specimens of Ditlevsen and Steiner 1916, whereas the female tail of Bastian's animals was effilate and pointed.

Our specimens, as those of Ditlevsen and Steiner 1916 have a tail with a rounded tip. Relations of the tail : length, 3,2 ×, width at the end 0,127 × anal diameter. Non functional spinneret glandcells are present.

GEOGRAPHICAL DISTRIBUTION : Channel, North Sea and Baltic.

GENUS CEPHALOBUS BASTIAN 1865.

66. *Cephalobus oxyuroides* DE MAN 1876.

REFERENCES :

Confer MICOLETZKY 1922*a*, p. 276.

DE CONINCK 1930, p. 121.

1 ♂ from 't Zwyn, sand and organic detritus, 28.XII.1931; NaCl : 21 ‰.

De Coninck found the species on an earlier date (1930) in 't Zwyn in water with a salinity of only ± 5 ‰.

GEOGRAPHICAL DISTRIBUTION : Cosmopolite

REFERENCES

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- 1927b, *Freilebende marine Nematoden von der Kueste Tasmaniens*. (Ibid., LXXIII : 197-217, fig. 1-11.)
- 1928a, *Freilebende Nematoden von den Campbell- und Staten Inseln*. (Nyt Magazin for Naturvidenskaberne, LXVI : 249-309, fig. 1-27.)
- 1928b, *Ueber einen Fall von Viviparität bei Cyatholaimus (Paracanthochus) coecus (BASTIAN)*. (Zool. Anz., LXXVII : 36-39, fig. 1-2.)
- 1928c, *Neue oder wenig bekannte freilebende marine Nematoden von der schwedischen Westkueste*. (Ibid., LXXVII : 281-307, fig. 1-5.)
- 1929a, *Freilebende marine Nematoden aus den Umgebungen der staatlichen Station Kristineberg an der Westkueste Schwedens*. (Capita Zoologica II, 8 : 1-52, pl. 1-4, fig. 1-13.)
- 1929b, *Neue freilebende marine Nematoden von der Westkueste Schwedens*. (Zool. Jahrb. Syst., LVII : 431-496, fig. 1-47.)
- 1929c, *Suedschwedische marine Nematoden*. (Goeteborgs Kungl. Vitterhets-Samhälles Handlingar, Femte Fjölden, Ser. B. I, 2 : 1-40, fig. 1-10.)
- 1929d, *Was ist die von Buetschli aufgestellte Odontophora marina?* (Zool. Anz., LXXXI : 305-309, 4 fig.).
- 1930a, *Ueber einige neue oder wenig bekannte Brachwasser-Nematoden der Litoralzone des Oeresunds*. (Ibid., LXXXVIII : 58-72, fig. 1-11.)
- 1930b, *Die Arten und die systematische Stellung des Genus Conolaimus FILIPIEV*. (Ibid., LXXXVIII : 198-209.)
- 1930c, *Freilebende marine Nematoden von der Staten-Insel (Feuerland-Archipel I)*. (Ibid., LXXXIX : 246-258, 9 fig.).
- 1930d, *Id. II* (Ibid., XC : 27-38, fig. 1-6).
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- 1931, *Freilebende Nematoden aus dem Dröbackabschnitt des Ostfjords*. (Zool. Jahrb. Syst., LXI : 211-262, fig. 1-16.)
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- 1928a, *A new species of the nemid Genus Syringolaimus with a note on the fossorium of Nemas*. (Jl. Wash. Acad. Sc., XVIII : 249-253, fig. 1-3.)
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- 1930, *The demanian vessels in Nemas of the Genus Oncholaimus; with notes on 4 new Oncholaimus*. (Jl. Wash. Acad. Sc., XX : 225-241, fig. 1-8.)
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ADDITIONS

During the printing of the manuscript we received the following papers :

- ALLGÉN, C. 1933a, *Einiges über Viviparie bei freilebenden marinen Nematoden*. (Det Kongelige Norske videnskabers Selskab. Forhandlinger, VI, 26 : 101-102.)
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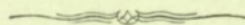
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