FREELIVING MARINE NEMAS

OF THE BELGIAN COAST. II

WITH GENERAL REMARKS ON THE STRUCTURE AND THE SYSTEM OF NEMAS

INTRODUCTION

Sooner than expected a second monograph on the free-living marine nemas of the Belgian Coast prooved to the 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 prooved 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 SAEDELEER.

N.	ORDER	SPECIES	JUV.	♀	♂	TOTAL	%
1.	C.	*Chromadora nudicapitata*	26	130	114	270	60,4
2.	M.	*Theristus acer*	23	28	9	60	13,42
3.	M.	*Monhystera parva*	7	15	9	31	6,93
4.	M.	*Monhystera disjuncta*	10	8	8	26	5,72
5.	C.	*Chromadorina macrolaima*	1	5	7	13	2,91
6.	E.	*Metaparoncholaimus campylocercus*	10	—	1	11	2,46
7.	C.	*Paracanthonchus caecus*	9	2	—	11	2,46
8.	Ar.	*Axonolaimus paraspinosus*	4	2	1	7	1,56
9.	C.	*Chromadora* spec. (*kreisi* ?)	—	3	—	3	0,67
10.	E.	*Enoplus communis*	2	—	—	2	0,45
11.	E.	*Oncholaimellus calvadosicus*	1	—	1	2	0,45
12.	Ar.	*Odontophora armata*	1	—	1	2	0,45
13.	Ar.	*Halaphanolaimus pellucidus*	1	—	1	2	0,45
14.	C.	*Prochromadorella germanica*	—	—	1	1	0,22
15.	C.	*Chromadorina microlaima*	—	1	—	1	0,22
16.	C.	*Sabatieria vulgaris*	1	—	—	1	0,22
17.	M.	*Theristus setosus*	—	1	—	1	0,22
18.	M.	*Theristus* spec.	1	—	—	1	0,22
19.	M.	*Monhystera* spec. 1	1	—	—	1	0,22
20.	M.	*Monhystera* spec. 2	1	—	—	1	0,22
		TOTAL	99	195	153	447	100

Nemic index : 13,1.

Division of the specimens after the orders :

Chromadoroidea	300	67,16
Monhysteroidea	121	26,95
Enoploidea	15	3,36
Araeolaimoidea	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 $^0/_{00}$.

N.	Order	SPECIES	Juv.	♀	♂	Total	%
1.	M.	*Theristus acer*	83	48	29	160	46,5
2.	M.	*Monhystera microphthalma*	9	20	11	40	11,6
3.	C.	*Paracanthonchus caecus*	16	10	14	40	11,6
4.	C.	*Microlaimus honestus*	7	3	12	22	6,4
5.	An.	*Rhabditis marina*	17	1	1	19	5,5
6.	C.	*Chromadora nudicapitata*	3	5	9	17	4,9
7.	M.	*Theristus calceolatus*	5	3	2	10	2,9
8.	Ar.	*Araeolaimus filipjevi*	5	1	1	7	2
9.	E.	*Oncholaimus brachycercus*	2	2	3	7	2
10.	Ar.	*Tripyloides marinus*	2	1	3	6	1,7
11.	E.	*Enoplus communis*	4	—	1	5	1,4
12.	C.	*Chromadorita obtusidens*	2	2	—	4	1,1
13.	Ar.	*Axonolaimus spinosus*	2	—	1	3	0,8
14.	C.	*Chromadorina macrolaima*	—	—	1	1	0,29
15.	Ar.	*Ascolaimus elongatus*	—	1		1	0.29
16.	M.	*Theristus setosus*	—	—	1	1	0,29
17.	C.	*Chromadora* spec.	—	1	—	1	0,29
		Total	157	98	89	344	100

Division of the specimens after the orders :

Monhysteroidea	211	61,3
Chromadoroidea	85	24,7
Anguilluloidea	19	5,5
Araeolaimoidea	17	4,9
Enoploidea	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 $^0/_{00}$.

N.	Order	SPECIES	Juv.	♀	♂	Total	%
1.	C.	*Sabatieria vulgaris*	—	2	—	2	6,45
2.	C.	*Dichromadora* spec.	—	—	—	1	3,23
3.	M.	*Monhystera* 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 $^0/_{00}$.

N.	Order	SPECIES	Juv.	♀	♂	Total	%
1.	E.	*Oncholaimus oxyuris*	2	—	—	2	66,66
2.	E.	*Adoncholaimus thalassophygas*	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 $^0/_{00}$.

N.	Order	SPECIES	Juv.	♀	♂	Total	%
1.	An.	*Rhabditis marina*	10	1	1	12	27,90
2.	Ar.	*Ascolaimus elongatus*	1	4	2	7	16,28
3.	M.	*Monhystera* spec.	6	—	1	7	16,28
4.	M.	*Theristus acer*	—	4	1	5	11,63
5.	E.	*Enoplolaimus propinquus*	4	—	—	4	9,30
6.	C.	*Paracanthonchus caecus*	1	—	—	1	2,32
7.	C.	*Dichromadora hyalocheile*	—	—	1	1	2,32
8.	C.	*Cyatholaimus* spec.	—	1	—	1	2,32
9.	Ar.	*Odontophora longicaudata*	1	—	—	1	2,32
10.	Ar.	*Bathylaimus paralongisetosus*	—	—	1	1	2,32
11.	Ar.	*Bathylaimus stenolaimus*	—	1	—	1	2,32
12.	Ar.	*Leptolaimus setiger*	—	1	—	1	2,32
13.	M.	*Steineria mirabilis*	—	—	1	1	2,32
		Total...	23	13	7	43	100

Division of the specimens after the orders :

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

TABLE VI

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

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

Division of the specimens after the orders :

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

TABLE VII

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

N.	Order	SPECIES	Juv.	♀	♂	Total	%
1.	E.	*Enoplus communis*	3	1	1	5	35,71
2.	C.	*Chromadorita longisetosa*	—	—	3	3	21,43
3.	M.	*Theristus acer*	1	2	—	3	21,43
4.	C.	*Paracanthonchus caecus*	—	1	—	1	7,14
5.	C.	*Sabatieria quadripapillata*	—	1	—	1	7,14
6.	M.	*Theristus normandicus*	—	—	1	1	7,14
		Total	4	5	5	14	100

Nemic index : 0,3.

Division of the specimens after the orders :

Enoploidea	5	35,71
Chromadoroidea	5	35,71
Monhysteroidea	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 $^0/_{00}$.

N.	Order	SPECIES	Juv.	♀	♂	Total	%
1.	C.	*Chromadora nudicapitata*	—	1	3	4	26,66
2.	C.	*Chromadorita obtusidens*	—	2	2	4	26,66
3.	M.	*Monhystera disjuncta*	3	—	1	4	26,66
4.	E.	*Enoplus communis*	1	—	—	1	6,66
5.	C.	*Paracanthonchus caecus*	—	1	—	1	6,66
6.	C.	*Chromadorita longisetosa*	—	1	—	1	6,66
		Total	4	5	6	15	100

Nemic index : 0,46.

Division of the specimens after the orders :

Chromadoroidea	10	66,66
Monhysteroidea	4	26,66
Enoploidea	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.	*Chromadora nudicapitata*	1	26	8	35	53,03
2.	E.	*Enoplolaimus propinquus*	5	1	2	8	12,12
3.	M.	*Theristus tenuispiculum*	1	2	1	4	6,06
4.	M.	*Theristus* spec.	—	3	–	3	4,54
5.	Ar.	*Tripyloides septentrionalis*	2	1	—	3	4,54
6.	E.	*Syringolaimus striaticaudatus*	1	-	1	2	3,03
7.	C.	*Cyatholaimus punctatus*	—	1	1	2	3,03
8.	C.	*Neochromadora poecilosoma*	—	2	—	2	3,03
9.	M.	*Theristus longisetosus*	—	1	1	2	3,03
10.	E.	*Metaparoncholaimus campylocercus*	1	—		1	1,51
11.	E.	*Viscosia viscosa*	—		1	1	1,51
12.	C.	*Oistolaimus suecicus*	1	—	–	1	1,51
13.	M.	*Theristus setosus*	—	—	—	1	1,51
14.	M.	*Monhystera microphthalma*	—	1	—	1	1,51
		Total...	12	38	16	66	100

Nemic index : 2.

Division of the specimens after the orders :

Chromadoroidea	40	60,6
Enoploidea	12	18,18
Monhysteroidea	11	15,5
Araeolaimoidea	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.	*Bathylaimus assimilis*	25	168	79	272	54,61
2.	M.	*Theristus acer*	26	11	9	46	9,23
3.	M.	*Monhystera parva*	15	17	8	40	8,02
4.	C.	*Chromadora nudicapitata*	11	16	6	33	6,60
5.	Ar.	*Ascolaimus elongatus*	9	6	5	20	4,01
6.	C.	*Microlaimus marinus*	—	17	2	19	3,81
7.	C.	*Hypodontolaimus striatus*	2	5	5	12	2,40
8.	Ar.	*Tripyloides marinus*	3	4	4	11	2,20
9.	E.	*Metaparoncholaimus campylocercus*	4	2	—	6	1,20
10.	E.	*Oncholaimus oxyuris*	5	4	1	10	2

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

Nemic index : 12,45.

Division of the specimens after the orders :

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

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

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* *

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 (Schuurmans Stekhoven 1931).

Comparing our present data with the results of De Coninck's researches about the nemic faunas of the Zwyn 1931*a*, the same thing can be said. At that time De Coninck studied particularly biocoenoses with a salinity not surpassing 20 °/₀₀ in the brackish soil, whereas the brackish water explored by him at that time possessed a salinity of about 5 °/₀₀ 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 salitiny 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 °/₀₀ and 27,2 °/₀₀; 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, 1931.	De Coninck, 1932.	Present material.	Atlantic coast of Europa.	Channel.	North sea. Walcheren.	North sea. Zuiderzee.	North sea. Helgoland.	North sea. Danmark, Norway, Kristineberg.	Baltic.
	ORDER **ENOPLOIDEA**												
	FAM. **LEPTOSOMATIDAE**												
1	*Anticoma limalis* BASTIAN	—	—	+	—	—	+	+	+	—	+	+	+
2	*Cylicolaimus magnus* (VILLOT)	—	—	+	—	—	+	+	—	—	+	+	+
3	*Stenolaimus marioni* SOUTHERN	—	—	+	—	—	+	—	—	—	—	+	—
4	*Thoracostoma trichodes* (LEUCKART)	—	—	+	—	—	+	—	+	+	+	+	—
5	*Synonchus fasciculatus* (COBB) (syn. : *Fiacra brevisetosa* SOUTHERN.)	—	—	+	—	—	+	—	—	—	+	—	—
	FAM. **ENOPLIDAE**												
6	*Enoplus communis* BASTIAN	+	+	+	—	+	+	+	+	+	+	+	+
7	**Enoplolaimus propinquus* DE MAN	—	—	—	—	+	—	—	—	+	—	—	+
8	*Oxyonchus dentatus* (DITLEVSEN)	—	—	+	—	—	—	—	—	—	—	+	+
	FAM. **OXYSTOMIDAE**												
9	**Trefusia longicauda* DE MAN	—	—	—	—	+	—	+	—	+	+	+	+
	FAM. **ONCHOLAIMIDAE**												
10	**Oncholaimellus calvadosicus* DE MAN	—	—	—	—	+	—	+	—	—	—	+	—
11	*Adoncholaimus thalassophygas*. (DE MAN)	+	+	—	—	+	—	—	+	+	+	+	+
12	*Metaparoncholaimus campylocercus* (DE MAN)	—	—	+	—	+	—	—	—	—	—	—	—
13	**Oncholaimus brachycercus* DE MAN	—	—	—	—	+	—	+	+	+	+	+	+
14	*Oncholaimus oxyuris* DITLEVSEN	—	—	—	+	+	—	—	—	—	—	—	—
15	*Metoncholaimus pristiurus* (ZURSTRASSEN)	—	—	+	—	—	—	—	—	—	+	—	—
16	**Viscosia viscosa* (BASTIAN)	—	—	—	—	+	—	+	+	+	—	+	+
17	*Anoplostoma blanchardi* DE MAN	+	+	—	—	+	—	—	+	—	—	—	—
	FAM. **DORYLAIMIDAE**												
18	*Syringolaimus striaticaudatus* DE MAN	—	+	—	+	+	—	—	+	—	—	+	—

	ORDER **CHROMADOROIDEA**												
	FAM. **CYATHOLAIMIDAE**												
19	*Paracyatholaimus intermedius* (DE MAN)	+	+	—	—	—	—	—	+	—	—	—	+
20	**Cyatholaimus punctatus* BASTIAN	—	—	—	—	+	—	+	—	—	—	—	—
21	*Cyatholaimus demani* FILIPJEV.	—	—	+	—	+	+	+	+	—	+	+	—
22	**Paracanthonchus caecus* (BASTIAN)	—	—	—	—	+	—	+	+	+	+	+	+
23	*Paracanthonchus spectabilis* ALLGÉN	—	—	+	—	+	—	—	—	—	—	+	—
	FAM. **CHOANOLAIMIDAE**												
24	*Halichoanolaimus robustus* BASTIAN	—	—	+	—	—	+	+	+	—	+	+	+
	FAM. **DESMODORIDAE**												
25	**Desmodora serpentulus* DE MAN	—	—	—	—	+	—	+	+	—	+	+	+
26	*Monoposthia costata* DE MAN	—	—	+	—	—	—	+	+	—	+	+	+
27	**Oistolaimus suecicus* ALLGÉN	—	—	—	—	+	—	—	—	—	—	+	+
	FAM. **CHROMADORIDAE**												
28	**Chromadorina macrolaima* (DE MAN)	—	—	—	—	+	—	—	+	—	—	+	+
29	*Chromadorina microlaima* (DE MAN).	—	—	+	—	+	—	—	+	+	—	+	+
30	**Neochromadora poecilosoma* (DE MAN)	—	—	—	—	+	—	+	+	+	+	+	+
31	**Prochromadorella germanica* (BUETSCHLI)	—	—	—	—	+	—	—	—	—	+	+	+
32	**Chromadora nudicapitata* BASTIAN	—	—	—	—	+	+	+	+	+	—	+	—
33	*Chromadora cephalata* DE MAN	—	—	+	—	—	—	—	—	+	—	+	+
34	*Chromadora kreisi* SCHUURMANS STEKHOVEN & ADAM.	—	—	+	—	—	—	+	—	—	—	—	—
35	*Chromadorita obtusidens* SCHUURMANS STEKHOVEN & ADAM	—	—	+	—	+	—	—	—	—	—	—	—
36	**Chromadorita longisetosa* DE CONINCK & SCHUURMANS STEKHOVEN	—	—	—	—	+	—	—	—	—	—	—	—
37	**Dichromadora hyalocheile* DE CONINCK & SCHUURMANS STEKHOVEN	—	—	—	—	+	—	—	—	—	—	—	—
38	*Pareuchromadora amphidiscata* SCHUURMANS STEKHOVEN & ADAM	—	—	+	—	—	—	—	—	—	—	—	—
39	*Hypodontolaimus inaequalis* (BASTIAN)	—	—	+	—	—	—	+	+	—	+	+	+
40	**Hypodontolaimus bütschlii* FILIPJEV	—	—	—	—	+	—	—	—	+	+	+	+
41	*Spilophorella papillata* KREIS	—	—	+	—	—	—	+	—	—	—	—	—
42	*Spilophorella paradoxa* DE MAN	—	—	+	—	—	—	—	+	+	+	+	+
	FAM. **COMESOMIDAE**												
43	**Sabatieria vulgaris* (DE MAN)	—	—	—	—	+	—	—	+	+	+	+	—
44	**Sabatieria quadripapillata* FILIPJEV	—	—	—	—	+	—	—	—	—	—	—	—

NUMBER	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. Walcheren.	North sea. Zuiderzee.	North sea. Helgoland.	North sea. Danmark. Norway, Kristineberg.	Baltic.
	FAM. **MICROLAIMIDAE**												
45	**Microlaimus acuticaudatus* SCHUURMANS STEKHOVEN & DE CONINCK	—	—	—	—	+	—	—	—	—	—	—	—
46	*Microlaimus globiceps* DE MAN.	+	+	—	—	—	—	—	—	+	—	—	+
47	**Microlaimus honestus* DE MAN	—	—	—	—	+	—	—	—	+	—	+	+
48	**Microlaimus marinus* (SCHULZ)	—	—	—	—	+	—	—	—	—	—	—	+
49	**Microlaimus robustidens* SCHUURMANS STEKHOVEN & DE CONINCK	—	—	—	—	+	—	—	—	—	—	—	—
	ORDER **ARAEOLAIMOIDEA**												
	FAM. **AXONOLAIMIDAE**												
50	*Araeolaimus filipjevi* SCHUURMANS STEKHOVEN & ADAM.	—	—	+	—	+	—	—	—	—	—	—	—
51	**Ascolaimus elongatus* (BUETSCHLI)	—	—	—	—	+	—	—	+	+	+	+	+
52	*Axonolaimus paraspinosus* SCHUURMANS STEKHOVEN & ADAM	—	—	+	—	+	—	—	—	—	+	—	+
53	**Axonolaimus spinosus* (BUETSCHLI)	—	—	—	—	+	—	—	—	+	+	+	+
54	**Odontophora armata* (DITLEVSEN)	—	—	—	—	+	—	—	—	—	—	+	+
55	**Odontophora longicaudata* SCHUURMANS STEKHOVEN & DE CONINCK	—	—	—	—	+	—	—	—	—	—	—	—
	FAM. **CAMACOLAIMIDAE**												
56	**Camacolaimus longicauda* DE MAN	—	—	—	—	+	—	—	—	+	+	+	—
57	*Camacolaimus tardus* DE MAN	—	—	+	—	—	—	—	+	—	+	—	+
	FAM. **HALAPHANOLAIMIDAE**												
58	*Deontolaimus papillatus* DE MAN	+	+	—	—	—	—	—	+	—	—	—	—
59	**Dermatolaimus elegans* SCHUURMANS STEKHOVEN & DE CONINCK	—	—	—	—	+	—	—	—	—	—	—	—
60	**Halaphanolaimus pellucidus* SOUTHERN	—	—	—	—	+	+	—	—	—	—	—	+
61	**Leptolaimus setiger* SCHUURMANS STEKHOVEN & DE CONINCK	—	—	—	—	+	—	—	—	—	—	—	—

	FAM. **TRIPYLOIDIDAE**												
62	**Bathylaimus assimilis* DE MAN	—	—	—	—	+	—	—	+	—	—	—	—
63	*Bathylaimus filicaudatus* (SCHUURMANS STEKHOVEN & ADAM)	—	—	+	—	—	—	—	—	—	—	—	—
64	**Bathylaimus macramphis* SCHUURMANS STEKHOVEN & DE CONINCK	—	—	—	—	+	—	—	—	—	—	—	—
65	**Bathylaimus paralongisetosus* SCHUURMANS STEKHOVEN & DE CONINCK	—	—	—	—	+	—	—	—	—	—	—	—
66	**Bathylaimus stenolaimus* SCHUURMANS STEKHOVEN & DE CONINCK	—	—	—	—	+	—	—	—	—	—	—	—
67	**Tripyloides marinus* (BUETSCHLI)	—	—	—	—	+	—	—	+	—	+	—	+
68	*Tripyloides septentrionalis* DE CONINCK & SCHUURMANS STEKHOVEN	—	—	+	—	+	—	—	—	+	—	+	+
	ORDER **MONHYSTEROIDEA**												
	FAM. **MONHYSTERIDAE**												
69	**Theristus setosus* (BUETSCHLI)	—	—	—	—	+	—	+	+	+	+	+	+
70	**Theristus parasetosus* ALLGÉN	—	—	—	—	+	—	—	—	—	—	+	—
71	**Theristus acrilabiatus* DE CONINCK & SCHUURMANS STEKHOVEN	—	—	—	—	+	—	—	—	—	—	—	—
72	**Theristus normandicus* DE MAN	—	—	—	—	+	+	+	—	+	—	+	—
73	*Theristus acer* BASTIAN	—	—	+	—	+	+	+	+	—	+	+	—
74	**Theristus calceolatus* DE CONINCK & SCHUURMANS STEKHOVEN	—	—	—	—	+	—	—	—	—	—	—	—
75	**Theristus longisetosus* SCHUURMANS STEKHOVEN & DE CONINCK	—	—	—	—	+	—	—	—	—	—	—	—
76	**Theristus tenuispiculum* (DITLEVSEN)	—	—	—	—	+	—	—	—	+	—	+	+
77	**Steineria mirabilis* SCHUURMANS STEKHOVEN & DE CONINCK	—	—	—	—	+	—	—	—	—	—	—	—
78	*Monhystera microphthalma* DE MAN	+	+	—	—	+	—	—	+	+	—	—	+
79	**Monhystera disjuncta* BASTIAN	—	—	—	—	+	—	+	+	—	+	+	+
80	*Monhystera ocellata* BUETSCHLI	+	+	—	—	—	—	—	+	—	—	—	+
81	**Monhystera parva* (BASTIAN)	—	—	—	—	+	—	+	+	+	+	+	+
82	**Eleutherolaimus stenosoma* (DE MAN)	—	—	—	—	+	—	—	+	+	—	+	+
	FAM. **SPHAEROLAIMIDAE**												
83	*Sphaerolaimus gracilis* DE MAN	+	+	—	—	—	—	—	+	+	—	—	—
	ORDER **ANGUILLULOIDEA**												
	FAM. **ANGUILLULIDAE**												
84	**Rhabditis marina* BASTIAN	—	—	—	—	+	—	+	—	—	+	+	+
85	*Cephalobus oxyuroides* 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 beween 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 adaptibility, 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 **1932***a* and **1932***b*. (Cf. Table XII.)

TABLE XII

	Absolute bodylength in μ	Absolute bodywidth in μ	Absolute taillength in μ	Absolute œsophagus 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 prooves to be rather constant. During growth, the width of an animal increases inconspicuously. In males it augments with 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 ½ of the original length, whereas the total body-length may be sextuplated 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 1932*a* and 1932*b*.)

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 *Paracanthonchus 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 1932*a*.

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* looses 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 1922*a*, 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,

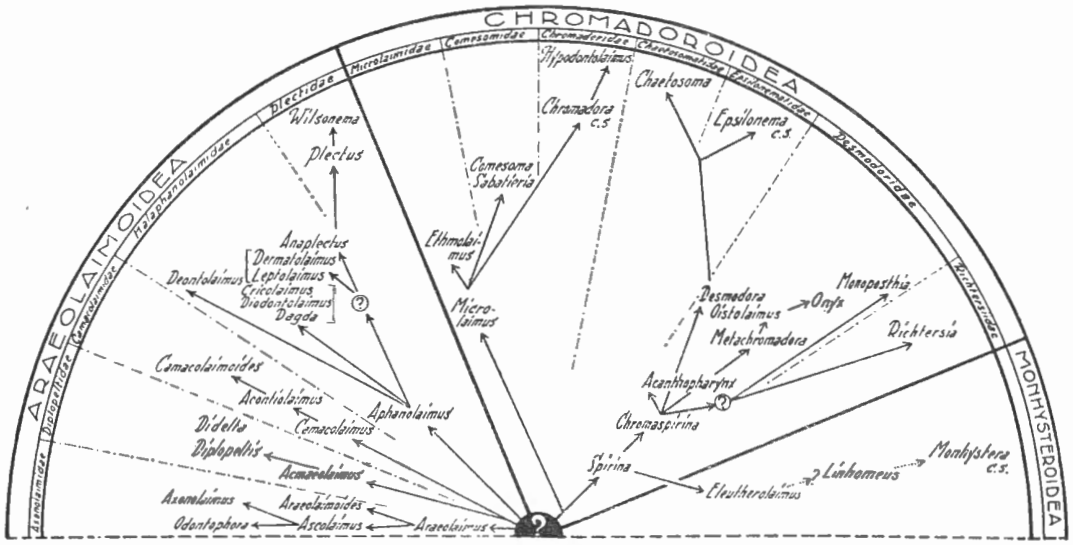
freeliving as well as parasitic ones was given in 1926 by Baylis and Daubney.

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 *Diplopeltis* 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 1933*b*.)

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 *Eleutherolaimus*, 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 prooved 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 granulosus* (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 = *Aracolaimoides* 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 smarigdus* 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 = *Chromadorina 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.

SYSTEMATICAL PART [1]

Order I : ENOPLOIDEA

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 lateron prooved 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 michaelseni* 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* Ditlevsen 1911.
6. *Enoplus behringicus* Filipjev 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 prooves that no essential differences exist between both forms.
10. *Enoplus brevis* Bastian 1865, p. 150.
    Confer also De Man 1886, p. 27.

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[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* FILIPJEV 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* FILIPJEV 1918, p. 82 = *Enoplus hirtus* MARION 1870, p. 459.
    Confer FILIPJEV (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* FILIPJEV 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* FILIPJEV 1926, p. 101.
37. *Enoplus medius* KREIS 1928, p. 153 = *Enoplus crassus* FILIPJEV 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 michaelseni* 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 1929*b*, 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 michaelseni* 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 1929*b*, 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 speciës 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 × the anal-diameter :

Enoplus constrictus DITLEVSEN.

AA. Width at the end of the tail larger than 0,10 × the anal-diameter :

a. Cephalic setae very short, less than 0,20 × 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 × S :

B. Ocelli or pigment-spots absent :

c. The 4 shorter submedian setae ± 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.

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(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 × S :

Enoplus michaelseni VON LINSTOW.

hh. Cephalic height at least 0,25 × S :

j. Length of tail in the male 1,5 ×, in the female 2,25 × the anal-diameter. Spicula without a distal elevation :

Enoplus crassus FILIPJEV.

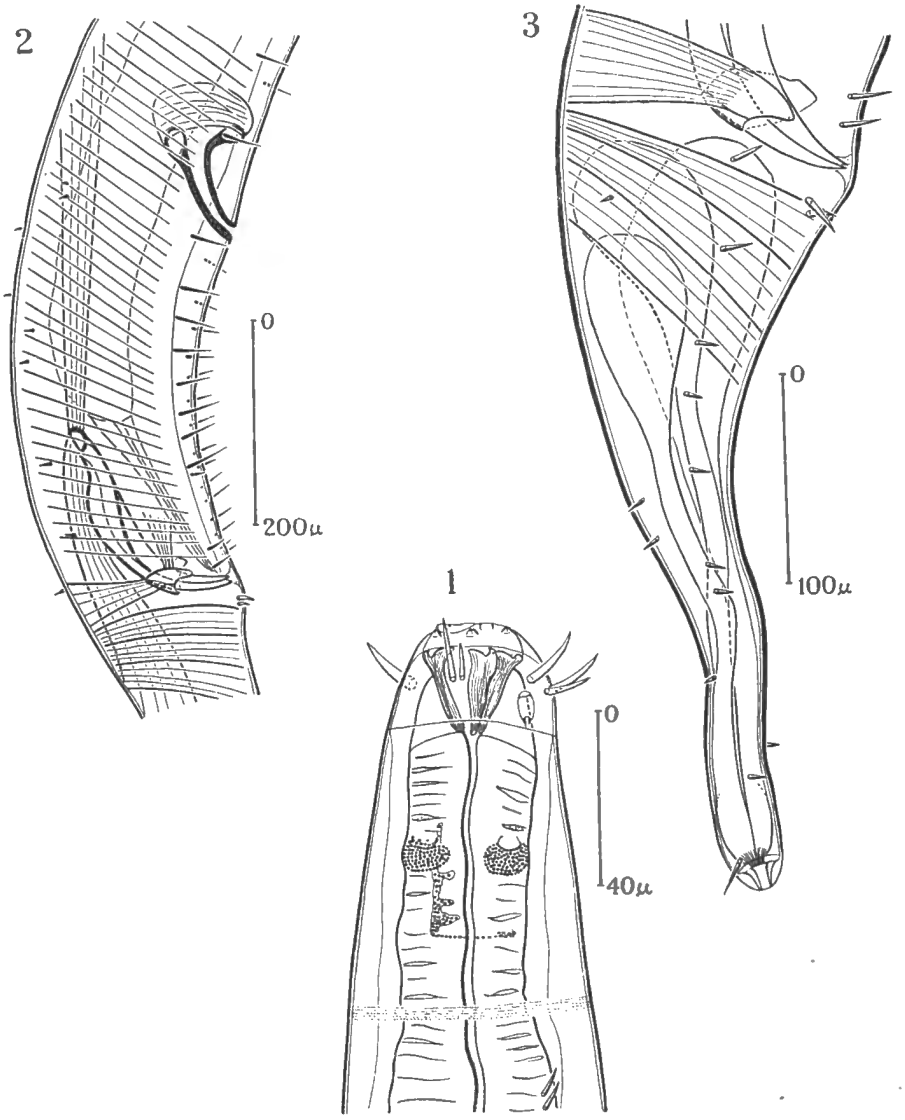
jj. Length of tail in the male 2 ×, in the female 3,3 × the anal-diameter. Spicula with a distal elevation :

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 1932*c*, 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 1929*b*, p. 438, fig. 4*a-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 °/₀₀.

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 proportionnally 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 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 ½ ± 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* Filipjev 1925, p. 143;
II. *Enoplolaimus* s. str. Filipjev 1925, p. 144, and
III. *Oxyonchus* Filipjev 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 1932*b*, 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 1916*a*, 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 1921*b*, p. 54, fig. A[1] = *Enoploides italicus* (STEINER).
25. *Enoplolaimus karensis* FILIPJEV 1925, p. 152 = *Mesacanthion karense* (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 1932*b*, 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 1922*a*, p. 132 and 1922*b*, p. 257.
35. *Enoplolaimus ssaveljevi* ALLGÉN 1929*a*, 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 1929*a*, p. 16.
42. *Enoplolaimus graciliseto sus* ALLGÉN 1930*e*, p. 189, fig. 1-3.
43. *Enoplolaimus macrochaetus* ALLGÉN 1929*a*, p. 15, as far as may be concluded from the very insufficient figures, probably belongs to the genus *Enoploides* BUETSCHLI.
44. *Enoplolaimus paradentatus* ALLGÉN 1932*b*, 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 1929*b*, p. 441.
46. *Enoplolaimus similis* ALLGÉN 1929*a*, p. 14.
    May be *Enoplolaimus vulgaris* DE MAN, but impossible to decide from figure and text.
47. *Enoplolaimus stateni* ALLGÉN 1930*c*, 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 × S :
Enoplolaimus vulgaris DE MAN.

BB. The long cephalic setae reach 1,5-2 × S :

b. The four shorter submedian setae reach 1,5 × S :
Enoplolaimus halophilus DITLEVSEN.

bb. The four shorter submedian setae at the utmost 1 × 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.

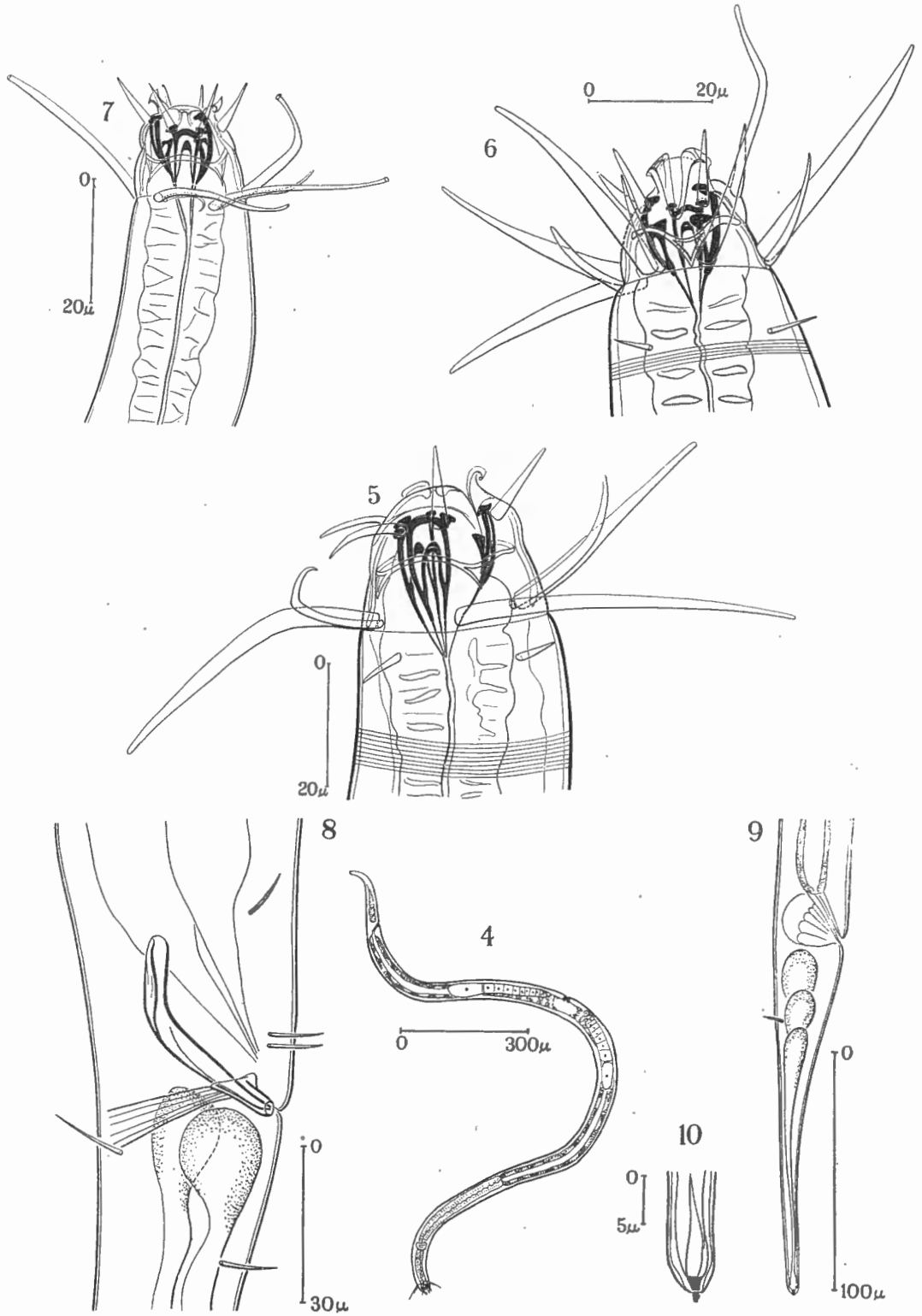
Fig. 4-10.

REFERENCES :

DE MAN 1922*b*, p. 257, fig. 47*a-b*.
DE MAN 1922*a*, 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 hammerlike 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. *Nervering* 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 FILIPJEV 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 1932*c*, 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 occuring 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.

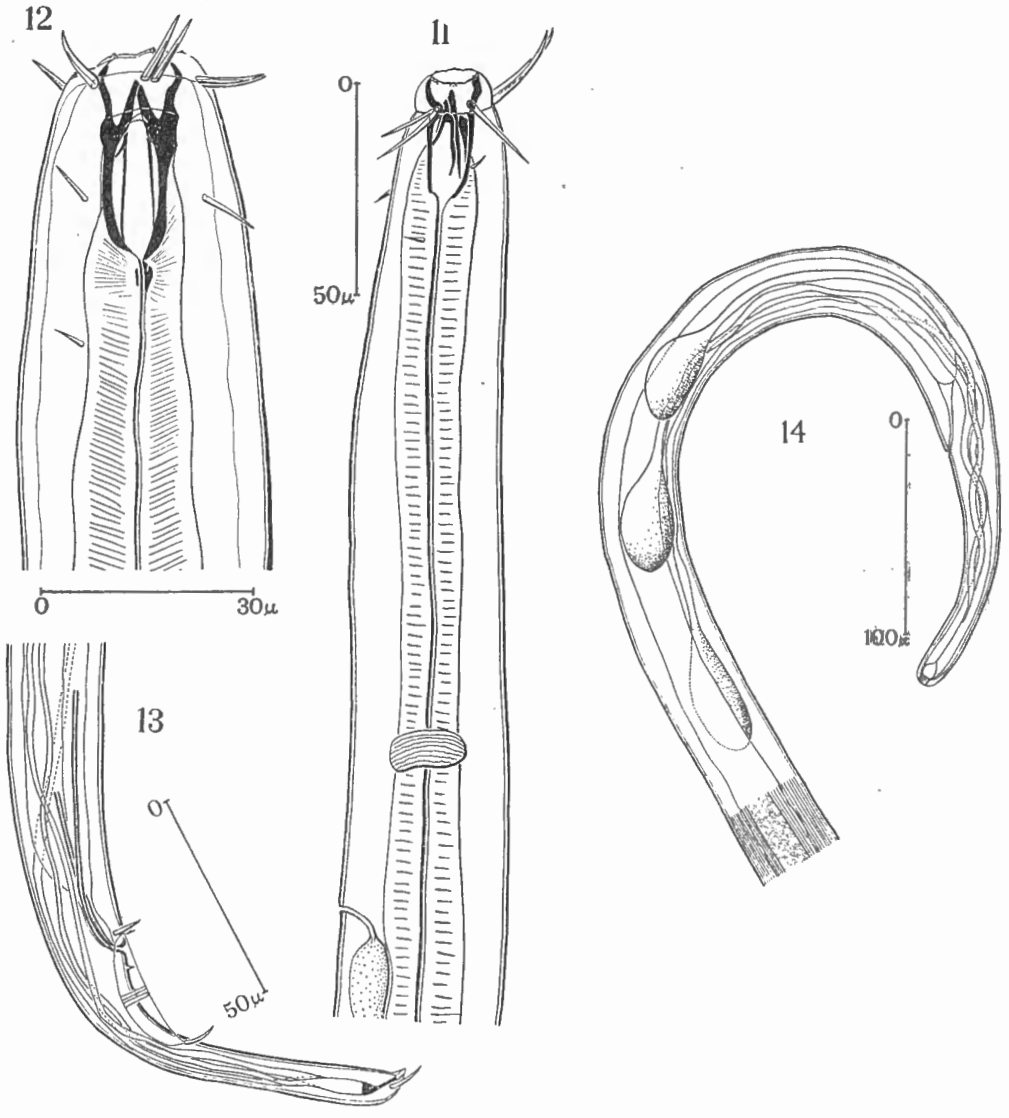
Syn. : *Oncholaimus littoralis* Allgén.

References :

De Man 1890, p. 190, pl. V, fig. 10-10*e*.
Allgén 1929*b*, p. 442, fig. 8*a-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 × 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 × 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 × 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 cutilarised wall 2 other teeth are found, a dorsal and a second subventral one.

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

Nervering at 0,37-0,40 of the œsophageal 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 10*a*. 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 × 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 1927*a*, p. 51.
ALLGÉN 1929*c*, pp. 11-12.
ALLGÉN 1929*a*, p. 18.
ALLGÉN 1931, p. 223.
COBB 1930, p. 227.
DE CONINCK 1930, p. 123.
DITLEVSEN 1911, p. 225.
FILIPJEV 1918, p. 110.
FILIPJEV 1924, p. 105.
FILIPJEV 1929, p. 680.
VAN HÖFFEN 1917, p. 139.
DE MAN 1876, p. 181, pl. 12-13, fig. 48*a-c*.
DE MAN 1884, p. 68, pl. 10, fig. 39.
DE MAN 1889, p. 162, pl. 6, fig. 1*a-c*.
DE MAN 1922*b*, p. 254, fig. 45*a-c*.
MICOLETZKY 1921, p. 334.
RIECK 1928.
SCHNEIDER, G. 1906, p. 33, fig. 15*a-c*, *O. lepidus*.
SCHNEIDER, G. 1926*a*, p. 223.
SCHNEIDER, G. 1926*b*, p. 10.
SCHNEIDER, W. 1924, p. 215.
SCHULZ, E. 1932, p. 352.
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 × corresponding cephalic diameter. Proportions of the tail : length, 4,2 × anal diameter; width at the end, 0,25 × 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 prooves 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. 3*a-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 1922*a*, 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.

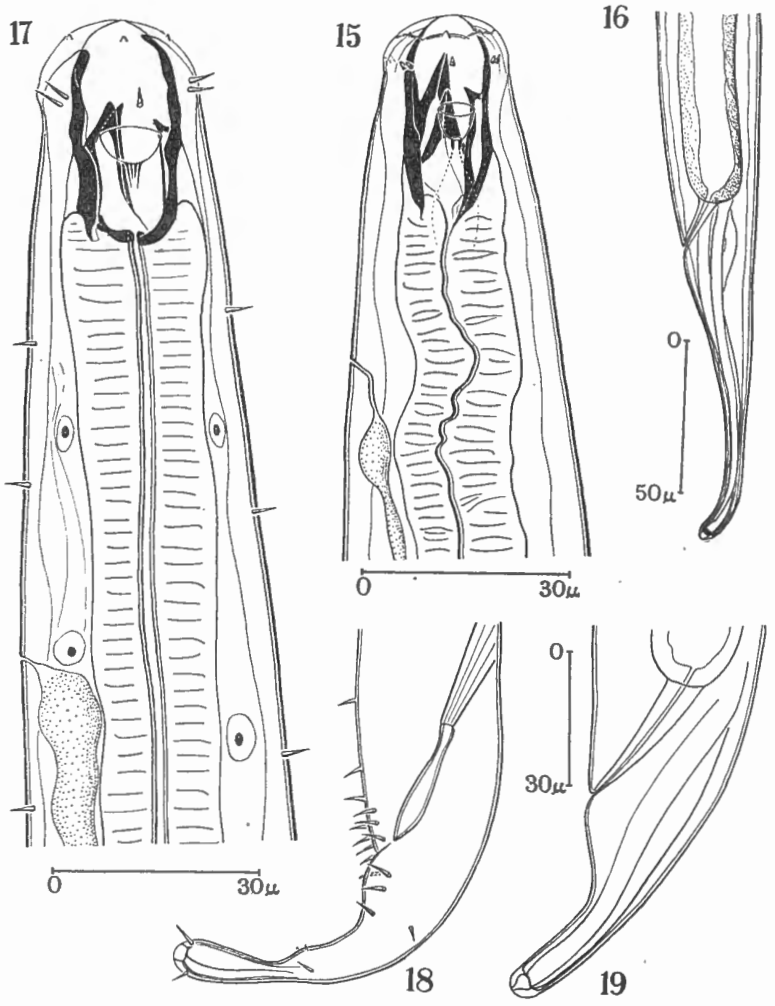
Head with 6 lips and as much small labial papillae; anterior end rounded; 10 cephalic setae, the paired ones of almost equal size, 0,2 × corresponding

cephalic diameter, in a juvenile ♀ 0,37 × corresponding cephalic diameter (fig. 17).

Buccal cavity 2,25 × 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 sligthly shorter.

Œsophagus broadening towards the posterior end.

Ventral gland situated behind the posterior end of the œsophagus.



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.

Nervering 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 ½ conical, second ½ 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 ½ conical, gradually tapering to the cylindrical posterior ½, 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 ressemblance 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 rigth 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. 3*b*.

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 1929*c*, p. 11.
Allgén 1931, p. 224.
Allgén 1932*b*, p. 113, fig. 9.
Allgén 1932*c*, p. 407.
Buetschli 1874, p. 39, pl. 9, fig. 39*a-c*, *O. albidus*.
Filipjev 1925, p. 171.
De Man 1889*a*, p. 5.
De Man 1889*b*, p. 211, pl. 8, fig. 12-12*e*.
De Man 1922*b*, p. 253, fig. 44*a-b*.
Ssaveljev 1912, p. 125.
Schulz 1932, p. 351, fig. 9*a-c*, *O. marinus*.
Nec Steiner 1916, p. 603, pl. 28, fig. 23*a-b*, = *Paroncholaimus* 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 %.

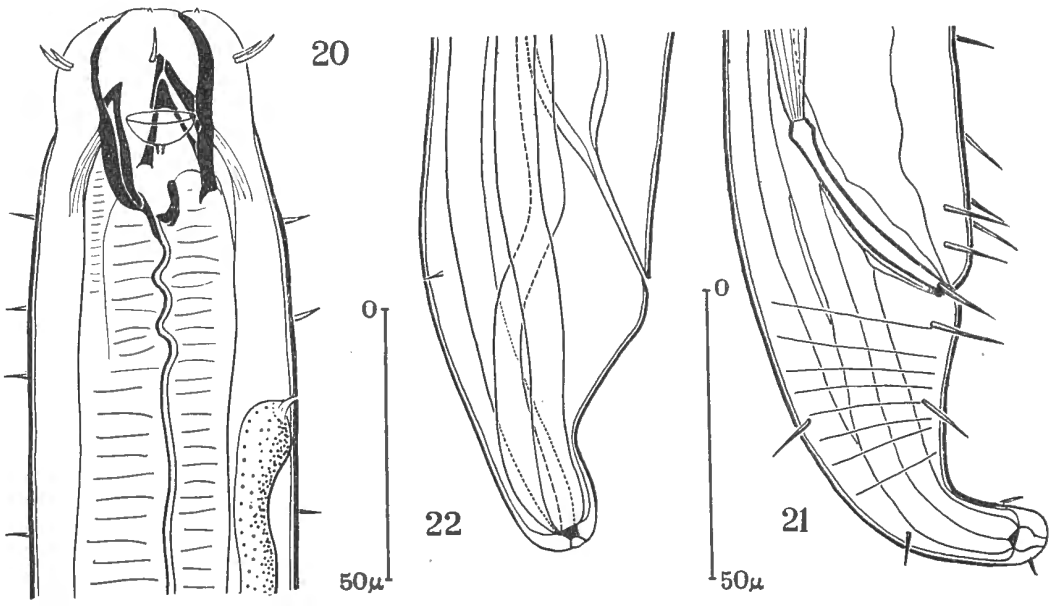
In general, our specimen quite agree with those of De Man, so that some additional notes may suffice.

Amphids in the male, 0,35 × corresponding body diameter (fig. 20).

The longer *cephalic setae* are in the male 0,29 × body diameter, the shorter ones 0,20 × 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 poximal 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 × 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 1927*a*, p. 51.
Allgén 1929*c*, p. 9.
Carter 1859, p. 43, pl. 3, fig. 32.
De Coninck 1932, p. 10, fig. 3.
Ditlevsen 1911, p. 230, pl. 2, fig. 8, 9, 12 et 13.
Schneider, G. 1926*b*, p. 9, var. *esknaensis*.
Schneider, G. 1926*a*, p. 222.

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).

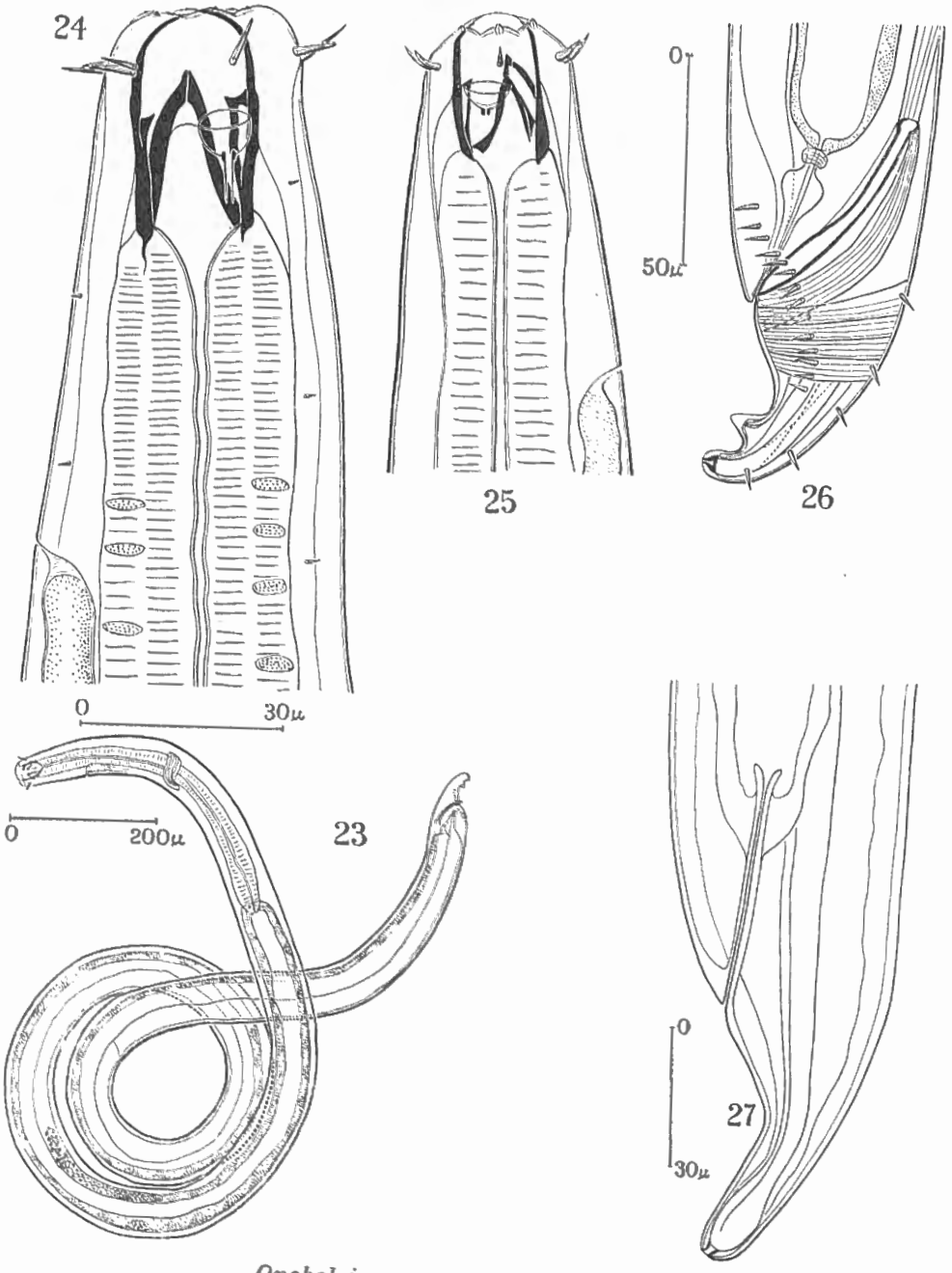
Œsophagus typical. *Nervering* on 0,48 × œsophageal length.

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 ressembles 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 ½ 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 FILIPJEV 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. 39*a-c*, identified by DE MAN with his species *O. brachycercus*.
3. *Metoncholaimus albidus* (BASTIAN), DE MAN 1878, p. 93, pl. VII, fig. 2*a-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 prooves 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 easely 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 1929*c*, p. 12.
ALLGÉN 1929*a*, p. 17.
ALLGÉN 1931, p. 224.
BASTIAN 1865, p. 136, pl. XI, fig. 131-133.
BUETSCHLI 1874, p. 39, pl. 9, fig. 38.
KREIS 1929, p. 33.
DE MAN 1890, p. 184, pl. IV, fig. 7.
DE MAN 1922*b*, p. 258.
SCHULZ 1932, p. 354, fig. 11*a-c*.

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, preanal 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 ANOPLOSTOMA BUETSCHLI 1874.

Syn. : *Symplocostoma* BASTIAN ex parte.
Oncholaimellus DE MAN ex parte.

11. **Anoplostoma blanchardi** DE MAN 1888.

REFERENCES :

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

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

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

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 ressemblance 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. 16-16*c*.

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.

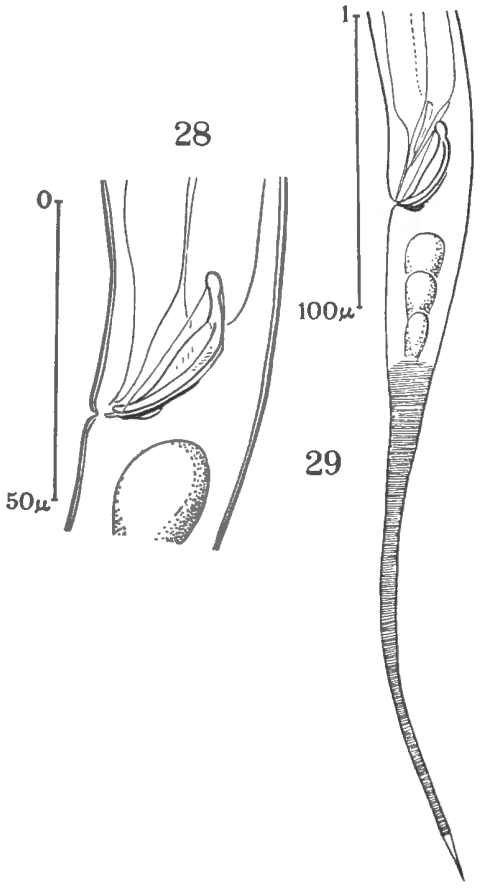
Fig. 28-29.

Syn. : *Syringolaimus smarigdus* Cobb 1928.

References :

Allgén 1929*a*, p. 23.
Cobb 1928, p. 249, fig. 1, *S. smarigdus*.
De Coninck 1932*b*, p. 17, fig. 7-9.
De Man 1888, p. 35, pl. III-IV, fig. 16.
Micoletzky 1924, p. 255.
Micoletzky 1930, p. 335.
Steiner 1918, p. 5.
Steiner 1921*b*, p. 11, pl. I, fig. 2*a-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 additonal 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 oulet it is only 0,125 × anal diameter wide. Bulbus œsophagi 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. 6*a-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 nervering 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 μ = 0,32 × corresponding body diameter. In the female they are slightly smaller and measure 0,25 × 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 10μ = 0,4 × the cephalic diameter, the other 4 reach 2/3 of the longer ones.

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

Œsophagus cylindrical.

Ventral gland situated on 0,8 × the length of the œsophagus behind the base of the œsophagus. *Excretory pore* opens just in front of the nervering, at 0,6 × œsophageal 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 ½.

Spicula : 0,77 × anal diameter.

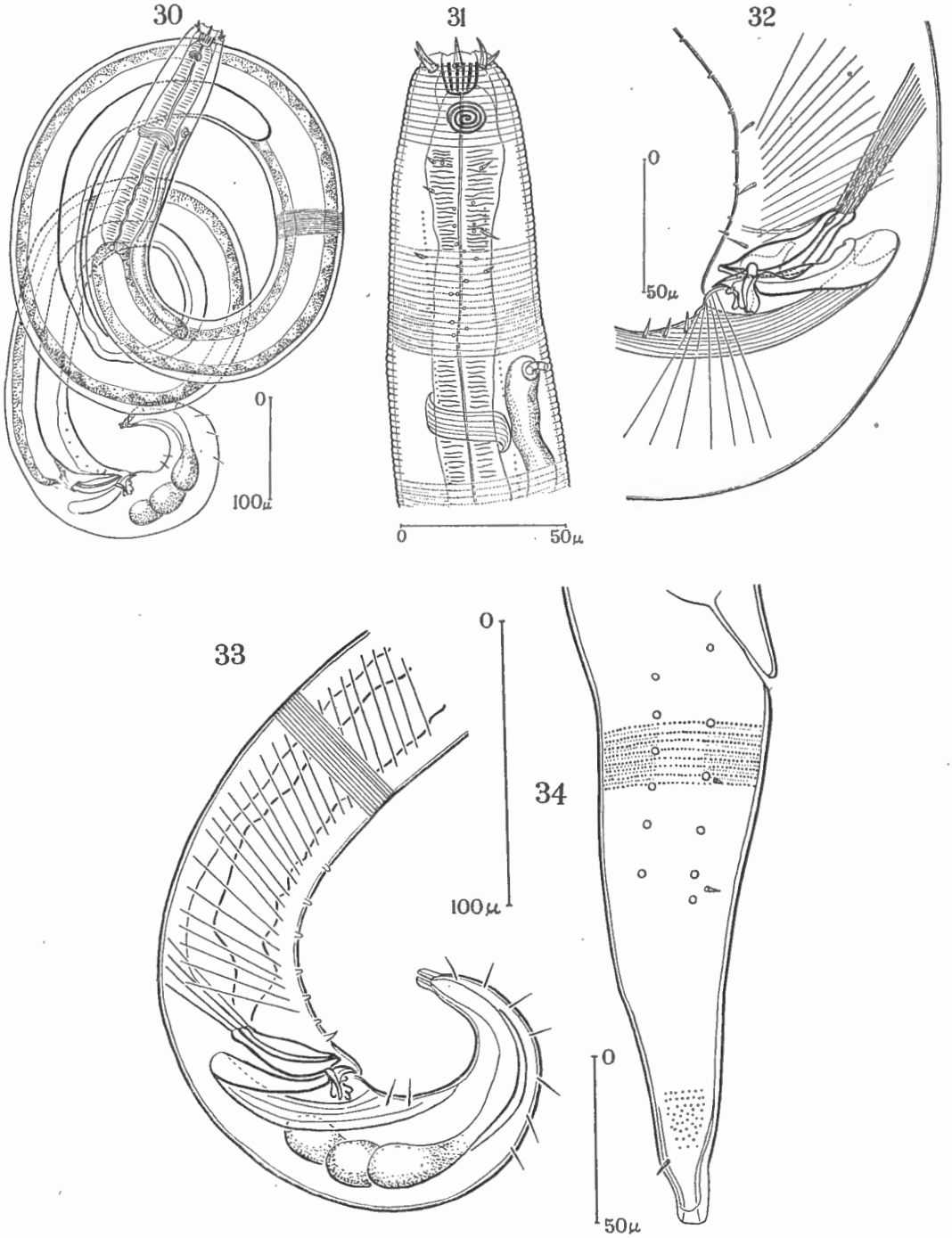
Accessory piece 1 anal diameter long, very complicated and strong, consisting of a small irregularly shaped median piece and two large lateral plates, the proximal parts of which being at the same time the widest portions, narrowing to the distal ends where strong, pointed expansions occur, set off against 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 scarse 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 fluide.



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 ditlevseni 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. ditlevseni*.
Southern 1914, p. 29, *C. ocellatus*.

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

A thorough comparison of the mentioned species with the text and the figures given by De Man and Filipjev prooves 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 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 :

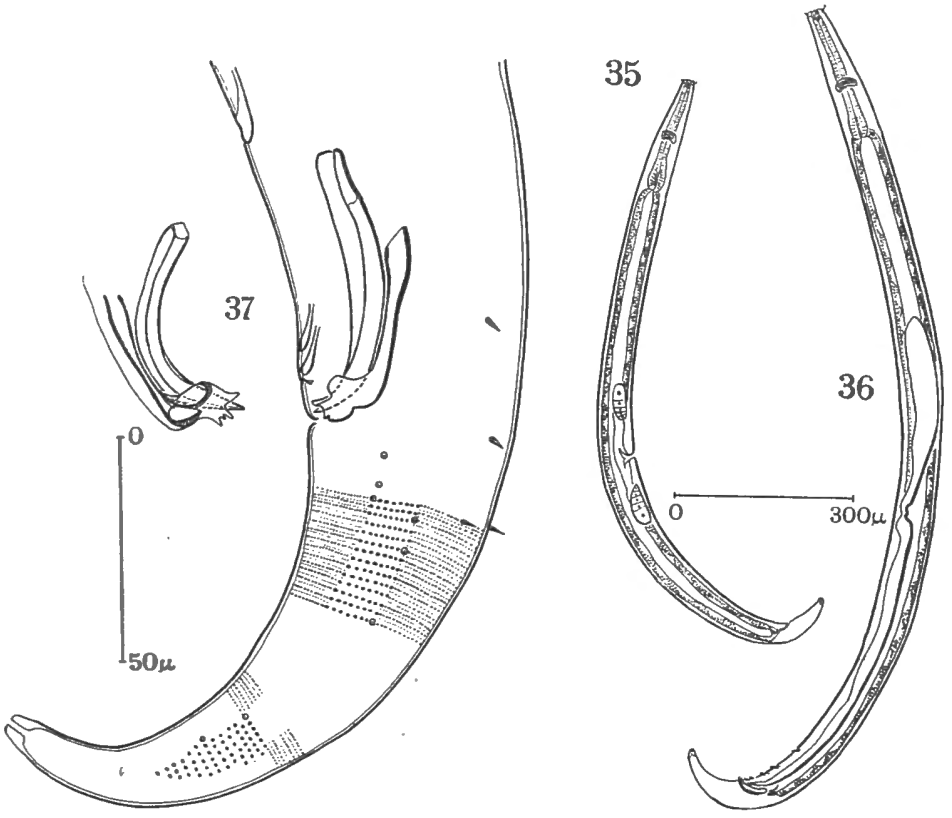
Allgén 1927*a*, p. 53.
Allgén 1927*b*, p. 268.
Allgén 1928*b*, p. 36, fig. 1-2.
Allgén 1929*c*, p. 17.
Allgén 1929*a*, p. 26.
Allgén 1931, p. 233.
Allgén 1932*c*, p. 409.
Bastian 1865, p. 163, pl. 13, fig. 213-214
Ditlevsen 1919, p. 198, pl. XV, fig. 4.
Nec Filipjev 1922*a*, p. 113, pl. I, fig. 10.
Kreis 1929, p. 43.
De Man 1889*b*, p. 204, pl. VII, fig. 10-10*g*.
De Man 1922*b*, p. 238, fig. 27.
De Rouville 1904, p. 790.
Ssaveljev 1912, p. 123.
Steiner 1915, p. 230.
Steiner 1916, p. 586.
Steiner 1921*b*, 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 Saedeleer).



Paracanthonchus coecus (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. 7*a-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. 38-39.

GENUS DESMODORA DE MAN 1889.

17. **Desmodora serpentulus** DE MAN 1889.

Syn. : *Desmodora leucocephala* SCHULZ 1932.

REFERENCES :

ALLGÉN 1929*a*, p. 30.
ALLGÉN 1931, p. 236.
ALLGÉN 1932*a*, p. 443, fig. 2.
ALLGÉN 1932*c*, p. 411.
DITLEVSEN 1919, p. 195.
DE MAN 1889, p. 188, pl. V, fig. 4.
SCHULZ 1932, p. 384, fig. 28*a-f*.
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.

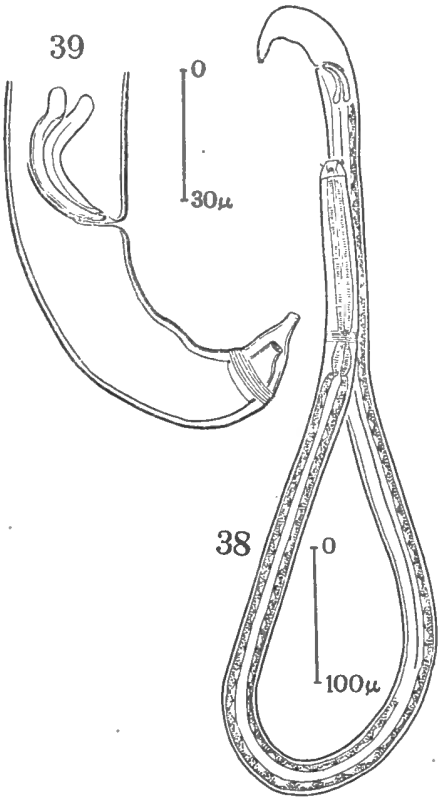
Syn. : *Bradylaimus* SCHUURMANS STEKHOVEN 1931.

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 œsophagus had been wholly withdrawn from the buccal



Desmodora serpentulus DE MAN.

38. General view of a male.
39. Spicular apparatus and tail of a moulding 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 œsophagus. A smaller ventral spear is present.

Œsophagus 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 œsophagus. The inner lining of the œsophageal 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 1929*c*, p. 25, fig. 5*a-d*.

Allgén 1931, p. 238.

Schuurmans Stekhoven 1931, p. 648, fig. 6*a-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.

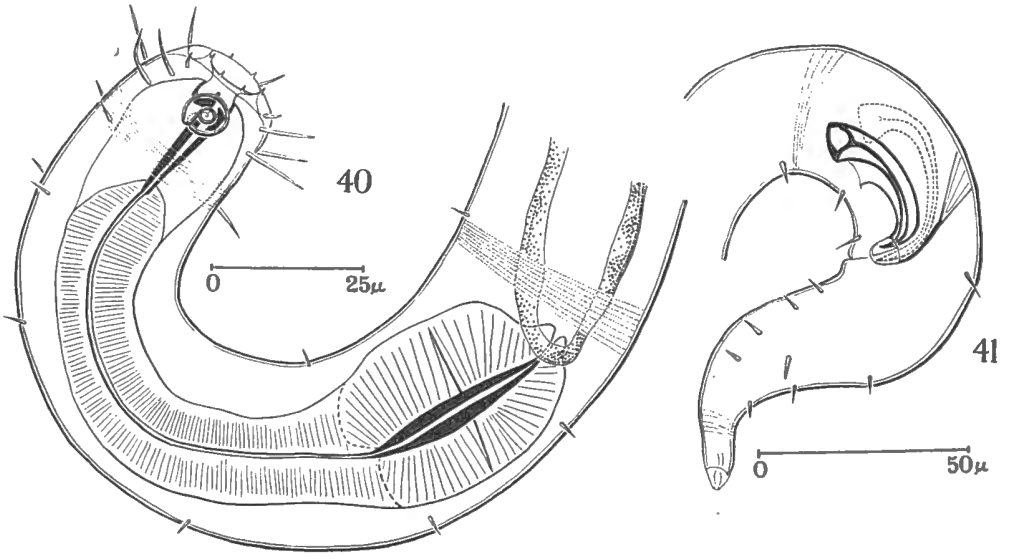
Allgén's :

♂. 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 × the maximal width.
Cuticular pointed rings till in front of the amphids.



Oistolaimus suecicus ALLGÉN.
40. Anterior end of a juvenile.
41. Spicular apparatus and tail of a male.

Amphids 7,5μ in diameter, opposite to the buccal teeth, 0,33 × corresponding cephalic diameter.

Head. Labial papillae in a juvenile 1,25μ long, in an adult ♂ and ♀ till 4 × as long as in the juvenile specimens.

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

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

Neither *nervering* 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 proove 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.

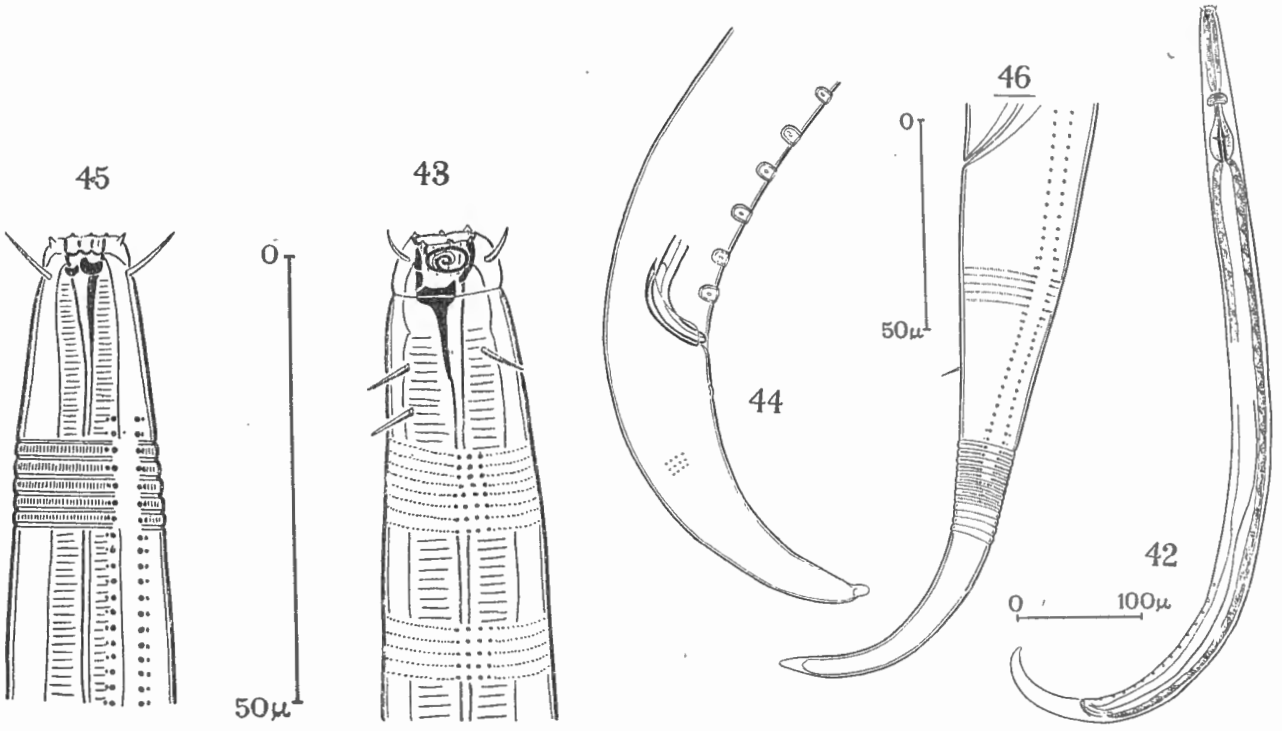
REFERENCES :

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

ALLGÉN 1929*a*, p. 36.
ALLGÉN 1932*c*, p. 415.
Nec ALLGÉN 1932*c*, p. 415, var. *bergensis*.
DE MAN 1889*b*, p. 197, pl. VI, fig. 7.
SCHNEIDER, G. 1927, p. 10.
STEINER 1916, p. 532, pl. 18, fig. 2*a-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 × 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*b*, p. 208.
ALLGÉN 1928*c*, p. 297.
ALLGÉN 1929*c*, p. 22.
ALLGÉN 1929*a*, p. 35.
ALLGÉN 1931, p. 242.
DE MAN 1889*b*, p. 199, pl. VI, fig. 8.
DE MAN 1922*b*, p. 246, fig. 37*a-b*.
SCHUURMANS STEKHOVEN & ADAM 1931, p. 39, pl. VIII, fig. 8-11, *C. parva*.
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 × 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 renforcement in the wall of the buccal cavity, just like De Man depicts in his fig. 8*a*.

Œsophagus with a distinct bulb, 0,23 × 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 1929*c*, p. 23.
Allgén 1929*a*, p. 36.
Allgén 1931, p. 242.
Allgén 1932*c*, p. 417.
Ditlevsen 1919, p. 191.
De Man 1893, p. 96, pl. VI, fig. 7.
De Man 1922*b*, p. 247, fig. 38*a-d*.
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 nervering to the anal opening nearly cylindrical. Width at the anterior end 2/3 of that in the middle of the body.

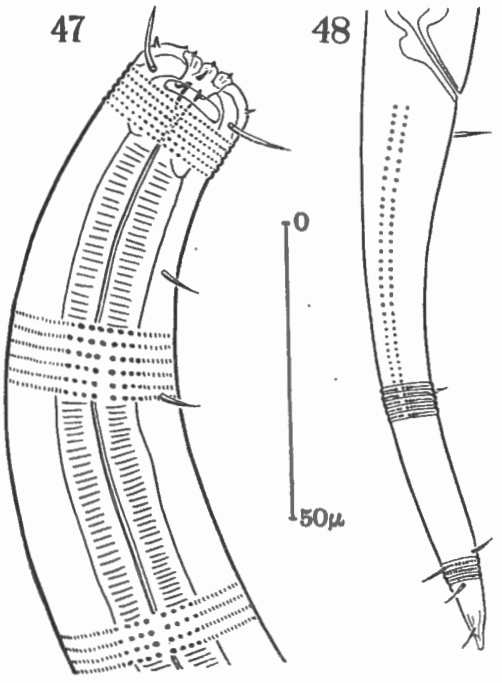
Cuticula distinctly ringed, the rings marked by points. The lateral fields possess distinctly larger dots than the ventral and dorsal surface of the skin. These larger dots are arranged in longitudinal rows. The space between the 4th and 5th row of points is slightly larger than that which separates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



Neochromadora poecilosoma (DE MAN).

47. Anterior end of a female.
48. Tail of a female.

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

Nervering at 55 % of the œsophageal 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. 10*a-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 transversaly 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 × 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.

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

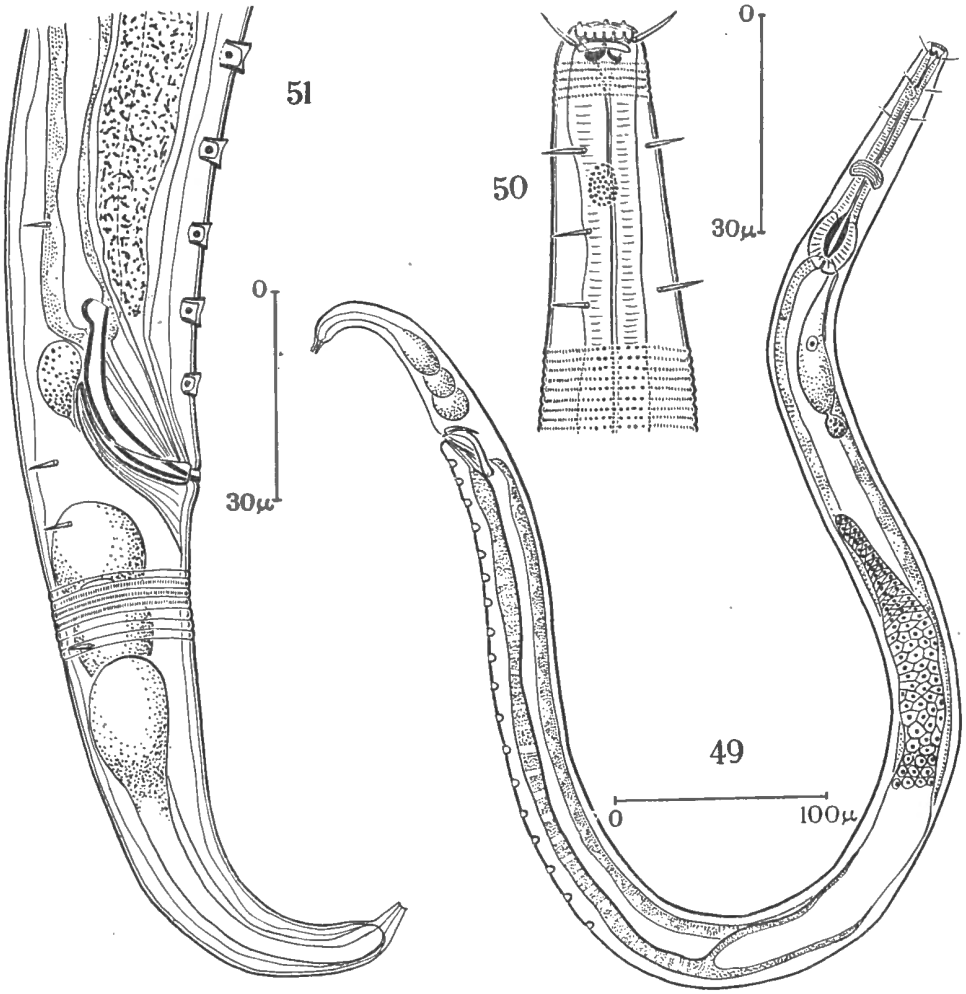
Base of the *ventral gland* at 1,6 × œsophageal length from the anterior end, with a small adherent cell.

Excretory pore not observed.

Nervering on 0,58 × the œsophageal 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 1928*a*, p. 257, *C. natans.*
ALLGÉN 1929*a*, p. 38, *id.*
ALLGÉN 1931, p. 242, *id.*
ALLGÉN 1932*c*, 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 1922*b*, 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 %.

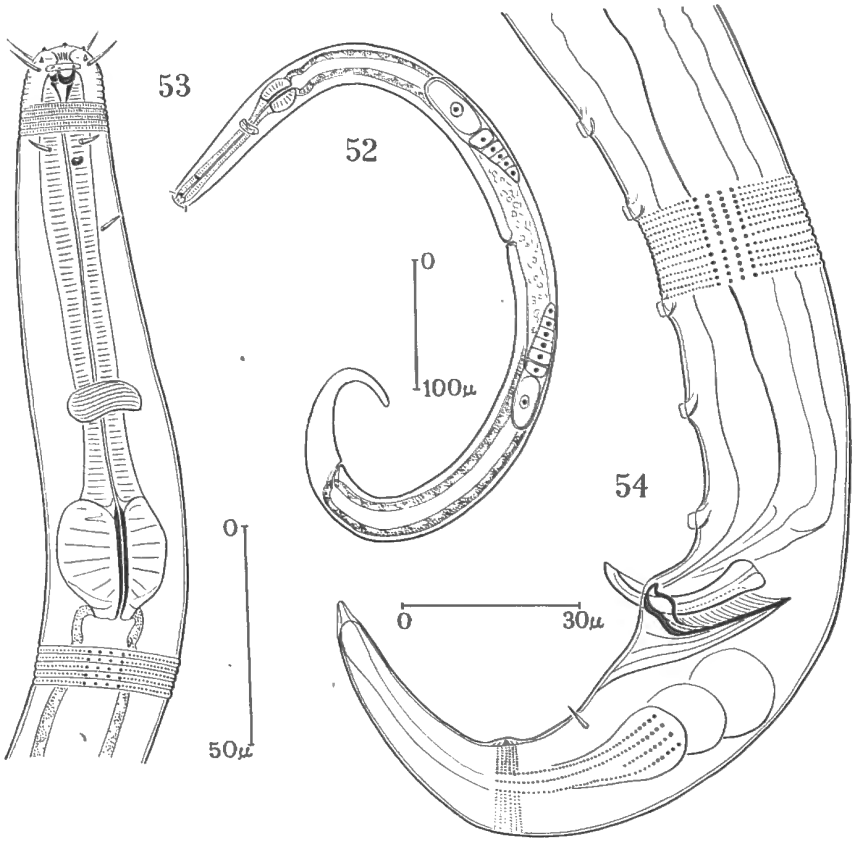
Habitus : Confer fig. 52. Body gradually tapering towards the anterior end, where it measures 0,4 — 0,5 × maximal width.

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 × 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 × œsophageal length. *Nervering* 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			27,5		26,5	

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

	145	375	420	465	510	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.

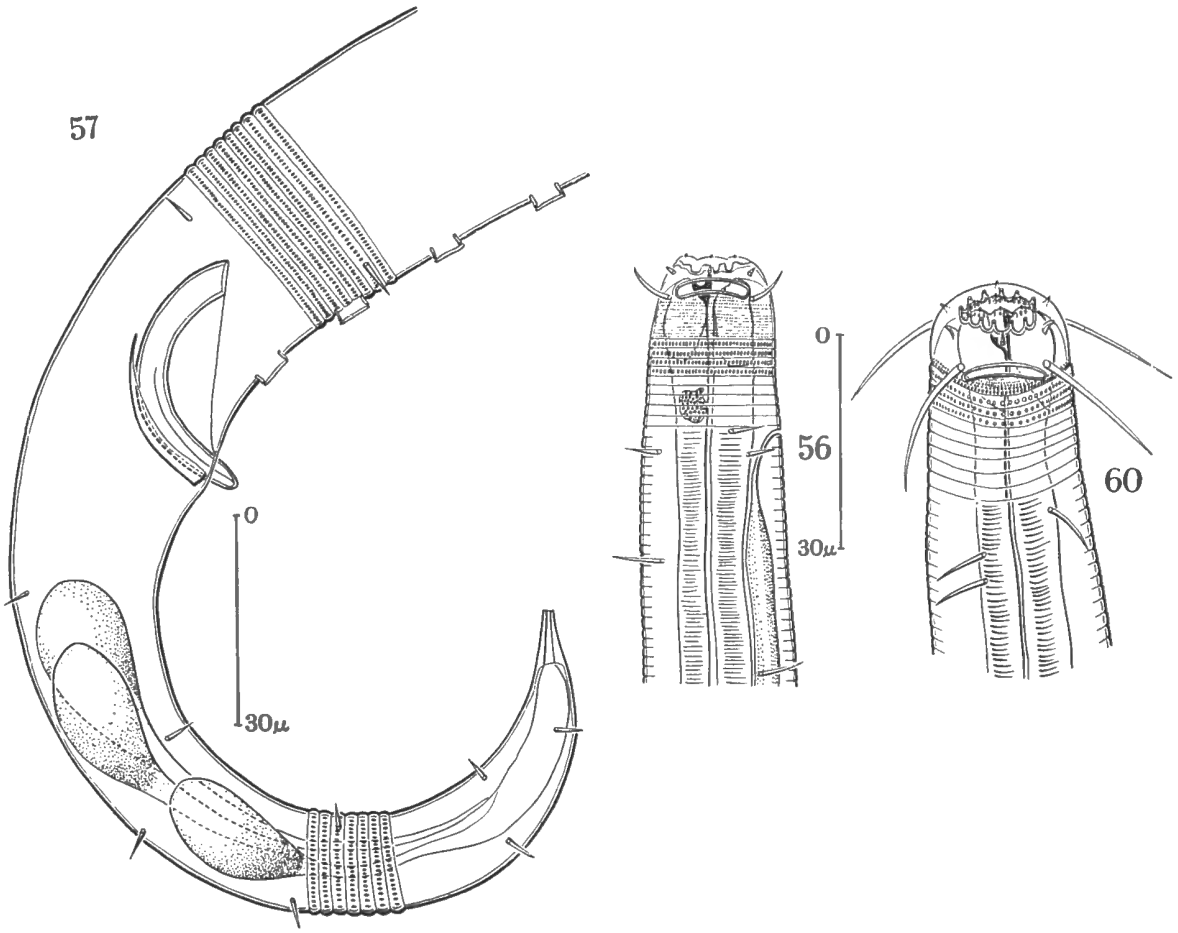
Head obtusely rounded, with 6 lips and as many labial papillae, 6 conical, setiform cephalic papillae and 4 cephalic setae, 0,4 × cephalic diameter.

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.

Œsophagus differentiated around the buccal cavity, slightly swollen; than cylindrical. Posterior bulb not strongly swollen, 0,2 × œsophageal 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. *Nervering* 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.

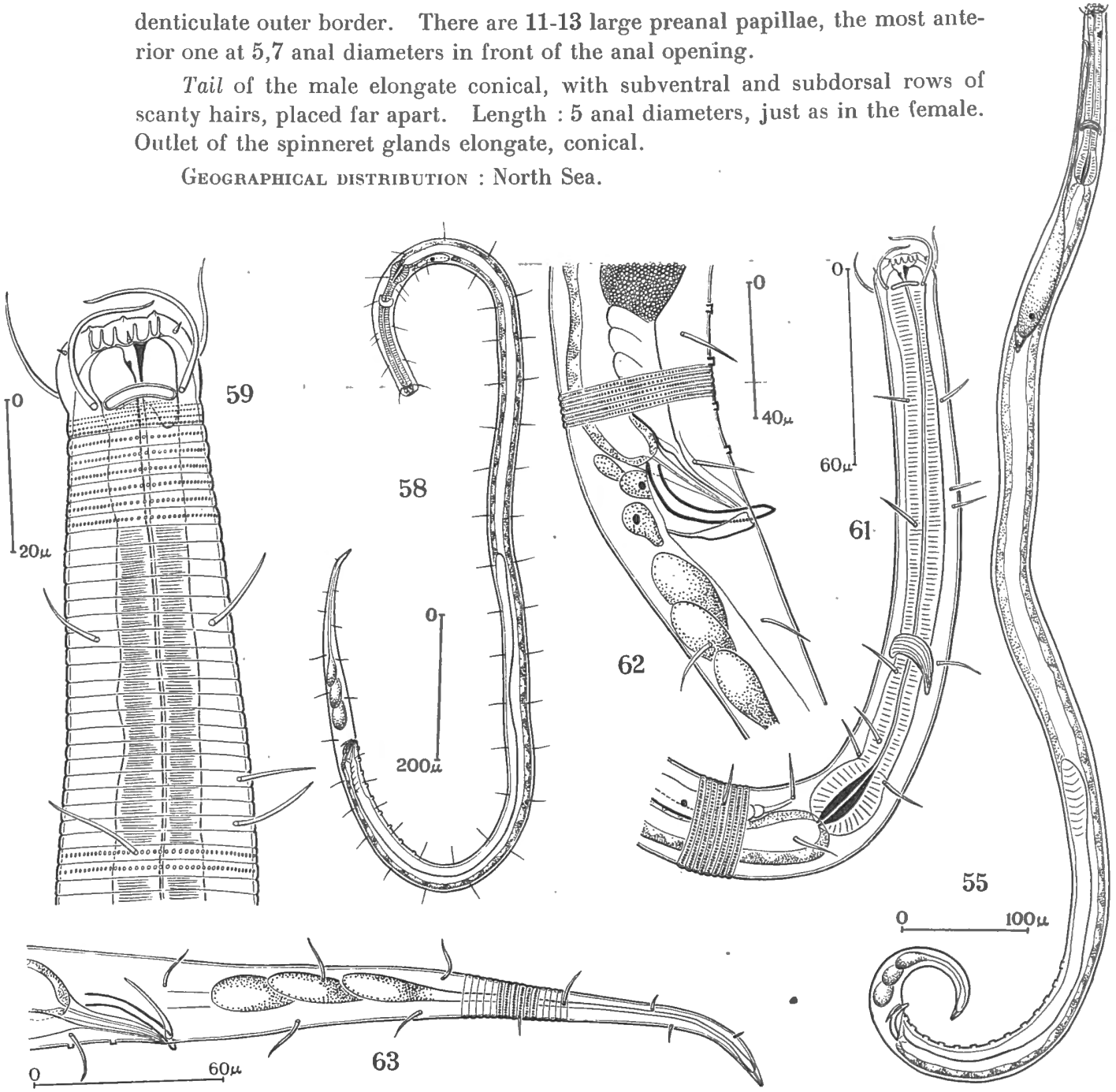
Female genital tract paired, symmetrical; ovaries reflexed; vulvar glands present.

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.
59. Head end of a male.
61. Anterior end of a male.
62. Spicular apparatus of a male.
63. Tail 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	1451	1,72 mm.
17		29,6	36,5		29,6	

♀. 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 2,1μ apart. Numerous, 23μ 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*.

Œsophagus with an anterior differentiation around the buccal cavity. Posterior bulb with strong inner lining, 0,13 × œsophageal length.

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

Nervering at 63 % of the œsophageal 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 :

	125	305	M.	785	0,915 mm.
20	26		30	26	

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 11μ 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 *Paracanthonchus*.

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 3,5μ long; the 4 cephalic setae are 14μ long, or 0,75 × 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 wih the amphids, one finds 2 small subventral denticles.

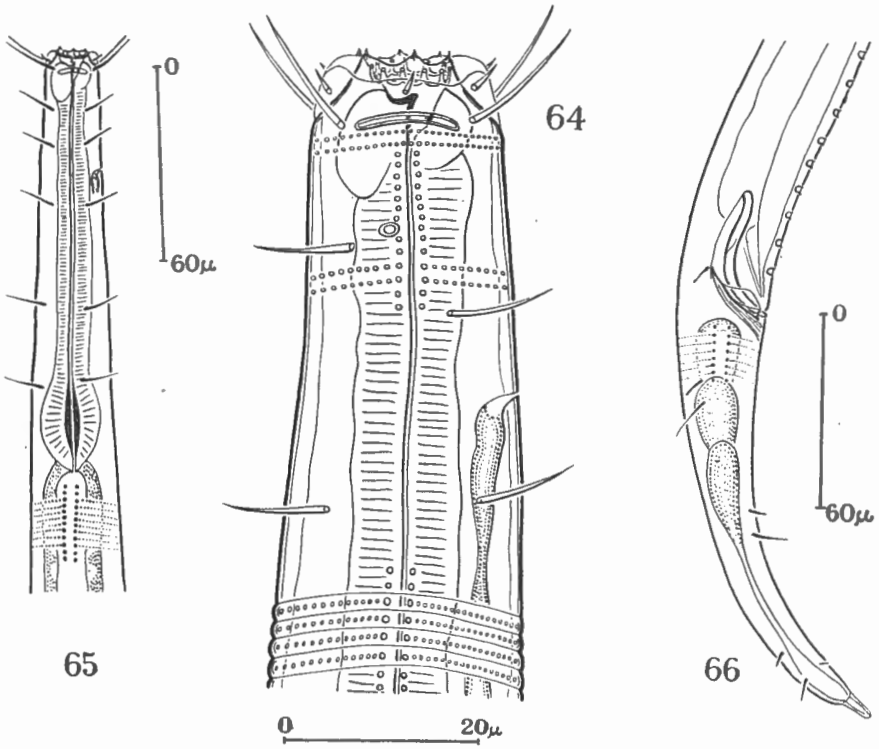
Œsophagus with a very distinct swollen differentiation around the buccal cavity, strongest at the dorsal side. Posterior bulb with strong inner lining, 0,22 × œsophageal length.

Excretory pore at 35μ = 1,84 × 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. : *Spiliphera* BASTIAN ex parte.

27. **Hypodontolaimus bütschlii** FILIPJEV 1918.

Fig. 67-69.

Syn. : *Spilophora inaequalis* BUETSCHLI nec BASTIAN.
Hypodontolaimus striatus DITLEVSEN

REFERENCES :

ALLGÉN 1927*a*, p. 55, *H. striatus*.
ALLGÉN 1929*c*, p. 24, *id.*
ALLGÉN 1929*a*, 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 1929*b*, p. 250, fig. 41*a-b*, *H. striatus*.

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

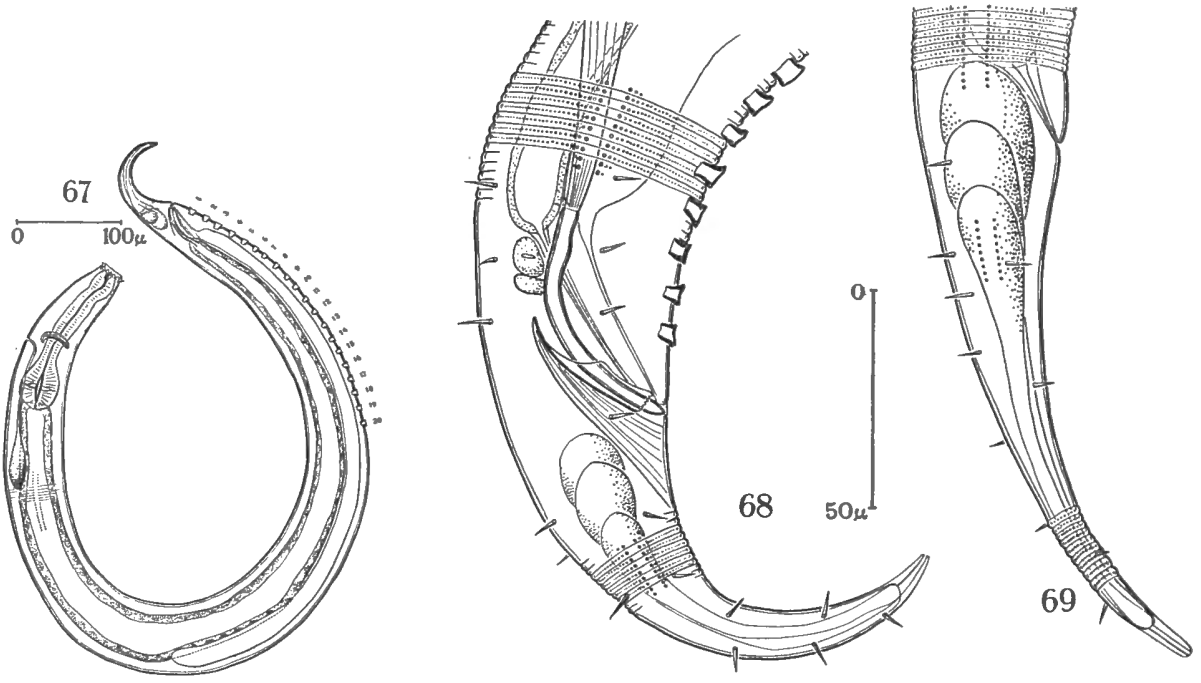
DIMENSIONS : ♂. L. : 1,185 mm.; α : 16,2; β : 7,46; γ : 10,2.

Cobb's formula :

	85	157,5	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 bütschlii 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. *Œsophagus* with an anterior swelling. Posterior bulb 0,27 × œsophageal length. *Excretory pore* situated just behind the nervering which lies at 45 %

of the œsophageal length. Ventral gland at 1/2 × 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 1929*a*, p. 48.
De Man 1907*a*.
De Man 1907*b*, p. 66, pl. I, fig. 12; pl. III, fig. 12*a-b*, *d-i*; pl. IV, fig. 12*c*.
De Man 1922*b*, 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 1922*b*, p. 207, pl. V, fig. 10*a-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 :

101	170	350	800	?	1448	1,480 mm.
13	42		60		60 12	

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