THE FREELIVING MARINE NEMAS OF THE BELGIAN COAST. II

WITH GENERAL REMARKS ON THE STRUCTURE AND THE SYSTEM OF NEMAS

BY


(Ghent) (Utrecht)

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

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INTRODUCTION

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

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

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

The study of the nemic fauna of the Belgian Coast is of special importance as may easily be understood. The Zwyn reaches to the Dutch frontier and partly even surpasses it. In its interior the water is brackish; to the west its salinity equals that of the North Sea. Opposite to the Zwyn, on the island Walcheren lays Veere and other places along the Schelde, which De Man studied in former years. So it was certainly no pure luck that we rediscovered several of the species described by De Man during the period running from 1888-1893 and not found back until now.
At the other hand the Belgian Coast water stays in continual communication with the coastal seas of France and England, which point was already mentioned in the first monograph (Schuurmans Stekhoven & Adam).

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

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

At the other hand this study brought us to synonymize many species and even Genera. This is no surprise when one takes into consideration that several authors have not given themselves enough trouble to make an elaborate study of the present literature while others apparently had an incomprehensible lack of understanding 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>
<thead>
<tr>
<th>N.</th>
<th>ORDER</th>
<th>SPECIES</th>
<th>JUV.</th>
<th>♂</th>
<th>♀</th>
<th>TOTAL</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>C.</td>
<td>Chromadora nudicapitata</td>
<td>26</td>
<td>130</td>
<td>114</td>
<td>270</td>
<td>60,4</td>
</tr>
<tr>
<td>2.</td>
<td>M.</td>
<td>Theristus acer</td>
<td>23</td>
<td>28</td>
<td>9</td>
<td>60</td>
<td>13,42</td>
</tr>
<tr>
<td>3.</td>
<td>M.</td>
<td>Monhystera parva</td>
<td>7</td>
<td>15</td>
<td>9</td>
<td>31</td>
<td>6,93</td>
</tr>
<tr>
<td>4.</td>
<td>M.</td>
<td>Monhystera disjuncta</td>
<td>10</td>
<td>8</td>
<td>8</td>
<td>26</td>
<td>5,72</td>
</tr>
<tr>
<td>5.</td>
<td>C.</td>
<td>Chromadorina macroalma</td>
<td>1</td>
<td>5</td>
<td>7</td>
<td>13</td>
<td>2,91</td>
</tr>
<tr>
<td>6.</td>
<td>E.</td>
<td>Metaparoncholaimus campylocercus</td>
<td>10</td>
<td>—</td>
<td>1</td>
<td>11</td>
<td>2,46</td>
</tr>
<tr>
<td>7.</td>
<td>C.</td>
<td>Paracanthonchus caecus</td>
<td>9</td>
<td>2</td>
<td>—</td>
<td>11</td>
<td>2,46</td>
</tr>
<tr>
<td>8.</td>
<td>Ar.</td>
<td>Azonolaimus paraspinosus</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>7</td>
<td>1,56</td>
</tr>
<tr>
<td>9.</td>
<td>C.</td>
<td>Chromadora spec. (kreisi?)</td>
<td>—</td>
<td>—</td>
<td>3</td>
<td>3</td>
<td>0,67</td>
</tr>
<tr>
<td>10.</td>
<td>E.</td>
<td>Enoplus communis</td>
<td>2</td>
<td>—</td>
<td>—</td>
<td>2</td>
<td>0,45</td>
</tr>
<tr>
<td>11.</td>
<td>E.</td>
<td>Oncholaimellus calvadosicu</td>
<td>1</td>
<td>—</td>
<td>1</td>
<td>2</td>
<td>0,45</td>
</tr>
<tr>
<td>12.</td>
<td>Ar.</td>
<td>Odontophora armata</td>
<td>1</td>
<td>—</td>
<td>1</td>
<td>2</td>
<td>0,45</td>
</tr>
<tr>
<td>13.</td>
<td>Ar.</td>
<td>Halaphanolaimus pellucidus</td>
<td>1</td>
<td>—</td>
<td>2</td>
<td>1</td>
<td>0,22</td>
</tr>
<tr>
<td>14.</td>
<td>C.</td>
<td>Prochromadorella germanica</td>
<td>—</td>
<td>—</td>
<td>1</td>
<td>1</td>
<td>0,22</td>
</tr>
<tr>
<td>15.</td>
<td>C.</td>
<td>Sabatieria vulgaris</td>
<td>—</td>
<td>—</td>
<td>1</td>
<td>1</td>
<td>0,22</td>
</tr>
<tr>
<td>16.</td>
<td>M.</td>
<td>Theristus setosus</td>
<td>—</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0,22</td>
</tr>
<tr>
<td>17.</td>
<td>M.</td>
<td>Theristus spec.</td>
<td>—</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0,22</td>
</tr>
<tr>
<td>18.</td>
<td>M.</td>
<td>Monhystera spec. 1</td>
<td>—</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0,22</td>
</tr>
<tr>
<td>19.</td>
<td>M.</td>
<td>Monhystera spec. 2</td>
<td>—</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0,22</td>
</tr>
</tbody>
</table>

Total... | 99 | 195 | 133 | 447 | 100

Division of the specimens after the orders:

Chromadoroidea ........................................... 300 67,46
Monhysteroidea ........................................... 121 28,05
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**

<table>
<thead>
<tr>
<th>N. Order</th>
<th>SPECIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. M.</td>
<td>Theristus aequicostatus</td>
</tr>
<tr>
<td>2. M.</td>
<td>Monhystera microphthalmus</td>
</tr>
<tr>
<td>3. C.</td>
<td>Paracentonchus caecus</td>
</tr>
<tr>
<td>4. C.</td>
<td>Microlaimus hirundo</td>
</tr>
<tr>
<td>5. An.</td>
<td>Rhabditis marina</td>
</tr>
<tr>
<td>6. C.</td>
<td>Chromadora nudicapitata</td>
</tr>
<tr>
<td>7. M.</td>
<td>Theristus calceolatus</td>
</tr>
<tr>
<td>8. Ar.</td>
<td>Araeolaimus filipjevi</td>
</tr>
<tr>
<td>9. E.</td>
<td>Oncholaimus brachycercus</td>
</tr>
<tr>
<td>10. Ar.</td>
<td>Tripyloides marinus</td>
</tr>
<tr>
<td>11. E.</td>
<td>Enoplus communis</td>
</tr>
<tr>
<td>12. C.</td>
<td>Chromodorita obtusidens</td>
</tr>
<tr>
<td>13. Ar.</td>
<td>Axonolaimus spinosus</td>
</tr>
<tr>
<td>14. C.</td>
<td>Chromodorina macrostoma</td>
</tr>
<tr>
<td>15. Ar.</td>
<td>Ascolaimus elongatus</td>
</tr>
<tr>
<td>16. M.</td>
<td>Theristus setosus</td>
</tr>
<tr>
<td>17. C.</td>
<td>Chromadora spec.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Juv.</th>
<th>♀</th>
<th>♂</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>83</td>
<td>48</td>
<td>29</td>
<td>160</td>
<td>46,5</td>
</tr>
<tr>
<td>9</td>
<td>20</td>
<td>11</td>
<td>40</td>
<td>11,6</td>
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<tr>
<td>16</td>
<td>10</td>
<td>14</td>
<td>40</td>
<td>11,6</td>
</tr>
<tr>
<td>7</td>
<td>3</td>
<td>12</td>
<td>22</td>
<td>6,4</td>
</tr>
<tr>
<td>17</td>
<td>1</td>
<td>1</td>
<td>19</td>
<td>5,5</td>
</tr>
<tr>
<td>3</td>
<td>5</td>
<td>9</td>
<td>17</td>
<td>4,9</td>
</tr>
<tr>
<td>5</td>
<td>3</td>
<td>2</td>
<td>10</td>
<td>2,9</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
<td>1</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>3</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>3</td>
<td>6</td>
<td>1,7</td>
</tr>
<tr>
<td>4</td>
<td>—</td>
<td>1</td>
<td>5</td>
<td>1,4</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>—</td>
<td>4</td>
<td>1,1</td>
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<td>3</td>
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<td>0,29</td>
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<tr>
<td>—</td>
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<td>1</td>
<td>0,29</td>
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<tr>
<td>—</td>
<td>—</td>
<td>1</td>
<td>1</td>
<td>0,29</td>
</tr>
<tr>
<td>—</td>
<td>—</td>
<td>1</td>
<td>1</td>
<td>0,29</td>
</tr>
</tbody>
</table>

**Total...** 157 98 89 344 100

Division of the specimens after the orders:

Monhysteroidea ........................................... 241 61,3
Chromadoroidea ........................................... 85 24,7
Anquilluloidea ........................................... 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 °/oo.

<table>
<thead>
<tr>
<th>N. Order</th>
<th>Species</th>
<th>Juv.</th>
<th>♂</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>C. Sabatieria vulgaris</td>
<td></td>
<td>2</td>
<td>2</td>
<td>6.45</td>
</tr>
<tr>
<td>2.</td>
<td>C. Dichromadora spec.</td>
<td></td>
<td>1</td>
<td>1</td>
<td>3.23</td>
</tr>
<tr>
<td>3.</td>
<td>M. Monhystera spec.</td>
<td></td>
<td>27</td>
<td>27</td>
<td>87.09</td>
</tr>
<tr>
<td>?</td>
<td>not identifiable</td>
<td></td>
<td></td>
<td></td>
<td>87.09</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td>31</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

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 °/oo.

<table>
<thead>
<tr>
<th>N. Order</th>
<th>Species</th>
<th>Juv.</th>
<th>♂</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>E. Oncholaimus oxyris</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>66.66</td>
</tr>
<tr>
<td>2.</td>
<td>E. Adoncholaimus thalassophygas</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>33.33</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>3</td>
<td>3</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

### TABLE V

Oostende, sand with shells from a puddle on the strand at the side of a breakwater; 18-XI-1931; NaCl : 29.3 °/oo.

<table>
<thead>
<tr>
<th>N. Order</th>
<th>Species</th>
<th>Juv.</th>
<th>♂</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>An. Rhabditis marina</td>
<td>16</td>
<td>1</td>
<td>12</td>
<td>27.90</td>
</tr>
<tr>
<td>2.</td>
<td>Ar. Ascolaimus elongatus</td>
<td>1</td>
<td>4</td>
<td>5</td>
<td>11.63</td>
</tr>
<tr>
<td>3.</td>
<td>M. Monhystera spec.</td>
<td>6</td>
<td>1</td>
<td>7</td>
<td>16.28</td>
</tr>
<tr>
<td>4.</td>
<td>M. Theristus acer</td>
<td>4</td>
<td>1</td>
<td>5</td>
<td>11.63</td>
</tr>
<tr>
<td>5.</td>
<td>E. Enoplolaimus propinquus</td>
<td>4</td>
<td>1</td>
<td>4</td>
<td>9.30</td>
</tr>
<tr>
<td>6.</td>
<td>C. Paracanthonchus caecus</td>
<td></td>
<td></td>
<td>1</td>
<td>2.32</td>
</tr>
<tr>
<td>7.</td>
<td>C. Dichromadora hyalocheile</td>
<td></td>
<td></td>
<td>1</td>
<td>2.32</td>
</tr>
<tr>
<td>8.</td>
<td>C. Cyatholaimus spec.</td>
<td></td>
<td></td>
<td>1</td>
<td>2.32</td>
</tr>
<tr>
<td>9.</td>
<td>Ar. Odontophora longicaudata</td>
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<td>1</td>
<td>1</td>
<td>2.32</td>
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<tr>
<td>10.</td>
<td>Ar. Bathylaimus paralongisetosus</td>
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<td></td>
<td>1</td>
<td>2.32</td>
</tr>
<tr>
<td>11.</td>
<td>Ar. Bathylaimus stenolaimus</td>
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<td></td>
<td>1</td>
<td>2.32</td>
</tr>
<tr>
<td>12.</td>
<td>Ar. Leptolaimus setiger</td>
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<td></td>
<td>1</td>
<td>2.32</td>
</tr>
<tr>
<td>13.</td>
<td>M. Steinera mirabilis</td>
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<td>1</td>
<td>2.32</td>
</tr>
<tr>
<td></td>
<td>Total</td>
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<td>13</td>
<td>43</td>
<td>100</td>
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</tbody>
</table>

|                   |
Division of the specimens after the orders:

Monhysteroidea .................................................. 771 81.41
Anguilluloidea .................................................. 80 8.44
Araeolaimoidea .................................................. 49 5.47
Enoploidea ......................................................... 47 4.98
TABLE VII
Knokke-Zoute, breakwater; 28-XII-1931.

<table>
<thead>
<tr>
<th>No.</th>
<th>Order</th>
<th>Species</th>
<th>Juv.</th>
<th>♂</th>
<th>♀</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>E.</td>
<td>Enoplus communis</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>5</td>
<td>35.71</td>
</tr>
<tr>
<td>2.</td>
<td>C.</td>
<td>Chromadorita longisetosa</td>
<td>—</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>21.43</td>
</tr>
<tr>
<td>3.</td>
<td>M.</td>
<td>Theristus acer</td>
<td>1</td>
<td>2</td>
<td>—</td>
<td>3</td>
<td>21.43</td>
</tr>
<tr>
<td>4.</td>
<td>C.</td>
<td>Paracanthochmus caecus</td>
<td>—</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>7.14</td>
</tr>
<tr>
<td>5.</td>
<td>C.</td>
<td>Sabatieria quadripapillata</td>
<td>—</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>7.14</td>
</tr>
<tr>
<td>6.</td>
<td>M.</td>
<td>Theristus normandicus</td>
<td>—</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>7.14</td>
</tr>
</tbody>
</table>

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 \(^\circ/100\).

<table>
<thead>
<tr>
<th>No.</th>
<th>Order</th>
<th>Species</th>
<th>Juv.</th>
<th>♂</th>
<th>♀</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>C.</td>
<td>Chromadora nudicapitata</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>26.66</td>
</tr>
<tr>
<td>2.</td>
<td>C.</td>
<td>Chromadorita obtusidens</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>4</td>
<td>26.66</td>
</tr>
<tr>
<td>3.</td>
<td>M.</td>
<td>Monhystera disjuncta</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>6.66</td>
</tr>
<tr>
<td>4.</td>
<td>E.</td>
<td>Enoplus communis</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>6.66</td>
</tr>
<tr>
<td>5.</td>
<td>C.</td>
<td>Paracanthochmus caecus</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>6.66</td>
</tr>
<tr>
<td>6.</td>
<td>C.</td>
<td>Chromadorita longisetosa</td>
<td>—</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>6.66</td>
</tr>
</tbody>
</table>

Total: 4 5 6 15 100

Nemic index: 0.46.

Division of the specimens after the orders:

- Chromadoroidea: 4 26.66%
- Monhysteroidea: 1 6.66%
- 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 \(^{°/00}\).

<table>
<thead>
<tr>
<th>N.</th>
<th>ORDER</th>
<th>SPECIES</th>
<th>Juv.</th>
<th>( \Phi )</th>
<th>( \delta )</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>C.</td>
<td>Chromadora nudicapitata</td>
<td>1</td>
<td>26</td>
<td>8</td>
<td>35</td>
<td>53,03</td>
</tr>
<tr>
<td>2.</td>
<td>E.</td>
<td>Enoplolaimus propinquus</td>
<td>5</td>
<td>1</td>
<td>2</td>
<td>8</td>
<td>12,42</td>
</tr>
<tr>
<td>3.</td>
<td>M.</td>
<td>Theristus tenvispiculum</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>4</td>
<td>6,06</td>
</tr>
<tr>
<td>5.</td>
<td>Ar.</td>
<td>Tripyloides septentrionalis</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>4,54</td>
</tr>
<tr>
<td>6.</td>
<td>E.</td>
<td>Syringolaaimus striaticaudatus</td>
<td>1</td>
<td>2</td>
<td></td>
<td>12</td>
<td>3,03</td>
</tr>
<tr>
<td>7.</td>
<td>C.</td>
<td>Catholaimus punctatus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>C.</td>
<td>Neochromadora poecilosoma</td>
<td></td>
<td></td>
<td>2</td>
<td>2</td>
<td>3,03</td>
</tr>
<tr>
<td>9.</td>
<td>M.</td>
<td>Theristus longisetosus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>E.</td>
<td>Metaparoncholaimus campylocercus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>E.</td>
<td>Viscosia viscosa</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>C.</td>
<td>Oistolaimus suecicus</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>5</td>
<td>1,51</td>
</tr>
<tr>
<td>13.</td>
<td>M.</td>
<td>Theristus setosus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>M.</td>
<td>Monhystera microphthalmal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**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 \(^{°/00}\).

<table>
<thead>
<tr>
<th>N.</th>
<th>ORDER</th>
<th>SPECIES</th>
<th>Juv.</th>
<th>( \Phi )</th>
<th>( \delta )</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Ar.</td>
<td>Bathylaimus assimilis</td>
<td>25</td>
<td>188</td>
<td>79</td>
<td>272</td>
<td>54,61</td>
</tr>
<tr>
<td>2.</td>
<td>M.</td>
<td>Theristus acer</td>
<td>26</td>
<td>11</td>
<td>9</td>
<td>46</td>
<td>9,23</td>
</tr>
<tr>
<td>3.</td>
<td>M.</td>
<td>Monhystera para</td>
<td>15</td>
<td>17</td>
<td>8</td>
<td>40</td>
<td>8,02</td>
</tr>
<tr>
<td>4.</td>
<td>C.</td>
<td>Chromadora nudicapitata</td>
<td>11</td>
<td>16</td>
<td>6</td>
<td>33</td>
<td>6,60</td>
</tr>
<tr>
<td>5.</td>
<td>Ar.</td>
<td>Ascolaimus elongatus</td>
<td>9</td>
<td>6</td>
<td>5</td>
<td>20</td>
<td>4,01</td>
</tr>
<tr>
<td>6.</td>
<td>C.</td>
<td>Microlaimus marinus</td>
<td></td>
<td></td>
<td>17</td>
<td>2</td>
<td>19</td>
</tr>
<tr>
<td>7.</td>
<td>C.</td>
<td>Hypodontaaimus striatus</td>
<td>2</td>
<td>5</td>
<td></td>
<td>12</td>
<td>2,40</td>
</tr>
<tr>
<td>8.</td>
<td>Ar.</td>
<td>Tripyloides marinus</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>11</td>
<td>2,20</td>
</tr>
<tr>
<td>9.</td>
<td>E.</td>
<td>Metaparoncholaimus campylocercus</td>
<td>4</td>
<td>2</td>
<td></td>
<td>6</td>
<td>1,20</td>
</tr>
<tr>
<td>10.</td>
<td>E.</td>
<td>Oncholaimus oxyuris</td>
<td>5</td>
<td>4</td>
<td>1</td>
<td>10</td>
<td>2</td>
</tr>
</tbody>
</table>
THE FREELIVING MARINE NEMAS OF THE BELGIAN COAST. II

<table>
<thead>
<tr>
<th>N. ORDER</th>
<th>SPECIES</th>
<th>JUV.</th>
<th>♂</th>
<th>♀</th>
<th>TOTAL</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>11. M.</td>
<td>Theristus longisetosus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. E.</td>
<td>Trefusia longicauda</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. M.</td>
<td>Theristus acrilabiatus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. M.</td>
<td>Eleutherolaimus stenosoma</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. C.</td>
<td>Microlaimus robustidens</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. C.</td>
<td>Microlaimus acuticaudatus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. E.</td>
<td>Oncholaimellus calcadosicus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. E.</td>
<td>Anoplostoma blanchardi</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. M.</td>
<td>Monhystera microphthalma</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. Ar.</td>
<td>Cephalobus oxyuroideos</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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.

* * *

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 1931a, the same thing can be said. At that time De Coninck studied particularly biocoenoses with a salinity not surpassing 20 °/oo in the brackish soil, whereas the brackish water explored by him at that time possessed a salinity of about 5 °/oo just as much as Filipjev 1929-1930 found in the Gulf of Finland.

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

The higher salinity of the brackish soil is also expressed in the higher percentage of brackish species found in that locality, 10 of 18 or 55.5 % being fresh-water species and 8 of 18 or 45 % brackish (6 being pure brackish, 2 marine).

During the present research of the nemic fauna of the Zwyn 2 localities were studied with a salinity of respectively 21 °/oo and 27,2 °/oo; 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 leaves 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 intensively 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.
<table>
<thead>
<tr>
<th>NUMBER</th>
<th>SPECIES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>ORDER ENOPLOIDEA</strong></td>
</tr>
<tr>
<td></td>
<td><strong>FAM. LEPTOSOMATIDAE</strong></td>
</tr>
<tr>
<td>1</td>
<td>Anticoma limalis Bastian</td>
</tr>
<tr>
<td>2</td>
<td>Clycolaimus magnus (Villot)</td>
</tr>
<tr>
<td>3</td>
<td>Stenolaimus marioni Southern</td>
</tr>
<tr>
<td>4</td>
<td>Thoracostoma trichodes (Leuckart)</td>
</tr>
<tr>
<td>5</td>
<td>Synonchus fasciculatus (Cobb) (syn. : Fiaccra brevisetosa Southern)</td>
</tr>
<tr>
<td></td>
<td><strong>FAM. ENOPLIDAE</strong></td>
</tr>
<tr>
<td>6</td>
<td>Enoplus communis Bastian</td>
</tr>
<tr>
<td>7</td>
<td>*Enoplolaimus propinquus De Man</td>
</tr>
<tr>
<td>8</td>
<td>Oxyonchus dentatus (Ditlevsen)</td>
</tr>
<tr>
<td></td>
<td><strong>FAM. OXYSTOMIDAE</strong></td>
</tr>
<tr>
<td>9</td>
<td>*Trefusia longicauda De Man</td>
</tr>
<tr>
<td></td>
<td><strong>FAM. ONCHOLAIMIDAE</strong></td>
</tr>
<tr>
<td>10</td>
<td>*Oncholaimellus calvadosicus De Man</td>
</tr>
<tr>
<td>11</td>
<td>Adoncholaimus thalassophygas (De Man)</td>
</tr>
<tr>
<td>12</td>
<td>Metaparoncholaimus campylocercus (De Man)</td>
</tr>
<tr>
<td>13</td>
<td>*Oncholaimus brachycercus De Man</td>
</tr>
<tr>
<td>14</td>
<td>Oncholaimus oxyurus DitlevSEN</td>
</tr>
<tr>
<td>15</td>
<td>Metoncholaimus pristiurus (Zurstrassen)</td>
</tr>
<tr>
<td>16</td>
<td>*Viscosa viscosa (Bastian)</td>
</tr>
<tr>
<td>17</td>
<td>Anoplostoma blanchardi De Man</td>
</tr>
<tr>
<td></td>
<td><strong>FAM. DORYLAIMIDAE</strong></td>
</tr>
<tr>
<td>18</td>
<td>Syringolaimus striaticaudatus De Man</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>De Coninck, 1920</th>
<th>De Coninck, 1921</th>
<th>Schuurmans-Stekhoven &amp; De Coninck, 1932</th>
<th>Present material</th>
<th>ATLANTIC COAST of Europe</th>
<th>Channel</th>
<th>Walcheren</th>
<th>Zuiderzee</th>
<th>Belgium, North</th>
<th>Kristiansborg</th>
<th>HAMIT</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* *
<table>
<thead>
<tr>
<th>Order</th>
<th>Chromadoroidea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fam.</td>
<td>Cyatholaimidae</td>
</tr>
<tr>
<td>19</td>
<td>Paracyatholaimus intermedius (DE MAN)</td>
</tr>
<tr>
<td>20</td>
<td>*Cyatholaimus punctatus Bastian</td>
</tr>
<tr>
<td>21</td>
<td>Cyatholaimus demani Filipjev</td>
</tr>
<tr>
<td>22</td>
<td>*Paracanthonchus caecus (BASTIAN)</td>
</tr>
<tr>
<td>23</td>
<td>Paracanthonchus speciabilis ALLGÉN</td>
</tr>
<tr>
<td>Fam.</td>
<td>Choanoimidae</td>
</tr>
<tr>
<td>24</td>
<td>Halichoanolaimus robustus Bastian</td>
</tr>
<tr>
<td>Fam.</td>
<td>Desmodoridae</td>
</tr>
<tr>
<td>25</td>
<td>*Desmodora serpentulus DE MAN</td>
</tr>
<tr>
<td>26</td>
<td>Monoposthia costata DE MAN</td>
</tr>
<tr>
<td>27</td>
<td>*Oistolaimus suecicus ALLGÉN</td>
</tr>
<tr>
<td>Fam.</td>
<td>Chromadoridae</td>
</tr>
<tr>
<td>28</td>
<td>*Chromadorina macroleima (DE MAN)</td>
</tr>
<tr>
<td>29</td>
<td>Chromadorina microlaima (DE MAN)</td>
</tr>
<tr>
<td>30</td>
<td>*Neochromadora poecilosoma (DE MAN)</td>
</tr>
<tr>
<td>31</td>
<td>*Prochromadorella germanica (BUETSCHLI)</td>
</tr>
<tr>
<td>32</td>
<td>*Chromadora nudicapitata BASTIAN</td>
</tr>
<tr>
<td>33</td>
<td>Chromadora cephalata DE MAN</td>
</tr>
<tr>
<td>34</td>
<td>Chromadora kreisi SCHUURMANS STEKHoven &amp; ADAM</td>
</tr>
<tr>
<td>35</td>
<td>Chromadorita obtusidens SCHUURMANS STEKHoven &amp; ADAM</td>
</tr>
<tr>
<td>36</td>
<td>*Chromadorita longisetosa DE CONINCK &amp; SCHUURMANS STEKHoven</td>
</tr>
<tr>
<td>37</td>
<td>*Dichromadora hyalocheile DE CONINCK &amp; SCHUURMANS STEKHoven</td>
</tr>
<tr>
<td>38</td>
<td>Pareuchromadora amphidiscata SCHUURMANS STEKHoven &amp; ADAM</td>
</tr>
<tr>
<td>39</td>
<td>Hypodontolaimus inaequalis (BASTIAN)</td>
</tr>
<tr>
<td>40</td>
<td>*Hypodontolaimus butschlii FILIPJEV</td>
</tr>
<tr>
<td>41</td>
<td>Spilophorella papillata KREIS</td>
</tr>
<tr>
<td>42</td>
<td>Spilophorella paradoxae DE MAN</td>
</tr>
<tr>
<td>Fam.</td>
<td>Comesomidae</td>
</tr>
<tr>
<td>43</td>
<td>*Sabatieria vulgaris (DE MAN)</td>
</tr>
<tr>
<td>44</td>
<td>*Sabatieria quadripapillata FILIPJEV</td>
</tr>
<tr>
<td>NUMBER</td>
<td>SPECIES</td>
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</tr>
<tr>
<td>45</td>
<td>*Microlaimus acuticaudatus SCHUURMANS STEKHOFEN &amp; DE CONINCK</td>
</tr>
<tr>
<td>46</td>
<td>Microlaimus globiceps De MAN.</td>
</tr>
<tr>
<td>47</td>
<td>*Microlaimus honestus De MAN</td>
</tr>
<tr>
<td>48</td>
<td>*Microlaimus marinus (SCHULZ)</td>
</tr>
<tr>
<td>49</td>
<td>*Microlaimus robustidens SCHUURMANS STEKHOFEN &amp; DE CONINCK</td>
</tr>
</tbody>
</table>

**Order ARAEOLAIMOIDEA**

**Fam. AXONOLAIMIDAE**

<table>
<thead>
<tr>
<th>NUMBER</th>
<th>SPECIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>*Araeolaimus filipjevi SCHUURMANS STEKHOFEN &amp; ADAM.</td>
</tr>
<tr>
<td>51</td>
<td>*Ascolaimus elongatus (BUETSCHLI)</td>
</tr>
<tr>
<td>52</td>
<td>*Ascolaimus paraspinosus SCHUURMANS STEKHOFEN &amp; ADAM.</td>
</tr>
<tr>
<td>53</td>
<td>*Ascolaimus spinosus (BUETSCHLI)</td>
</tr>
<tr>
<td>54</td>
<td>*Odonotaphora armata (DITLAVSEN)</td>
</tr>
<tr>
<td>55</td>
<td>*Odonotaphora longicaudata SCHUURMANS STEKHOFEN &amp; DE CONINCK</td>
</tr>
</tbody>
</table>

**Fam. CAMACOLAIMIDAE**

<table>
<thead>
<tr>
<th>NUMBER</th>
<th>SPECIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>56</td>
<td>*Camacolaimus longicauda DE MAN</td>
</tr>
<tr>
<td>57</td>
<td>Camacolaimus tardus DE MAN</td>
</tr>
</tbody>
</table>

**Fam. HALAPHANOLAIMIDAE**

<table>
<thead>
<tr>
<th>NUMBER</th>
<th>SPECIES</th>
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<tbody>
<tr>
<td>58</td>
<td>Deontolaimus papillatus DE MAN</td>
</tr>
<tr>
<td>59</td>
<td>*Dermatolaimus elegans SCHUURMANS STEKHOFEN &amp; DE CONINCK</td>
</tr>
<tr>
<td>60</td>
<td>*Halaphanolaimus pellucidus SOUTHERN</td>
</tr>
<tr>
<td>61</td>
<td>*Leptolaimus setiger SCHUURMANS STEKHOFEN &amp; DE CONINCK</td>
</tr>
<tr>
<td>Fam. Triplooididae</td>
<td></td>
</tr>
<tr>
<td>62 <em>Bathylinus assimilis</em> DE MAN</td>
<td></td>
</tr>
<tr>
<td>63 <em>Bathylinus filicaudatus</em> (SCHUURMANS STEKHoven &amp; ADAM)</td>
<td></td>
</tr>
<tr>
<td>64 <em>Bathylinus macramphis</em> SCHUURMANS STEKHoven &amp; DE CONINCK</td>
<td></td>
</tr>
<tr>
<td>65 <em>Bathylinus paralongisetosus</em> SCHUURMANS STEKHoven &amp; DE CONINCK</td>
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</tr>
<tr>
<td>66 <em>Bathylinus stenolaimus</em> SCHUURMANS STEKHoven &amp; DE CONINCK</td>
<td></td>
</tr>
<tr>
<td>67 <em>Triploides marinus</em> (BUETSCHLI)</td>
<td></td>
</tr>
<tr>
<td>68 <em>Triploides septentrionalis</em> DE CONINCK &amp; SCHUURMANS STEKHoven</td>
<td></td>
</tr>
</tbody>
</table>

**Order Monhysteroida**

**Fam. Monhysteridae**

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 69 *Theristus setosus* (BUETSCHLI) |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 70 *Theristus parasetosus* ALLEGEN |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 71 *Theristus acrilibiatus* 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 microphthalmala* 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 cutely.

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

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

A. — Growth phenomena.

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

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

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

| TABLE XII |
|---|---|---|---|---|---|---|
| | Absolute bodylength in μ | Absolute bodywidth in μ | Absolute taillength in μ | Absolute oesophagus length in μ | x | y |
| Juv. | 790 | 24,5 | 150 | 102 | 32,1 | 5,23 | 7,76 |
| | 1600 | 24,5 | 176 | 102 | 40,5 | 5,68 | 9,60 |
| ♂ | 1990 | 31 | 170 | 110 | 66 | 11,7 | 18 |
| | 3120 | 32 | 216 | 170 | 96,3 | 14,4 | 18,3 |
| | 3900 | 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 | 3600 | 50 | 213 | 133 | 78 | 17,8 | 28,5 |
The width of different individuals of the same stage of development proves to be rather constant. During growth, the width of an animal increases inconspicuously. In males it augments with 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 1/2 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 Stekhovery & De Coninck 1932a and 1932b.)

This fits for all *filiform* nemas (cf. also Kreis, 1929, p. 9). *Spindle-shaped* nemas have another type of growth, since the absolute width in these species may vary considerably. (Cf. Filipjev & Michaelova 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 Stekhovery & De Coninck 1932a.

Some specimens may show a shifting of the amphids in forward direction,
together with a swallowing of the anterior rim of the body (Fig. 90). In others, the reverse is the case (Fig. 92 & 93).

It is therefore clear that one has to be cautious by attributing 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.

G. — 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. 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 is no longer to be seen, whereas it is especially distinct in other views. (Fig. 156-158.)

The same may be said for *Ascolaimus elongatus* : here the barb at the distal end of the spicula varies in size with the angle under which it is seen. The curvature of the spicula changes likewise according to the same principle.

We are quite in accordance with Micoletzky 1922a, p. 118, where he says:

> « Bei spärlichem material ist ein Irrtum, besonders was den feineren Bau der Mundhöhle betrifft, nur zu gut möglich und tumlichste Vorsicht namentlich bei konservertem Material gehalten. 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 nema. Filipjev (1918-1921) treated in his well-known monograph mainly marine species, whereas Micoletzky published independently of him in 1922 a system which most comprises soil nema. A synopsis of all families of nema,
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 *Acmaelaimus* 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. *Acmaelaimus* 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. Schurman's Stenhooven & De Conineck 1933b.)

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

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

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

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

4 new orders:
1. *Araeolaimoidea* nov. ordo.
   Three families getting the higher rank of an order:
2. order *Chromadoroidea*, syn. fam. *Chromadoridae* auct.

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

4 new genera:
2. *Camacolaimoides*, syn. *Camacolaimus* De Man ex parte. Type species: *Camacolaimoides praedator* (De Man).

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.

4 nomina nova:
1. *Axonolaimus demani* nom. nov. for *Axonolaimus* spec. De Man 1928.
2. *Enoploides succicus* nom. nov. for *Enoplolaimus saveljewi* 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.
L. A. DE CONINCK & J. H. SCHUURMANS STEKHOVEN

8 genera to be withdrawn:
1. Bitholinema De Coninck = Wilsonema Cobb.
2. Bognenia Allgén = Trefusia De Man.
5. Conolaimus Filipjev = Odontophora Buetschli.
8. Ypsilon Cobb = Camacolaimus De Man.

44 species to be withdrawn:
1. Anticoma longisetosa Kreis = Ascolaimus elongatus (Buetschli).
2. Aarheolaimus cylindrica De Man = Aarheolaimus longicauda Allgén.
3. Aarheolaimus ditlevseni Allgén = Aarheolaimus elegans De Man.
5. Aarheolaimus spectabilis Ditlevsen = Aarheolaimus elegans De Man.
6. Ascolaimus filiformis Ditlevsen = Ascolaimus elongatus (Buetschli).
8. Azonolaimus serpentulus De Man = Ascolaimus elongatus (Buetschli).
10. Azonolaimus tenuis Schulz = Ascolaimus elongatus (Buetschli).
11. Bathylaimus denticaudatus Allgén = Parabathylaimus ponticus (Filipjev).
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).
22. Desmodora leucocephala Schulz = Desmodora serpentulus De Man.
23. *Enoplolaimus campbelli* Allgén = *Oxyonchus australis* (De Man).
32. *Oncholaimus aequedentatus* Schuurmans Stekhoven & Adam = *Metaparachromagaster campylocercus* (De Man).
33. *Oncholaimus albidos* De Rouville nec Bastian = *Metoncholaimus pristiurus* (Zur Strassen).
34. *Oncholaimus littoralis* Allgén = *Oncholaimellus calvadosicus* De Man.
35. *Oncholaimus marinus* Schulz = *Oncholaimus brachycercus* De Man.
37. *Parachromagaster tenuis* Allgén = *Arcaolaimus longicauda* Allgén.
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).

4 corrections to former identifications:

1. *Chromadora parva* Schuurmans Stekhoven & Adam nec De Man = *Chromadora microlaima* (De Man).
2. *Prismatolaimus intermedius* De Coninck nec Buetschli = *Anoplostoma blanchardi* De Man.
6 Families shifted to other orders:
1. Axonolaimidae, from the Monhysteroida to the Araeolaimoidea.
2. Comesomidae, from the Monhysteroida to the Chromadoroidea.
3. Diplopeltidae, from the Monhysteroida to the Araeolaimoidea.
4. Halaphanolaimidae, from the Chromadoroidea to the Araeolaimoidea.
5. Microlaimidae, from the Monhysteroida to the Chromadoroidea.
6. Plectidae, from the Chromadoroidea to the Araeolaimoidea.

21 species shifted to other genera:
1. Axonolaimus polaris Cobh = Odontophora polaris (Cobb).
2. Bathylaimus ponticus Filipjev = Parabathyiaimus ponticus (Filipjev).
3. Bathylaimus profundus Filipjev = Parabathyiaimus 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 Cobh = Araeolaimoides punctatus (Cobb).
9. Conolaimus angustilaimus Filipjev = Odontophora angustilaima (Filipjev).
12. Cothonolaimus inermis Ditlevsen = Bathylaimus inermis (Ditlevsen).
14. Cothonolaimus septentrionalis Filipjev = Bathylaimus septentrionalis (Filipjev).
15. Cothonolaimus tenuis Kreis = Sphaerolaimus tenuis (Kreis).
16. Monhystera tenuispiculum Ditlevsen = Theristus tenuispiculum (Ditlevsen).
17. Oncholaimus campyllocercus De Man = Metaparoncholaimus campyllocercus (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.
15. Enoplus elongatus Dujardin.
17. Enoplus erythrophthalmus von Linstow.
18. Enoplus nanus Allgén.
19. Enoplus parabrevis Allgén.
20. Enoplus rivalis Dujardin.
22. Enoplus tenuicaudatus Allgén.
23. Enoplus tuberculatus Eberth.
24. Microlaimus inermis Dillevsen.
25. Microlaimus problematicus Allgén.
26. Microlaimus tenuilaimus Allgén.
27. Odontophora marina Buetschli.
29. Odontophora polaris (Cobb).
30. Tripyloides demani Filipjev.
SYSTEMATICAL PART

Order 1: 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 later proved to belong to quite different genera. We believe it may be of some value to give a short survey of all known species with their synonymy. The species in question are treated in alphabetic order.

1. Enoplus acutus Villot 1875 = Triodontolaimus acutus (Villot).
   Confer De Man 1890, p. 114.
   Confer De Man 1893, p. 114.
   Confer De Man 1904, p. 19.
   A thorough comparison of descriptions and figures proves that no essential differences exist between both forms.
10. Enoplus brevis Bastian 1865, p. 150.
    Confer also De Man 1886, p. 27.

(*) Allgén's new monograph "Die freilebenden Nematoden aus dem Trondhjemsfjord" 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).
   Confer Kreis 1928, p. 103.
13. Enoplus cirrhatus Eberth 1863, p. 34 = Diplopeltis cirrhatus (Eberth). Confer below !
14. Enoplus cochleatus A. Schneider 1866, p. 57 = Enoplus communis Bastian.
   See also below. For E. communis Bastian var. meridionalis Steiner confer
   E. meridionalis.
17. Enoplus coronatus Eberth 1863, p. 57 = 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).
   Confer De Man 1866, p. 14.
   Confer Schuurmans Stekhoven & Adam 1931, Fiacra brevisetosa Southern.
23. Enoplus euxinus Filipjev 1918, p. 82 = Enoplus hirtus Marion 1870, p. 459.
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 labrostratus (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 macrocaudatus Linstow 1908, p. 27 = Phanoderma macrocaudatus
   (von Linstow).
35. Enoplus macrocephalins Eberth 1863, p. 35, probably synonymous with E. communis
   Bastian. Confer below !
   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.
   For ample information confer De Man 1904, p. 19.
41. *Enoplus obtusicaudatus* Eberth 1863, p. 36.
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 Filipiev 1918, p. 79.
   Pigment spots (ocelli) are figured but not mentioned in the text.
46. *Enoplus serratus* Ditlevsen 1926, p. 36.
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.
55. *Enoplus erythrophthalmus* von Linstow 1896, p. 11, fig. 17-18. Probably belongs to *Oxyonchus*.

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* Allen 1929b, p. 438, probably a synonym of *E. communis*; compare also what is said under *E. parabrevis*.

62. *Enoplus tuberculatus* Bérh 1863, p. 38, is no *Enoplus*, but for the moment it is uncertain to which genus the species should be reckoned. Probably allied to *Enchelidium*.

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

I. Tail broadly rounded, short:
   
   *Enoplus obtusicaudatus* Bérh 1863.

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 (†):
      
      b. Tail short, conical, 1,4 anal-diameters long:
         
         *Enoplus brachyurus* 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* Filipj 1884.

      dd. Spicula narrowing at the proximal end:
         
         *Enoplus groenlandicus* Ditlevsen.

   DD. Supplementary organ of the male trumpet-shaped:
      
      e. Spicula smooth:
         
         *Enoplus maeoticus* Filipj 1884.

      ee. Spicula indented:
         
         *Enoplus serratus* Ditlevsen.

   BB. Ocelli or pigment spots present:
      
      C. Spicula without indentations:
      
      E. Spicula with 2 ventral warts:
         
         *Enoplus behringicus* Filipj 1884.

(†) S : width of the body at the cephalic suture.
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EE. Spicula without warts:

F. Paired cephalic setae almost equal in size:
   *Enoplus auriculatus* SSAVEJ EV.

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* SSAVEJ EV.
   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. 13.

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.
Enoplus communis Bastian.

1. Head end of a juvenile.
2. Copulatory apparatus of a male
3. Tail of a male.
For references: Compare Schuurmans Stekhoven-Adam, 1931, p. 22, with the exception of Schuurmans Stekhoven, 1931, p. 676, where E. brevis was mentioned only. Further:

A. Schneider 1866, p. 57, pl. IV, fig. 9-13.
E. Schulz 1932, p. 341.
C. Allgén 1932c, p. 405.
L. de Coninck 1930, p. 135, fig. 4-5.
Bastian 1865, p. 149, pl. XII, fig. 168-170 et 171-172; p. 150, pl. XII, fig. 173-175.
Eberth 1863, p. 35, pl. II, fig. 23-24, pl. III, fig. 6.
Ditlevsen 1926, p. 33, pl. XIII, fig. 5, 8-10, pl. XV, fig. 4.
Allgén 1929d, p. 438, fig. 4a-c.
Allgén 1931, p. 224.

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

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

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

Head: 10 cephalic setae, the longer ones 0,37 × cephalic width at the suture, the shorter ones 0,5 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 1/2 ± cylindrical, 2,4 anal diameters long; width at the tip 0,2 anal diameter. Short setae are scattered over the tail especially numerous on the lateral lines (fig. 3).

Geographical distribution: Cosmopolite.

Genus Enoplolaimus De Man 1893 s. lat.

Syn.: Enoplus Dujardin 1845 ex parte.

Filipjev divides the Genus Enoplolaimus De Man into three subgenera:

I. Mesacanthion 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 Saveljev 1912, p. 112 = Oxyonchus acantholaimus (Saveljev).
4. Enoplolaimus audax Ditlevsen 1919, p. 208 = Mesacanthion audax (Ditlevsen).
5. Enoplolaimus australis De Man 1904, p. 17 = Oxyonchus australis (De Man).
7. Enoplolaimus brevisetosus Filipjev 1925, p. 150 = Mesacanthion brevisetosum (Filipjev).
9. Enoplolaimus caput medusae Ditlevsen 1919, p. 211.
11. Enoplolaimus conicus Filipjev 1918, p. 105 = Mesacanthion conicum (Filipjev).
13. Enoplolaimus crassus Ditlevsen 1926, p. 39 = Enoploides crassus (Ditlevsen)?
17. Enoplolaimus ditlevseni Filipjev 1925, p. 148 = Mesacanthion ditlevseni (Filipjev).
18. Enoplolaimus dubius Filipjev 1918, p. 107 = Oxyonchus dubius (Filipjev).
21. Enoplolaimus hamatus Steiner 1916a, p. 626 = Oxyonchus hamatus (Steiner).
24. Enoplolaimus italicus Steiner 1921b, p. 54, fig. A1 = Enoploides italicus (Steiner).
25. Enoplolaimus karenis Filipjev 1925, p. 152 = Mesacanthion karense (Filipjev).
27. Enoplolaimus latignathus Ditlevsen 1919, p. 205 = Mesacanthion latignathum (Ditlevsen).
29. Enoplolaimus lucifer Filipjev 1925, p. 149 = Mesacanthion lucifer (Filipjev).
30. Enoplolaimus major Filipjev 1925, p. 151 = Mesacanthion major (Filipjev).


34. *Enoplolaimus propinquus* De Man 1922a, p. 132 and 1922b, p. 257.

35. *Enoplolaimus ssaveljevi* Allgén 1929a, p. 13 = *Enoploides suecicus* nom. nov.


38. *Enoplolaimus vulgaris* De Man 1893, p. 119.


**DOUBTFUL SPECIES:**

40. *Enoplolaimus balgensis* Skwara 1921, p. 8, possibly a synonym of *Enoplolaimus derjugini* Filipiev 1929, p. 627. G. Schneider's *E. balgensis* Skwara certainly is a synonym of *E. derjugini* Filipiev.

41. *Enoplolaimus conicaudatus* Allgén 1929a, p. 16.

42. *Enoplolaimus gracilitosus* Allgén 1930c, p. 189, fig. 1-3.

43. *Enoplolaimus macrochaetus* Allgén 1929a, p. 15, as far as may be concluded from the very insufficient figures, probably belongs to the genus *Enoploides* Buetschi.

44. *Enoplolaimus paradentatus* Allgén 1932b, p. 111.

It is absolutely impossible to conclude whether the present species belongs to the genus *Oxyonchus* Filipiev or to the genus *Mesacanthion* Filipiev. 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 interprets 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.


May be *Enoplolaimus vulgaris* De Man, but impossible to decide from figure and text.

47. *Enoplolaimus stateni* Allgén 1930c, p. 251.

Belongs to the genus *Oxyonchus* and may be an synonym of *Oxyonchus australis* De Man, but is insufficiently characterised.

**KEY TO THE GENERA**

I. The three buccal teeth equal:

A. Cephalic setae inserted just in front of the cephalic suture:

*Enoplolaimus* De Man.

AA. Cephalic setae inserted in the middle of the head or even in front of the middle:

*Mesacanthion* Filipiev.

II. The three buccal teeth unequal; cephalic setae inserted in the middle of the head:

*Oxyonchus* Filipiev.
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* Ditløvsen.

II. Only two crowns of cephalic setae and a few subcephalic setae:
   A. Nervering on 2/3 of the oesophageal length:
      *Enoplolaimus abnormis* Kreis.
   AA. Nervering in front of the middle of the oesophagus:
      a. Tail longer than 10 anal diameters:
         *Enoplolaimus longicaudatus* (Southern).
      aa. Tail under 6 anal diameters:
         B. The long cephalic setae reach 1 x S:
            *Enoplolaimus vulgaris* De Man.
         BB. The long cephalic setae reach 1,5-2 x S:
            b. The four shorter submedian setae reach 1,5 x S:
               *Enoplolaimus halophilus* Ditløvsen.
            bb. The four shorter submedian setae at the utmost 1 x S:
               c. Width at the end of the tail 0,5 anal diameter:
                  *Enoplolaimus derjugini* Filipjev.
               cc. Width at the end of the tail 0,35-0,33 anal diameter:
               d. Length under 2 mm.:
                  *Enoplolaimus propinquus* De Man
               dd. Length over 2,5 mm.:
                  *Enoplolaimus zosterae* Schulz (*1*).

2. *Enoplolaimus propinquus* De Man 1922.
   
   Fig. 4-10.

References:

De Man 1922b, p. 257, fig. 47a-b.
De Man 1922a, p. 132.
Allegén 1929, p. 7.

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

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

Enoplotaimus propinquus De Man.
Dimensions:  \( \sigma \)  L.: 1,625 mm.;  \( \alpha \): 33,5;  \( \beta \): 3,8;  \( \gamma \): 10,4.

juv.  \( \varphi \)  L.: 1,675 mm.;  \( \alpha \): 30;  \( \beta \): 5,4;  \( \gamma \): 8,1;  \( \nu \): 55,7%.

juv. L.: 0,500 mm.;  \( \alpha \): 28;  \( \beta \): 2,9;  \( \gamma \): 6,4.

L.: 1,272 mm.;  \( \alpha \): 33;  \( \beta \): 3,5;  \( \gamma \): 6,6.

L.: 1,350 mm.;  \( \alpha \): 36,5;  \( \beta \): 3,38;  \( \gamma \): 9,64.

L.: 1,370 mm.;  \( \alpha \): 37;  \( \beta \): 3,7;  \( \gamma \): 9.

Body of almost equal width; anterior end only 0,6 x the width at the posterior end of the oesophagus; 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 x the corresponding body diameter) hairs is found.

Lateral fields broad, 11/28 x 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 x S; in the juv.  \( \varphi \) : 0,55 x S; in the  \( \sigma \) : 0,55 x S; 6 labial setae, 0,4 — 0,5 x S; 10 cephalic setae; the 6 longer ones reach 1,5 — 2 x S, the 4 submedian shorter ones 0,8 x S in juvenile specimens and in the juv.  \( \varphi \); in the  \( \sigma \) they are longer and reach 1 — 1,1 x S.

Buccal cavity with 3 broad mandibles, anchored in the body wall 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.

Oesophagus typical. Nerve ring on 0,33 — 0,5 x oesophageal length; in juvenile specimens it is found somewhat more caudal (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.  \( \varphi \) 5,2, in the  \( \sigma \) 4 anal diameters long. Width at the end in the  \( \sigma \) 0,25, in the juv.  \( \varphi \) 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 °/oo.

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 (Saveljev).
      Oxyonchus australis (De Man).
   AA. The same fields with denticles:
      a. Spicula slender, more than 6 \times 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 \times 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. : Bogynia Allgén 1932.
3. Trefusia longicauda De Man 1893.

_Syn._: _Bogonemia littoralis_ Allgén 1932.

**References**:
- Allgén 1932c, p. 424, fig. 10.
- De Man 1893, p. 5, pl. V, fig. 3.
- 1 ♂ and 4 ♀ from 't Zwyn; sand and organic detritus, 28.XII.1931; NaCl : 21 %.

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

**Geographical distribution**: Channel, Northsea and Baltic.

III. — Family Oncholaimidae.

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

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

Including the present material, representants of the following genera were observed: _Oncholaimellus_ De Man, _Adoncholaimus_ Filipjev, _Metaparoncholaimus_ n. g., _Oncholaiminus_ Dujardin, _Metoncholaimus_ Filipjev, _Viscosia_ De Man and _Anoplostoma_ Betschli.

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.


_Fig. 11-14._

_Syn._: _Oncholaimus littoralis_ Allgén.

**References**:
- De Man 1890, p. 190, pl. V, fig. 10-10e.
- Allgén 1929b, p. 442, fig. 8a-b, _O. littoralis_.
- 14 ♂, 11 ♀, 53 juv. from Heyst-Zeebrugge, 2.IX.1931, making 8.2 % of the material from the given habitat.
- 1 ♀ from 't Zwyn, 28.XII.1931, sand and detritus; NaCl : 21 %.
- 1 ♂ and 1 juv. Harbour (entrance) Oostende; De Saedeleer, IX.1931.
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.
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 cuticularised wall 2 other teeth are found, a dorsal and a second subventral one.

Oesophagus normal. Ventral gland situated caudad from the posterior end of the oesophagus. Excretory pore in the middle of the oesophagus, at a distance of 6,6 buccal cavities from the front of the head.
Nerve ring at 0.37-0.40 of the oesophageal length.

Female genital tract paired, asymmetrical.

Genital armature of the male (fig. 13) consisting of a bursa copulatrix with some papillae and setae, and 2 unequal, slender and narrow spicula. The longer spiculum measures 3.84 anal diameters or 3/4 of the tail; the shorter one measures 2.36 anal diameters. No gubernaculum was observed. Bursa very characteristic, enveloping about 1/3 of the tail, 1.8 anal diameters long. In front as well as behind it a pair of strong bristles is seen. Moreover we found a couple of papillae in the middle of the bursa, and a single median postanal papilla. The described relations are not conform with those found by De Man, but other specimens showed a picture quite identical to that depicted by De Man in his figure 10a. The 4 preanal papillae apparently were overseen by us.

Tail. The male tail gradually attenuates, the last 3/4 almost cylindrical, ending with a conical sucker; dorsal from it, a single relatively long bristle is found. Length of tail: 5.5 anal diameters; width at the end: 0.5 anal diameter.

Female tail of the same shape, 5 anal diameters long and 0.55 anal diameter wide at the posterior end.

Spinneret glands preanal, asymmetrical; the most cephalic one is situated at 4.4 × 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. — Allgen based his species Oncholaimus littoralis Allgen 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** Filippiev 1918.

**Syn.** : *Oncholaimus* Dujardin *ex parte*.

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

5. *Adoncholaimus thalassophygas* (De Man) 1890.

**Syn.** : *Oncholaimus lepidus* G. Schneider 1906, rec De Man.

*Oncholaimus thalassophygas* var. *tvarminneensis* G. Schneider.

**References** :

Allgén 1927a, p. 51.
Allgén 1929c, pp. 11-12.
Allgén 1929a, p. 18.
Allgén 1931, p. 223.
Cobb 1930, p. 227.
De Coninck 1930, p. 123.
Ditlevsen 1911, p. 225.
Filippiev 1918, p. 110.
Filippiev 1924, p. 105.
Filippiev 1929, p. 680.
Van Höffen 1947, p. 139.
De Man 1876, p. 181, pl. 12-13, fig. 48a-c.
Skwarra, E. 1922.

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

**Dimensions** : juv. L. : 1,27 mm.; $\alpha$ : 31,75; $\beta$ : 4,8; $\gamma$ : 14,1.

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

**Geographical distribution** : North Sea and Baltic.

**Genus METAPARONCHOLAIMUS** nov. gen.

**Syn.** : *Oncholaimus* ex parte.

This genus is characterised by the possession of 2 large subventral teeth, which feature it has in common with *Paroncholaimus* Filipjev and *Filoncholaimus* Filipjev 1925 (syn. : *Pseudoparoncholaimus* Kreis 1932).
From the first named genus it may be separated by the much shorter spicula, the absence of a gubernaculum and the presence of a tubular demanian vessel in the female; from the latter it may be distinguished by the shape of the tail, by the smaller size of the spicula and the presence of the tubular demanian vessel in the female. From both it differs by the unpaired female genital tract.

To this genus the following species ought to be reckoned:

\textit{Metaparoncholaimus campylocercus} (De Man), and
\textit{Metaparoncholaimus orientalis} (Cobb).

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

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

\textit{Our genus differs from \textit{Oncholaimus} by the different dentition only.}

6. \textit{Metaparoncholaimus campylocercus} (De Man) 1878.

Syn.: \textit{Oncholaimus campylocercus} De Man.
\textit{Oncholaimus aequedentatus} Schuurmans Stekhoven & Adam.
\textit{nee Oncholaimus campylocercus} Filipjev = \textit{Oncholaimus campylocercoides} nom. nov. (see below !)

Fig. 17-19.

References:
De Man 1878, p. 95, pl. VII, fig. 3a-b.
Schuurmans Stekhoven & Adam 1931, p. 25, pl. V, fig. 1-6, \textit{O. aequedentatus}.
\textit{nee Filipjev 1918}, p. 136, pl. IV, fig. 25.
\textit{nee Filipjev 1922a}, p. 104.

2 juv. ♀ and 4 juv. from 't Zwyn, 28.XII.1931, sand and organic detritus; NaCl : 21%/oo.
1 juv. from 't Zwyn, 28.XII.1931, between poles, on Enteromorpha; NaCl : 27,2%/oo.
1 ♀ and 10 juv. Ostende harbour (entrance), XI.1931; De Saebeeleer.

\textbf{Dimensions}:
♂. L. : 2,75-2,97; a : 57,5-62 ; β : 7-7,47; γ : 41,3-44 .
♀. L. : 3,6 -5,3 ; a : 60,3-78,7; β : 8-10,4 ; γ : 39,7-44,3;
V. : 57,82-60,75 %.

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

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

\textit{Cuticula} smooth, beset with scattered short bristles.

\textit{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 $\varphi$ 0.37 x corresponding cephalic diameter (fig. 17).

*Buccal cavity* 2.25 x as long as it is wide, with strong cuticularised walls and bottom; 2 equal, subventral, pointed teeth, reaching the base of the cephalic setae, the dorsal tooth slightly shorter.

*Cæsophagus* broadening towards the posterior end.

*Ventral gland* situated behind the posterior end of the *œsophagus*.

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*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.

Nerve ring in the middle of the oesophagus.

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  y  = 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 1/2 conical, second 1/2 club-shaped, curved ventrally, swollen at the end, with a ventral elevation a little behind the middle (0.55) of the tail, bearing 2 short setae; some small hairs are placed along the subdorsal lines. At both sides of the tubular outlet of the spinneret glands a similar hair is found.

Tail in the female: first 1/2 conical, gradually tapering to the cylindrical posterior 1/2, slightly swollen at the end.

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

Proportions. Male tail: length = 3 anal diameters; width at the apex = 0.42 anal diameters.

Female tail: Length = 4 anal diameters; width at the apex = 0.5 anal diameters.

Juvenile tail: Length = 2 anal diameters; width at the apex = 0.3 anal diameter.

Habitat: In sand, on Enteromorpha, and on a breakwater.

Geographical distribution: Mediterranean and North Sea.

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

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

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

3. In Filipjev's male the ventral elevation on the distal half of the tail is hardly to be seen, whereas it is very distinct in our and De Man's form.
4. Filipjev’s male shows a wart-like, voluminous preanal papilla in the midventral line; a similar, although faint papilla was depicted by De Man, 1878, pl. VII, fig. 3b.

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

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

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

**Genus Oncholaimus DuJardin 1845 s. str.**

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

7. *Oncholaimus brachycercus* De Man 1889.

Fig. 20-22.

**Syn.** : *O. marinus* Schulz 1932.

*O. albidus* Bastian, Buetschli 1874.

_nec* *O. albidus* Bastian.

_nec* *O. brachycercus* Steiner = *Paroncholaimus* spec.

**References**:

Allgen 1929c, p. 11. De Man 1889a, p. 5.

Allgen 1931, p. 224. De Man 1889b, p. 211, pl. 8, fig. 12-12c.

Allgen 1932b, p. 113, fig. 9. De Man 1922b, p. 253, fig. 44a-b.


Buetschli 1874, p. 39, pl. 9, fig. 39a-c. Schulz 1932, p. 351, fig. 9a-e, O. marinus.

**O. albidus**.

Filipiev 1925, p. 171. Nee Steiner 1916, p. 603, pl. 28, fig. 23a-b, = *Paroncholaimus* spec.

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

**Dimensions** : ♂ L : 3,57 mm.; α : 82,7; ß : 8,5; γ : 67,7.

♀ L : 3,33 mm.; α : 97; ß : 7,41; γ : 74,1; V. : 72 %.
In general, our specimen quite agree with those of De Man, so that some additional notes may suffice.

**Amphids** in the male, $0.35 \times$ corresponding body diameter (fig. 20).

The longer *cephalic setae* are in the male $0.29 \times$ body diameter, the shorter ones $0.20 \times$ body diameter long.

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

**Excretory pore** in the male $1.81$ buccal cavities from the anterior end.

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**Spicula** sword-shaped, with proximal knob-like swelling; distal end inconspicuously broadened; length : $1.6$ anal diameters.

Male *tail* $1.65$ anal diameters long; width at the end : $0.25$ anal diameters. Female *tail* shorter, $1.46$ anal diameters long; width at the end : $0.23 \times$ anal diameters. Last $1/3$ in both sexes cylindrical, not swollen at the end.

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

**Geographical distribution**: Channel, North Sea and Baltic.

**Remarks.** — Steiner's figure of his so-called *O. brachycercus* distinctly shows 2 equally long subventral teeth and a very small dorsal one. Therefore, his specimen belongs to the genus *Paroncholaimus*.
8. Onchoelaimus oxyuris Ditlevsen 1911.

Fig. 23-27.

Syn.: O. oxyuris Dtl. var. esknaensis G. Schneider 1926.

† Urolebas barbata Carter 1859.

References:

Allgén 1927a, p. 51.
Allgén 1929b, p. 9.
Carter 1859, p. 43, pl. 3, fig. 32.
De Coninck 1932, p. 10, fig. 3.

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

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

Dimensions: ♂. L.: 3 mm.; α: 50; β: 5,55; γ: 55.5.
♀. (n=4) L.: 3,5-3,9 mm.; α: 40,8-67,7; β: 6,45-8,08;
γ: 51,9-67,7; V: 65-72 %.

Juv. L.: 2,540 mm.; α: 42,3; β: 6,2; γ: 50,8.

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

For the habitus, confer fig. 23.

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

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

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

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

Oesophagus typical. Nertering on 0,48 × oesophageal length.

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

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

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

A circumananal 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 oxyurus Ditløvsen.

23. General view of a male.
24. Head end of a juvenile.
25. Head end of a male.
27. Tail of a juvenile.
Typical for the male sex of this species is a cone-shaped voluminous ventral papilla, just in front of the tailend. Proportions in the male tail: 1.53 anal diameter long, 0.20 anal diameter wide at the end. In the juvenile specimen, the tail resembles in general aspect that of O. brachyuris De Man, but may be distinguished from the latter by its greater size and by the fact that the distal cylindrical portion is longer and narrower than in the mentioned species. Proportions: length of tail 1.74 x 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 METONCHOLOAIMUS 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. 30a-c, identified by De Man with his species *O. brachycercus*.
3. *Metoncholaimus albidus* (Bastian), De Man 1878, p. 93, pl. VII, fig. 2a-c, brought by ZUR STRASSEN 1894, p. 469, pl. XXIX, fig. 2 to his species *Metoncholaimus demani* (ZUR STRASSEN).
4. *Metoncholaimus albidus* (Bastian), DE ROUVILLE 1904, p. 793, which species proves to be identical with *Metoncholaimus pristiurus* ZUR STRASSEN 1894, p. 461, pl. XXIX, fig. 1 and 3.

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

In 1932 Cobb described the same species.


**Syn.:** *Metoncholaimus denticaudatus* Schuurmans Stekhoven & Adam.

*Oncholaimus albidus* Bastian, De Rouville.

During their study of *Metoncholaimus denticaudatus*, both authors oversaw the paper of ZUR STRASSEN and had not yet the occasion to have a look at the figures of De Rouville. In the bequest of the late helminthologist Dr. G. De Man, we found a number of copies of the unpublished original figures of De Rouville. Among them was a figure representing the male tail of the species De Rouville.
described as *Oncholaimus albidus* Bastian, which is identical as well with the picture of Zur Strassen's *O. pristiurus* as with Schuurmans Stekhoven & Adam's *M. denticaudatus*.

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

I. Spicula as long as the tail :  
*M. albidus* (BASTIAN).

II. Spicula twice as long as the tail :

A. Male tail with subventral, saw-like rows of papillae :  
*M. pristiurus* (ZUR STRASSEN).

AA. Male tail with subventral rows of minute bristles :  
*M. demani* (ZUR STRASSEN).

**Genus VISCOSIA De Man 1890.**

Syn.: *Oncholaimus Dujardin ex parte.*

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

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

*Viscosia viscosa* is the only species found in our material.

**10. Viscosia viscosa (BASTIAN) 1865.**

**Allgen** 1929, p. 12.  
**Allgen** 1929b, p. 17.  
**Allgen** 1931, p. 224.  
**Bastian** 1865, p. 130, pl. XI, fig. 131-133.  
**Buetschli** 1874, p. 39, pl. 9, fig. 38.  
**De Man** 1890, p. 184, pl. IV, fig. 7.  
**De Man** 1922b, p. 258.  
**Schulz** 1932, p. 354, fig. 11a-c.  
**Kreis** 1929, p. 33.  
**Kreis** 1929, p. 33.

1 σ from 't Zwyn, 28.XII.1931, sand and *Enteromorpha* between poles; NaCl : 27.2 ‰.

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

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

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

**Geographical distribution:** The Channel, North Sea and Baltic.
THE FREELIVING MARINE NEMAS OF THE BELGIAN COAST. II

Genus ANOPLOSTOMA Buetschli 1874.

Syn.: Symplocostoma Bastian ex parte.
Oncholaimellus De Man ex parte.

11. Anoplostoma blanchardi De Man 1888.

REFERENCES:
nec Allgén 1928a, p. 274 = A. campbelli Allgén 1932 ?
De Coninck 1930, p. 116, Prismatolaimus intermedius Buetschli (see below).
De Man 1888, p. 18, pl. 11, fig. 10-10c.

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

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:
2. Syringolaimus smarigdus Cobb 1928, p. 249, fig. 1, probably a synonym of Syringolaimus striaticaudatus De Man.
3. Syringolaimus striaticaudatus De Man 1888, p. 35, pl. III & IV, fig. 16-16c.

KEY TO THE SPECIES OF THE GENUS SYRINGOLAIMUS

I. Tail without transverse striae...
Syringolaimus brevicaudatus Micoletzky.

II. Tail with transverse striae...
Syringolaimus striaticaudatus De Man.
12. Syringolaimus striaticaudatus De Man 1888.

Fig. 28-29.

Syn.: Syringolaimus smarigdus Cobb 1928.

References:
Allgén 1929a, p. 23.
Cobb 1928, p. 249, fig. 1, S. smarigdus.
De Coninck 1932b, p. 17, fig. 7-9.
De Man 1888, p. 35, pl. III-IV, fig. 16.
Coob 1928, p. 249,
De Coninck 1932b, p. 17, fig. 7-9.
De Man 1888, p. 35, pl. III-IV, fig. 16.

1 ♂ and 1 juv. from 't Zwyn, on Enteromorpha between poles, 28.XII.1931; NaCl: 27.2 °/o.

Some additional notes may be given:

Spicula 1 anal diameter long, curved, broad, with proximal knob, distal end bluntly rounded. Gubernaculum tender. Tail of the ♂ 8.43 anal diameters long; at the base of the long conical outlet it is only 0.125 × anal diameter wide. Bulbus oesophagi with strong inner lining.

Geographical distribution: Cosmopolite.
Order II: CHROMADOROIDEA

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

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

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

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

I. — Family CYATHOLAIMIDAE.

Genus CYATHOLAIMUS Bastian 1865.

Syn. : Necticonema Marion 1870.

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

Cyatholaimus punctatus Bastian 1865, and
Cyatholaimus demani Filipjev 1918.

13. Cyatholaimus punctatus Bastian 1865.

Fig. 30-34.

References:
Bastian 1865, p. 164, pl. XIII, fig. 217-218.
De Man 1890, p. 180, pl. IV, fig. 6a-h.
1 ♂, 1 ♀ from 't Zwyn, 28.XII.1931, between poles on Enteromorpha; NaCl : 27,2 %.

Dimensions: ♂. L. : 2,040 mm.; α : 31,95; β : 8,71; γ : 11,8.
juven. ♀. L. : 1,512 mm.; α : 24,2 ; β : 9,5 ; γ : 10,8; V. : 42,9 %.

Body from nerve ring 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 μm = 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 10 μm = 0.4 × the cephalic diameter, the other 4 reach 2/3 of the longer ones.

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

**Oesophagus** cylindrical.

**Ventral gland** situated on 0.8 × the length of the oesophagus behind the base of the oesophagus. Excretory pore opens just in front of the nervering, at 0.6 × oesophageal length.

**Female genital tract** paired, symmetrical.

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

The maximal width of the spicules is found in their inferior 1/2.

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 scarce and minute.

**Spinneret-glands** with a tubular outlet.

**Geographical distribution**: Channel and North Sea.

**Remarks.** — We did not observe the eye-spots, which is probably due to the fact that the pigment was dissolved during the stay in the fixation fluid.
Cyatholaimus punctatus Bastian.
30. General view of a male.
31. Head end of a male.
32. Spicular apparatus of a male.
33. Posterior end of a male.
34. Tail of a female.

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 1929b, p. 452, fig. 15a-c, C. papilliferus.
Ditlevsen 1923, p. 179, C. canariensis.
Filipjev 1918, p. 195, pl. V, fig. 37, C. demani.
Filipjev 1922, p. 143.
De Man 1889b, 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 prove 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.
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15. Paracanthonchus caecus (Bastian) 1865.

Fig. 35-37.

References:
- Allégén 1927a, p. 53.
- Allégén 1927b, p. 288.
- Allégén 1928b, p. 17.
- Allégén 1931, p. 239.
- Allégén 1932c, p. 409.
- Bastian 1865, p. 190, pl. 13, fig. 213-214
- Ditlevsen 1919, p. 198, pl. XV, fig. 4.
- Nec Filipjev 1922a, p. 113, pl. I, fig. 10.
- Kreis 1929, p. 43.
- De Man 1886b, p. 204, pl. VII, fig. 10-10g.
- De Man 1922b, p. 238, fig. 27.
- De Rouville 1904, p. 790.
- Steiner 1915, p. 230.
- Steiner 1916, p. 586.
- Steiner 1921b, p. 47.
- Filipjev 1922a, p. 113, pl. I, fig. 10.
- Kreis 1929, p. 43.
- De Man 1886b, p. 204, pl. VII, fig. 10-10g.
- De Man 1922b, p. 238, fig. 27.
- De Rouville 1904, p. 790.
- Steiner 1915, p. 230.
- Steiner 1916, p. 586.
- Steiner 1921b, p. 47.
- Filipjev 1922a, p. 113, pl. I, fig. 10.
- Kreis 1929, p. 43.
- De Man 1886b, p. 204, pl. VII, fig. 10-10g.
- De Man 1922b, p. 238, fig. 27.
- De Rouville 1904, p. 790.
- Steiner 1915, p. 230.
- Steiner 1916, p. 586.
- Steiner 1921b, p. 47.

1♀ from Knokke-Zoute, on a break-water, 28.XII.1931; NaCl : 30,6 °/oo.
1♀ from Knokke-Zoute, on the littoral.
1♀ from Knokke-Zoute, on the littoral.
1♀ from Knokke-Zoute, on the littoral.
1♂♂, 10♀ and 16 juv. from Oostende, on a break-water, 18.XI.1931; NaCl : 30,77 °/oo.
2♀♀ and 9 juv. from Oostende, on a break-water, harbour entrance, IX.1931 (De Sae-delee).

Paracanthonchus caecus (Bastian).
35. General view of a female.
36. General view of a male.
37. Spicular apparatus and tail of a male.
L. A. DE CONINCK & J. H. SCHUURMANS STEKHOVEN

**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.


**Syn.**: *Paracanthonchus polycyrtus* Schuurmans Stekhoven & Adam.

**References**:
Allgén 1931, p. 235, fig. 7a-b.
Schuurmans Stekhoven & Adam 1931, p. 30, pl. VI, fig. 9-12, pl. VII, fig. 4-2.

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 1929a, p. 30.
Allgén 1931, p. 236.
Allgén 1932a, p. 443, fig. 2.
Allgén 1932c, p. 411.
Allgén 1929a, p. 30.
De Man 1889, p. 188, pl. V, fig. 4.
Schulz 1932, p. 384, fig. 28a-f.
Steiner 1916, p. 546.

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

**Geographical distribution**: North Sea, Baltic, Channel, Barentz Sea.

**Remarks**. — After Bresslau-Schuurmans Stekhoven (manuscript) *Desmodora leucocephala* Schulz is a synonym of *D. serpentulus*. 
Genus OISTOLAIMUS Ditlevsen 1921.

Syn.: Bradylaimus Schuurmans Stekhoven 1931.

References:
Ditlevsen 1921, p. 4.
Schuurmans Stekhoven 1931, p. 648.

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

38. General view of a male.

Desmodora serpentulus De Man.
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 \( \alpha \) varies considerably in relation with age or length.

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

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

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

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

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

*Female genital tract* apparently bifid, symmetrical. Ovaries reflexed.


*Fig. 40-41.*

*Syn.* : *Bradylaimus parvus* Schuurmans Stekhoven 1931.

*References* :

Allgén 1929c, p. 25, fig. 5a-d.

Allgén 1931, p. 238.

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

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

1 juvenile specimen from 't Zwyn, on Enteromorpha between poles, 28.XII.1931; NaCl : 27.2 °/00.
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Dimensions: \( \sigma^+ \) L.: 1,200 mm.; \( \alpha \): 41,6; \( \beta \): 10; \( \gamma \): 19,2.
juv. L.: 0,770 mm.; \( \alpha \): 21,05; \( \beta \): 4,82; \( \gamma \): 9,52.

Allgén's:
\( \sigma^+ \) L.: 1,5 mm.; \( \alpha \): 30; \( \beta \): 9,1; \( \gamma \): 15.
\( \varphi \) L.: 1,15 mm.; \( \alpha \): 24; \( \beta \): 7; \( \gamma \): 12,8.

Schuurmans Stekhoven's:
\( \varphi \) L.: 0,84 mm.; \( \alpha \): 9,25?; \( \beta \): 6,5; \( \gamma \): 8,5; V.: 67,6 %.

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

Cuticular pointed rings till in front of the amphids.

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

Head. Labial papillae in a juvenile 1,25\( \mu \) long, in an adult \( \sigma^+ \) and \( \varphi \) till 4 \( \times \) as long as in the juvenile specimens.
Anterior crown of setae in a juvenile 3,125\( \mu \), the hairs of the second crown 9,375\( \mu \), those of the third crown 11,25\( \mu \) long.
Buccal cavity shallow; dorsal spear 1/6 of the oesophageal length.
Neither 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 2 in the specimen studied by Schuurmans Stekhoven in 1931 is probably due to a flattening during the examination. After all it is possible that Oistolaimus suecicus Allgén and Oistolaimus ferox Ditlevsen prove to be synonymous, but this cannot be decided after our present knowledge, since the description of Ditlevsen is too incomplete to permit such conclusion.

VI. — Family CHROMADORIDAE.

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

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

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

Genus CHROMADORINA Filipjev 1918.

Syn.: Chromadora Bastian ex parte.

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

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

19. Chromadorina macrolaima (De Man) 1889.

Fig. 42–44.

Syn.: Chromadora macrolaima De Man.

Re: Chromadora macrolaima De Man var. bergensis Allgén.

References:

Allgén 1927a, p. 53.
Allgén 1927b, p. 204.
Allgén 1928c, p. 296.
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Allgén 1929a, p. 36.
Allgén 1932c, p. 415.
Nec Allgén 1932c, p. 415, var. bergensis.
Steiner 1916, p. 532, pl. 18, fig. 2a-d.

2♂♀ from Oostende, on a break-water, 18.XI.1931; NaCl: 30.77%/oo.
7♂♀, 5♀♀ and 1 juv. from Oostende, on a break-water, harbour entrance, IX.1931
(De Saeedeleer).

45. Head end of a male.
46. Tail of a female.

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 oesophagus. *Oesophagus* with a distinct bulb, 1/4 as long as the oesophagus.

Nerve ring on 55 % of the oesophageal 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, Barents 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 1927b, p. 208.

Allgén 1928c, p. 297.

Allgén 1929e, p. 22.

Allgén 1929e, p. 35.

Allgén 1931, p. 242.

De Man 1889b, p. 199, pl. VI, fig. 8.

De Man 1922b, p. 246, fig. 37a-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 Saebeeleer).

**Dimensions:** ♂ L. : 0,930 mm.; z : 21; 6 : 6,5; 7 : 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 oesophagus. We are not quite sure whether there are subven-
tral teeth opposite to the first, or if there exists only a circular reinforcement in
the wall of the buccal cavity, just like De Man depicts in his fig. 8a.

*Oesophagus* with a distinct bulb, 0.23 \( \times \) oesophageal 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, Barents 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 spe­
cies in question.

**21. Neochromadora poecilosoma (De Man) 1893.**

Fig. 47-48.

Syn.: *Chromadora poecilosoma* De Man.

**References:**

A llen \( 1929 \), p. 23.
A llen \( 1929a \), p. 36.
A llen \( 1931 \), p. 242.
A llen \( 1932c \), p. 417.

Micoletzky 1924, p. 157.

\[ \text{Habitus from nervering to the anal opening nearly cylindrical. Width at} \]

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 subventral teeth.

**Neochromadora poecilosoma** (De Man).

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

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

*Nervering* at 55 % of the oesophageal length.

*Female genital tract* paired symmetrical.

*Tail* elongate cylindrical, tapering into a terminal cone; 5.5-6 anal diameters long.

*Geographical distribution*: Channel, North Sea, Baltic.
Genus PROCHROMADOrella Micoletzy 1924

Syn. : Chromadora Bastian ex parte.

22. Prochromadorella germanica (Buetschli) 1874.

Fig. 49-51.

Syn. : Chromadora dröbachiensis Allèn.
Chromadora germanica Buetschli.

References:
Allèn 1931, p. 244, fig. 10a-b.
Buetschli 1874, p. 48, pl. VI, fig. 25.
Rieck 1928.

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

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 nererving 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.

Nererving 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, $1,265 \times$ anal diameters long; proximal end swollen, distal end pointed. Gubernaculum simple, gutter-shaped, $0,88 \times$ 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, $3,9 \times$ anal diameters, with distinct spinneret glands and a conical tubular outlet.

Geographical distribution: North Sea and Baltic.

Remark. — For the description of the female, confer Allgén.
Genus Chromadora Bastian 1865.

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

23. Chromadora nudicapitata Bastian 1865

Fig. 52-54.

Syn.: Chromadora natans Bastian.

References:

Allgén 1928a, p. 257, C. natans.
Allgén 1929a, p. 38, id.
Allgén 1931, p. 242, id.
Allgén 1932c, p. 415, id.
Bastian 1865, p. 168, pl. XIII, fig. 236-238, C. natans.
Daday von 1901, p. 451, pl. 23, fig. 6-10, C. natans.
De Man 1888, p. 47, pl. III-IV, fig. 20, C. nudicapitata.
De Man 1922b, p. 244, fig. 35, C. nudicapitata.
De Rouville 1904, p. 789, C. natans.
Southern 1914, p. 29, C. nudicapitata.

114 ♂♂, 130 ♀♀ and 26 juveniles (82.6 % of the nematode fauna at the locality in question), on a breakwater; harbour entrance Oostende, IX.1931 (De Saebeleer).
9 ♂♂, 5 ♂♀ and 3 juveniles on a breakwater, Oostende, 18.XI.1931; NaCl: 29.3 °/0.
3 ♂♂ and 1 ♂♀ from Knokke-Zoute, on stones along the littoral, 28.XII.1931.
8 ♂♂, 26 ♀♀ and 1 juvenile from 't Zwyn, on Enteromorpha between poles, 28.XII.1931; NaCl: 27.2 °/0.
6 ♂♂, 16 ♀♀ and 33 juveniles from 't Zwyn, in sand and organic detritus, 28.XII.1931; NaCl: 21 °/0.

♀♀. 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.

Oesophagus cylindrical with a strong oesophageal bulb, 0.22 – 0.24 × oesophageal length. Nerveing 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.
**THE FREELIVING MARINE NEMAS OF THE BELGIAN COAST. II**

*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. Spinnneret 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.XII.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.

<table>
<thead>
<tr>
<th>140</th>
<th>24</th>
<th>933</th>
<th>1,065 mm.</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>25</td>
<td>26,5</td>
<td></td>
</tr>
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</table>

♀. L. : 0,955 mm.; α : 38.2; β : 6.5; γ : 7.9; V. : 48.6 ‰.

<table>
<thead>
<tr>
<th>145</th>
<th>375</th>
<th>420</th>
<th>465</th>
<th>510</th>
<th>550</th>
<th>835</th>
<th>0,955 mm.</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>23</td>
<td>25</td>
<td>18,25</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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 x 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 x cephalic diameter.

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

Oesophagus differentiated around the buccal cavity, slightly swollen; than cylindrical. Posterior bulb not strongly swollen, 0.2 x oesophageal length.
Ventral gland, with small adherent cell-body, very long, situated behind the beginning of the intestine; the distance from the anterior end to the end of the ventral glands equals twice the length of the oesophagus.

Excretory pore in both sexes at 1.6 cephalic diameters from the anterior end. Nervering at 70% from the oesophageal length.

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

Dimensions: ♂ L. : 1,720 mm.; a : 47.1; β : 9.34; γ : 6.46.

♀ L. : 1,360 mm.; a : 27.2; β : 7.44; γ : 6.63; V. : 49 %.

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.

Oesophagus with an anterior differentiation around the buccal cavity. Posterior bulb with strong inner lining, 0.13 × oesophageal length.

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

Nerve ring at 63 % of the oesophageal length.

Female genital tract paired, symmetrical; ovaries reflexed.

Testis comparatively long. Spicula arcuate, 1 anal diameter long, of equal width throughout, obtusely rounded at the apex, of a similar shape as in C. obtusidens but narrower. Gubernaculum gutter-shaped, 0.6 anal diameter
long, at the utmost slightly indented. There are 9 small preanal papillae; the most anterior one is situated at 6 anal diameters in front of the anal opening.

Tail long, elongate conical, 8.8 anal diameters long (in fig. 63 somewhat flattened). Outlet of the spinneret glands elongate conical.

**Genus **DICHROMADORA **KREIS 1929.**

**26. Dichromadora hyalocheile** nov. spec.

*Fig. 64-66.*

1 ♀ from Oostende; sand on the littoral, 18.XI.1931; NaCl : 29.3 °/00.

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

Cobb's formula:

<table>
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<tr>
<th>125</th>
<th>305</th>
<th>M.</th>
<th>785</th>
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<tr>
<td>20</td>
<td>26</td>
<td>30</td>
<td>26</td>
</tr>
</tbody>
</table>

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 x cephalic diameter.

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

Oesophagus with a very distinct swollen differentiation around the buccal cavity, strongest at the dorsal side. Posterior bulb with strong inner lining, 0.22 x oesophageal length.

Excretory pore at 35μ = 1.84 x 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 Stekhooven.

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_ Bütschli nec Bastian.

_Hypodontolaimus striatus_ Ditløvsen

References:
- Allgén 1927a, p. 55, _H. striatus_.
- Allgén 1929c, p. 24, _id_.
- Allgén 1929d, p. 33, _id_.
- Allgén 1931, p. 240, _H. bütschlii_.

L. A. DE CONINCK & J. H. SCHUURMANS STEKHOVEN
Hypodontaolaimus buetschii Filipjev.

67. General view of a male.
68. Spicular apparatus and tail of a male.
69. Tail of a female.

Amphids slit-like. Cephalic setae 1/4 of the corresponding cephalic diameter. Oesophagus with an anterior swelling. Posterior bulb 0.27 x oesophageal length. Excretory pore situated just behind the nertering which lies at 45 %
of the oesophageal length. Ventral gland at 1/2 × oesophageal length behind the base of the oesophagus. 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:
Allgen 1929a, p. 48.
De Man 1907a.
De Man 1907b, p. 66, pl. I, fig. 12; pl. III, fig. 12a-b, d-i; pl. IV, fig. 12c.
De Man 1922b, p. 237, fig. 25.
1 ♀ on a break-water; Oostende, 30 XII. 1931.

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

29. Sabatieria quadrripapillata Filipjev 1922.

Fig. 70-72.

References:
Filipjev 1922b, p. 207, pl. V, fig. 10a-d.
1 ♀ on a break-water; Knokke-Zoute, 28 XII. 1931; NaCl: 31,6 °/oo.

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

Cobb’s formula:

<table>
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<th>a101</th>
<th>170</th>
<th>330</th>
<th>800</th>
<th>?</th>
<th>1448</th>
<th>1,480 mm.</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>42</td>
<td>60</td>
<td>60</td>
<td>12</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Filipjev’s: ♀. L.: 1,50 mm.; α: 34; ß: 9; γ: 11,2; V.: 51 %.
The species in question was discovered by Filipjev in the sea of Azov. Notwithstanding some small differences with the type specimen, e.g., the somewhat broader tail-end in the female, we are convinced that our specimen belongs to Filipjev's species. Filipjev has apparently overseen the cell body of the ventral gland which he described as tubular, whereas the broadest part of his ventral gland coincides with the ampulla of our specimen.

_Habitus_ fusiform; confer the cobbian formula.

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

Amphids with 2 1/2 windings, paralleled by a faint line; 0,55 x corresponding body diameter.

_Head_ obtusely rounded, with 6 labial papillae, 6 cephalic papillae and 4 cephalic setae, 0,4 x cephalic diameter.

_Buccal cavity_ shallow, reaching slightly less than halfway the amphids, or 2/3 the distance to the first crown of cephalic papillae. A minute dorsal tooth is present.
*Esophagus* with a bulb-like posterior swelling, more or less 0.2 × the oesophageal length. *Nerve ring* in the middle.

*Ventral gland* almost spherical, situated immediately behind the posterior end of the oesophagus, connected by a fine tube with the ampulla. *Excretory pore* on 0.6 × oesophageal length.

*Tail* containing the spinneret gland cells 3,6 anal diameters long. Width at the end 0.33 × anal diameter. Basal 3/4 conical, last 1/4 claviform.

**Geographical distribution**: North Sea and Black Sea.

**VIII. — Family Microlaimidae.**

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

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

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

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

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

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

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

**Genus Microlaimus** De Man 1880.

The genus *Microlaimus* embraces at present 12 species of which 3 are doubtful.
THE FREELIVING MARINE NEMAS OF THE BELGIAN COAST. II

True species of *Microlaimus* De Man:
2. *Microlaimus borealis* Steiner 1916, p. 590, pl. XXVII, fig. 20a-c.
3. *Microlaimus cyatholaimoides* De Man 1922c, p. 118, fig. 14f.
4. *Microlaimus globiceps* De Man 1880, 1884, p. 52, pl. VI, fig. 24-24e.
5. *Microlaimus honestus* De Man 1922b, p. 241, fig. 30a-c.
6. *Microlaimus marinus* Schulz, 1932, p. 367, fig. 18a-e.
7. *Microlaimus robustidens* Schuurmans Stekhoven & De Coninck 1933a, p. 6, pl. III, fig. 4-7.
8. *Microlaimus tenuispiculum* De Man 1922b, p. 241, fig. 31a-b.
9. *Microlaimus zosterae* Allgén 1930a, p. 62, fig. 5a-c.

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

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


KEY TO THE GOOD SPECIES OF THE GENUS MICROLAIMUS DE MAN

I. Buccal cavity with strongly cuticularised walls, wide; anterior portion of the oesophageus strongly muscularised, bulbiform:
   *Microlaimus robustidens* Schuurmans Stekhoven & De Coninck.

II. Walls of the buccal cavity not so strongly cuticularised:
   A. Oesophageal bulb 1/3 × oesophageal length. Tail conical, pointed at the tip:
      *Microlaimus acuticaudatus* Schuurmans Stekhoven & De Coninck.
   AA. Bulbus oesophagi 1/4-1/6 × oesophageal length:
      a. Tail elongate conical, swollen at the end. Spicaula very long and slender, 3/5 × the length of the tail:
         *Microlaimus tenuispiculum* De Man.
aa. Tail never swollen at the end, rounded or more or less pointed. Spicula less than \( \frac{1}{2} \times \) the length of the tail:

B. Submedian cephalic setae \( \frac{2}{3} \times \) cephalic diameter long. Amphids large, \( \frac{1}{2} \times \) corresponding body diameter, opposite to the bottom of the buccal cavity:

*Microlaimus borealis* Steiner.

BB. Submedian cephalic setae less than \( \frac{1}{2} \times \) cephalic diameter:

b. Head distinctly swollen, broader than the neck:

c. Amphids \( 2 \times \) cephalic diameter from the anterior end:

*Microlaimus zosterae* Allgén.

c. Amphids \( 1.4 \times \) cephalic diameter from the anterior end:

*Microlaimus globiceps* De Man.

bb. Head not distinctly swollen:

D. Amphids opposite to the bottom of the buccal cavity:

*Microlaimus cyatholaimoides* De Man.

DD. Amphids behind the buccal cavity:

d. Submedian cephalic setae almost \( 0.5 \times \) cephalic diameter. Spicula without longitudinal strengthening:

*Microlaimus marinus* Schultz.

dd. Submedian cephalic setae \( 0.33 \times \) cephalic diameter. Spicula with median strengthening:

*Microlaimus honestus* De Man.

30. *Microlaimus honestus* De Man 1922.

Fig. 73-76.

**References:**

Allgén 1928c, p. 295.

Allgén 1929a, p. 33.

Allgén 1930a, p. 61, fig. 2a-b.

De Man 1922a, p. 128.

De Man 1922b, p. 241, fig. 20a-c.

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

12 ♂♂, 3 ♀♀ and 7 juv. from Oostende, on a break-water, 18.XI.1931; NaCl : 30.77 %.

**Dimensions:**

♂. L. : 0.600 mm.; \( x : 27.3; \beta : 8; \gamma : 12. \)

♂. L. : 0.707 mm.; \( x : 22.1; \beta : 8.03; \gamma : 10.5. \)

♀. L. : 0.710 mm.; \( x : 29.5; \beta : 8.05; \gamma : 10.3; V. : 49. \%

♀. L. : 1.170 mm.; \( x : 35.5; \beta : 9.8; \gamma : 11.8. \)

**Habitus:** Body elongate fusiform. *Cuticula* finely ringed, bare. Amphids \( 4 \mu \) in diameter = \( 0.29-0.33 \times \) corresponding body diameter, on 1.64 cephalic diameters from the anterior end. They are almost circular, a one-looped spiral, situated behind the buccal cavity. Their foreborder on 15.6 % of the oesophageal length.
Head distinctly set off from the remainder of the body, a truncate cone with slightly convex sides. Lips indistinct with 6 labial papillae (not depicted in fig. 74, since the lips were intruded in the specimen in question), 6 minute cephalic papillae and 4 cephalic setae, 0.35 \times \text{ corresponding cephalic diameter long}.

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

*Microlaimus honestus* De Man.

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

Oesophagus cylindrical; posterior bulb strong, occupying 0.18-0.20 \times \text{oesophageal length}. Nervering on 37 \% of the oesophageal length.

Ventral gland situated immediately behind the posterior end of the oesophagus. Pore not seen.
Female genital tract paired. Ovaries equal in length, outstretched, broadly rounded at their ends.

Spicula slightly curved with longitudinal cuticularised strengthenings, $21.3\mu = \text{more or less } 1 \times \text{anal diameter long.}$

Gubernaculum spoon-shaped, $12.2\mu = 0.6 \times \text{length of spicula.}$

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

Geographical distribution: North Sea and Baltic.

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

31. Microlaimus marinus (Schulz) 1932.

Syn.: Paracothonolaimus marinus Schulz.

Fig. 77-81.

References:

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

2 $\delta \varphi$, 17 $\varphi$ in 't Zwyn, sand and organic detritus, 28.XII.1931; NaCl: 21 $\%$.

Dimensions: $\delta \varphi$ (n. 2):

<table>
<thead>
<tr>
<th></th>
<th>1,321-1,400 mm.</th>
<th>0.938-1,205 mm.</th>
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<tbody>
<tr>
<td>$L.$</td>
<td>$a$ : 48.9-50.3</td>
<td>$a$ : 30-35.6</td>
</tr>
<tr>
<td>$\beta$</td>
<td>8.6-8.8</td>
<td>$\beta$ : 8.5-9.9</td>
</tr>
<tr>
<td>$\gamma$</td>
<td>16.2-18.1</td>
<td>$\gamma$ : 8.8-14.1</td>
</tr>
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</table>

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

Dimensions:

$\delta$ 1 $L.$ : 1,321 mm.; $a$ : 48.9; $\beta$ : 8.8; $\gamma$ : 18.1.

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<tr>
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<th>130</th>
<th>21</th>
<th>$M$</th>
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<td>9.8</td>
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$\varphi$ 1 $L.$ : 0.938 mm.; $\alpha$ : 30.5; $\beta$ : 9.08; $\gamma$ : 10.06; V.: 47.7 $\%$.

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<tr>
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<th>103</th>
<th>24</th>
<th>845</th>
<th>0.938 mm.</th>
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<td>9.6</td>
<td>22.4</td>
<td>30.4</td>
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THE FREELIVING MARINE NEMAS OF THE BELGIAN COAST. II

77. General view of a female.
78. Head end of a male.
79. Spicular apparatus of a male.
80. Posterior end of a male.
81. Posterior end of a female.
Habitus: Body distinctly narrowed anteriorly; head end 0.4 × width at the posterior border of the oesophagus.

Cuticle distinctly ringed, devoid of setae. Amphids distinctly spiral (one distinct and 2 faint loops); diameter 4.8μ = 0.42-0.45 × corresponding body diameter, situated caudad from the buccal cavity on 1.2 × cephalic diameter from the anterior end, or on 1/9 of the oesophageal length.

Head distinctly set off from the remainder of the body, slightly swollen; its length 0.75 × its width. Labial papillae not seen. Cephalic papillae setiform, very distinct. Cephalic setae 5.6μ long, about 0.5 × cephalic diameter.

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

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

Female genital tract paired, symmetrical; ovaries outstretched.

Testis beginning at the end of the first third of the body length. Spicula short, strong, curved, with a proximal swelling, the distinctness of which depends upon the view under which the spicula are seen. Chord of the spicula 28.3μ or more or less 1 anal diameter long. Gubernaculum 20μ, tender.

Tail gradually tapering, with bluntly rounded tip and a short conical outlet for the spinneret glands. In the female the tail measures 3.13-5.2 anal diameters, in the male it is 3 anal diameters long.

Geographical distribution: North Sea and Baltic.

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

32. Microlaimus acuticaudatus Schuurmans Stekhooven & De Coninck 1933.

References:
Schuurmans Stekhooven & De Coninck 1933m, p. 5, pl. III, fig. 1-3.

Habita: 2♀♀ from 't Zwyn, sand and organic detritus from a shallow channel, 28.XII.1931; NaCl : 21%/oo.
33. *Microlaimus robustidens* Schuurmans Stekhoven & De Coninck 1933.

**References:**

Schuurmans Stekhoven & De Coninck 1933a, p. 6, pl. III, fig. 4-7.

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

**Order III: ARAEOLAIMOIDEA**

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

The following families ought to be reckoned to this order:

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

   - *Spira* Bastian 1865, ex parte.
4. *Ascolaimus* Ditlevsen 1919, p. 168, syn. *Anticoma* Bastian 1865, ex parte:
   - *Axonolaimus* Buetschli 1874, ex parte;
   - *Monhystera* Bastian 1865, ex parte.
8. *Odontophora* Buetschli 1874, p. 49:
   - syn. *Conolaimus* Filipjev 1918-1921, p. 323;
   - *Trigonolaimus* Ditlevsen 1919, p. 177.

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

3. *Diploeltis* Cobb 1905, p. 100 (Stiles & Hassall 1905):
   - syn. *Dipeltis* Cobb 1891, p. 13;
   - *Discophora* Villot 1875, p. 463.

**Appendix:** *Disconema* Filipjev 1918-1921, p. 305.
This genus possesses amphids which remember those of Diploeltis, but it differs from the other representatives of the group by its 6-radiate symmetry.

III. — The family Camacolaimidae with the genera:
1. Acontiolaimus Filippi 1918-1921, p. 186.
2. Camacolaimoides De Coninck & Schuurmans Stekhoven 1933, see below, p. 66.
5. Onchium Cobb 1920, p. 303, n. 83.

IV. — The family Halaphanolaimidae.

We propose to create the afore mentioned new family for a group of genera which show a close relation to the Camacolaimidae at the one side, and the Plectidae at the other side. They are characterised by:
1. The typical 4-radiate symmetry in the distribution of the cephalic setae;
2. The spiral amphid from which that of Anaplectus De Coninck & Schuurmans Stekhoven (see below), Dermatolaimus Steiner and Plectus Bastian may be derived;
3. The spicular apparatus of the male, which strongly resembles that of Camacolaimus in certain genera, e.g., Halaphanolaimus, Deontolaimus, Dagda, Diodontolaimus, and so on, and may easily be derived from this type in the other genera which belong to this family;
4. The preanal tubuli in the male, outlets of a series of preanal glands, typical for this family.

We reckon to this family the following genera:
1. Anaplectus De Coninck & Schuurmans Stekhoven nom. nov.
   The present genus is proposed for all those species, formerly reckoned to Plectus Bastian, which possess a crown of 4 cephalic setae and a set of preanal tubuli in the male sex. Type species: Anaplectus granulosus (Bastian).
2. Aphanolaimus De Man 1860, p. 5 and 1884, p. 34.
3. Cricolaimus Southern 1914, p. 29.
4. Dagda Southern 1914, p. 29.
5. Deontolaimus De Man 1880, p. 3 and 1884, p. 31.
7. Diodontolaimus Southern 1914, p. 31.
8. Halaphanolaimus Southern 1914, p. 11.
Appendix:

11. *Aegialoalaimus* De Man 1907a, p. 228 and 1907b, p. 35.

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


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

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

V. — The family *Plectidae*.

In this family remain:

4. *Pycnolaimus* Cobb 1920, p. 258, n. 40:
   Closely allied with *Wilsonema* Cobb 1913.
5. *Wilsonema* Cobb 1913, p. 443:
   syn. *Bitholinema* De Coninck 1931b, p. 2.

Appendix: Insufficiently characterised and therefore of uncertain position:

6. *Aulolaimoides* Micoletzy 1915, p. 3:
   Shows great resemblance with *Siphonolaimus* De Man 1893.

VI. — Appendix: The family *Tripyloidae*.

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

Thus the systematic position of this family remains uncertain.

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

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

1. *Bathylaimus* Cobb 1894, p. 409:
   (neec *Bathylaimus* Ditlevsen 1919, p. 168 = *Ascolaimus* Ditlevsen.
   *Bathylaimus* Filipjev 1922a, p. 107 and 1925, p. 198 = *Parabathylaimus* nov. gen.).
   syn. *Cothonolaimus* Ditlevsen 1919: syn. *Macrolaimus* Ditlevsen 1919, p. 188,
   neec *Macrolaimus* Maupas 1900, p. 578.

2. *Parabathylaimus* De Coninck & Schuurmans Stekhoven 1933, nov. gen. (see below!)

3. *Tripyloides* De Man 1886, p. 60:

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

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

### 1. — Family AXONOLAIMIDAE.

**Genus ARAEOLAIMOIDES** De Man 1893.

Syn.: *Coinonema* Cobb 1920.

The following species belong to this genus:

1. *Araeolaimoides microphthalmus* De Man 1893, p. 86, pl. V, fig. 4.
2. *Araeolaimoides punctatus* (Cobb) 1920, p. 259:
3. *Araeolaimoides zosterae* Filipjev 1918, p. 326, pl. X, fig. 73a-d.

**KEY TO THE SPECIES OF ARAEOLAIMOIDES**

I. Amphids on 1 cephalic diameter from the anterior end:
   *Araeolaimoides punctatus* Cobb.

II. Amphids on 3 cephalic diameters from the anterior end:
   A. Amphids *Axonolaimus*-like; ocelli on 1/2 of oesophageal length:
      *Araeolaimoides microphthalmus* De Man.
   AA. Amphids *Araeolaimus*-like; ocelli on 1/3 of oesophageal length:
      *Araeolaimoides zosterae* Filipjev.

No representatives of this genus are found hitherto along the Belgian Coast, *Araeolaimoides microphthalmus* De Man however very probably will be found in a near future, since it occurs also in the Channel and in Helgoland.
The following species of the genus *Araeolaimus* were described until the present moment.

1. *Araeolaimus bioculatus* (De Man) 1878:
   syn. *Spira bioculata* De Man 1878, pp. 20-21, pl. VIII, fig. 13a-d.

2. *Araeolaimus cobbi* Steiner 1916, p. 637, pl. XVII, fig. 36a-b; pl. XXXII, fig. 36c-e, is no *Araeolaimus*. Probably a *Phanodermatid* of uncertain position.


4. *Araeolaimus ditlevseni* Allgén 1928, p. 287, fig. 19a-d = *A. elegans* De Man 1888.


6. *Araeolaimus elegans* De Man 1888, p. 16, pl. I, fig. 9; pl. II, fig. 9b:
   *A. dolichoposthius* Saveljev 1912.
   *A. spectabilis* Ditlevsen 1921.


8. *Araeolaimus longicauda* Allgén 1929b, p. 490, fig. 44a-b:
   *A. tenuis* (Allgén) 1932.

9. *Araeolaimus macrocirculus* Kreis 1928, p. 185, pl. IX and XII, fig. 31.

10. *Araeolaimus mediterranea* (De Man) 1878, pp. 21-22, pl. IX, fig. 14a-c:
    syn. *Spira mediterranea* De Man 1878.

11. *Araeolaimus ponticus* Filipjev 1922a, p. 178, pl. IV, fig. 35a-d.

12. *Araeolaimus sabulicola* (Allgén) 1929b, p. 466:

13. *Araeolaimus spectabilis* Ditlevsen 1921, p. 8, fig. 3, pl. II, fig. 1; pl. III, fig. 3 and 9 = *A. elegans* De Man 1888.

14. *Araeolaimus steineri* Filipjev, 1922a, p. 177:
    syn. *A. elegans* Steiner (nee De Man) 1916, pp. 634-636, pl. XVII, fig. 38b and pl. XXXIII, fig. 38c-e, nec pl. XVII, fig. 38a, nec pl. XXXIII, fig. 38f.
    *A. sabulicola* (Allgén) 1929.

15. *Araeolaimus tenuis* (Allgén) 1932c, p. 426, fig. 11a-d:

16. *Araeolaimus tristis* Allgén 1931, pp. 258-259, fig. 15a-c, a doubtful species; perhaps a synonym of *A. elegans* De Man.
KEY TO THE TRUE SPECIES OF ARAEOLAIMUS
(N° 1, 6-41, 14 of the foregoing list.)

I. Nervering on 1/4 of the oesophageal length:
   *Araeolaimus macrocirculus* Kreis.

II. Nervering at the middle or behind the middle of the oesophagus:
   A. Cephalic setae 1 × cephalic diameter:
      *Araeolaimus longicauda* Allek.
      AA. Cephalic diameter at the utmost 0,65 × cephalic diameter:
         a. Amphids opposite to the anterior portion of the buccal cavity; foreborder on 0,117 × the distance: anterior end-ocelli:
            *Araeolaimus steineri* Filipjev.
         aa. Amphids opposite to the posterior portion of the buccal cavity or behind it
      B. Amphibial diameter 1/2 × corresponding body diameter or larger:
         b. Foreborder of the amphids on 0,166 × the distance: anterior end-ocelli.
            Gubernaculum without a caudal apophysis:
            *Araeolaimus ponticus* Filipjev.
         bb. Foreborder of the amphids on 0,222 × the distance: anterior end-ocelli. Gubernaculum without a caudal apophysis:
            *Araeolaimus filipjevi* Schuurmans Stekhoven & Adam.
      BB. Amphibial diameter less than 1/2 × corresponding body diameter:
         c. Ocelli absent:
            *Araeolaimus mediterraneus* (De Man).
         cc. Ocelli present:
            d. Ocelli on 4 × the distance: anterior end-foreborder of the amphids:
               *Araeolaimus elegans* De Man.
            dd. Ocelli on 3 × the distance: anterior end-foreborder of the amphids:
               *Araeolaimus bioculatus* (De Man).

We found in the Belgian material 1 species only:

34. *Araeolaimus filipjevi* Schuurmans Stekhoven & Adam 1931.

Fig. 82.

References.
Schuurmans Stekhoven & Adam 1931, p. 52, pl. X, fig. 10-12.
1♂, 1♀ and 5 juv. from Oostende, on a break-water, 18.XII.1931; NaCl : 30,77 °/oo.

Dimensions: ♀. L. : 1,165 mm.; α : 42.8; β : 7.6; γ : 13.7.

We may limit ourselves to some additional notes on the genital armature of the male. Schuurmans Stekhoven & Adam oversaw the tender gubernaculum which is plate-like and presents the indication of a caudal apophysis only.
Spicula strongly curved, not so slender as depicted by Schuurmans Stekhoven & Adam in their fig. 11, pl. 10. Tail 4 times as long as the chord of the spicula, beset with some short setae which occur in the subventral and subdorsal lines. Our fig. 82 is taken after a somewhat flattened individual, which naturally alters the relations.

**Geographical distribution**: North Sea.

*Arcaolaimus filipjevi* Schuurmans Stekhoven & Adam.

82. Spicular apparatus and tail of a male.

**Genus ASCOLAIMUS Ditlevsen 1919.**

*Syn.*: *Anticoma* Bastian 1865, ex parte.
*Axonolaimus* Buetschli 1874, ex parte.
*Monhystera* Bastian 1865, ex parte.

Up to this moment, only a single species represents this genus.
35. *Ascolaimus elongatus* (Buetschli) 1874.

Fig. 83-84.

Syn: *Anticoma longisetosa* Kreis 1924.
*Ascolaimus elongatus* Skwarra 1921.
*Ascolaimus filiformis* Ditlevsen 1919.
*Axonolaimus serpentulus* De Man 1922.
*Axonolaimus tenuis* Schulz 1932.
*Monohystera elongata* Buetschli 1874.

---

Ascolaimus elongatus (Buetschli).

83. Anterior end of a male with partially expanded mouth.
84. Transition between oesophagus and intestine.

Axonolaimus paraspinosus Schuurmans Stekhoven & Adam.

86. Head end of a male.

References:

Allgén 1929c, pp. 34-35, fig. 8a-b, *Ascolaimus filiformis* Ditlevsen.
Buetschli 1874, p. 26, pl. II, fig. 9a-d, *Monohystera elongata* Buetschli.
THE FREELIVING MARINE NEMAS OF THE BELGIAN COAST. II

Ditlevsen 1919, pp. 168-169, pl. IV, fig. 2, 4, 8; pl. VI, fig. 6 Ascolaimus filiformis Ditlevsen.

Filipjev 1930, pp. 51-52, fig. 34-a-c, Ascolaimus elongatus Skw arra.

Kreis 1924, pp. 4-6, pl. I, fig. 2-3, Anticoma longisetosa Kreis.

De Man 1922c, p. 117, Axonolaimus serpentulus nom. nudum.

Schulz 1932, pp. 411-412, fig. 45-a-c, Axonolaimus tenuis Schulz.

Schuurmans Stekhoven 1931, p. 618, Ascolaimus filiformis Ditlevsen.

Schuurmans Stekhoven & De Coninck 1932a, pp. 127-128, Ascolaimus elongatus (Buetschli).

Schuurmans Stekhoven & De Coninck 1932b, pp. 149-163, fig. 1-8, Ascolaimus elongatus (Buetschli).

Skw arra 1921, p. 9, fig. 16-a-b, Ascolaimus elongatus Skw arra.

1 ♀ from Oostende, on a break-water, 18 XI.1931; NaCl : 30,77 %.

2 ♀♀ and 1 juv. from Oostende, from a puddle on the strand, 18 XI.1931; NaCl : 29,3 %.

2 ♀♀ and 23 juv. from Heyst-Zeebrugge; strand, 2 IX.1931.

5 ♀♂, 6 ♀♀ and 9 juv. from 't Zwyn, sand and organic detritus, 28 XII.1931; NaCl: 21 %.

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

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

Geographical distribution: North Sea and Baltic.

Genus AXONOLAIMUS De Man 1888.

Syn.: Anoplostoma Buetschli 1874 ex parte.

Until now 16 species of Axonolaimus were described:

1. Axonolaimus demani nom. nov.:


4. Axonolaimus paraspinosus Schuurmans Stekhoven & Adam 1931, p. 50 pl. X, fig. 6-9:
   syn. Anoplostoma spinosum De Man 1888 nec Buetschli.

Axonolaimus similis Schulz 1932.

5. Axonolaimus ponticus Filipjev 1918-1921, p. 322, pl. X, fig. 71-a-c.
6. *Axonolaimus serpulentus* De Man 1922c, p. 117 = *Ascolaimus elongatus* (Buetschli) 1874.
7. *Axonolaimus setosus* Filipjev 1918-1921, p. 319, pl. X, fig. 70a-c.
8. *Axonolaimus setosus* Skwarra 1921, p. 9, fig. 15a-b = *Axonolaimus villosus* Skwarra 1922.
9. *Axonolaimus similis* Schulz 1932, p. 410, fig. 44a-b = *Axonolaimus paraspinosus* Schuurmans Stekoven & Adam 1931.
10. *Axonolaimus spinosus* (Buetschli) 1874, p. 37, pl. IV, fig. 20a; pl. V, fig. 20b-c : syn. *Anoplotaoma spinosum* Buetschli 1874, nec De Man 1888.
11. *Axonolaimus tenuis* Schulz 1932, pp. 411-412, fig. 45a-c = *Ascolaimus elongatus* (Buetschli) 1874.
12. *Axonolaimus typicus* De Man 1922b, p. 232, fig. 20a-b.
  syn. *Axonolaimus setosus* Skwarra 1921 nec Filipjev 1918.

Doubtful species:
14. *Axonolaimus filiformis* De Man 1889a, p. 3.
16. *Axonolaimus polaris* Cobb 1914, p. 30, n° 24 = *Odontophora polaris* (Cobb) 1914 (see below).

**KEY TO THE TRUE SPECIES OF AXONOLAIMUS**
(N° 1, 3-5, 7, 10, 12-13 of the foregoing list.)

I. Amphids a closely pinched loop :
   a. Body length less than 2 mm.; amphids 0,75 × length of buccal cavity; 4 × as long as wide :
      *Axonolaimus spinosus* (Buetschli).
   aa. Body length more than 3 mm.; amphids 0,66 × length of buccal cavity; 3 × as long as wide :
      *Axonolaimus setosus* Filipjev.

II. Amphids an open loop :
   A. Nervering in front of the middle of the oesophagus :
      *Axonolaimus timalis* Saveljev.
   AA. Nervering at 2/3-3/4 of the oesophageal length :
   B. Cephalic setae 1,5 × as long as the cephalic diameter :
      *Axonolaimus villosus* Skwarra.
   BB. Cephalic setae less than 1 × cephalic diameter :
   b. Amphids roundish, only slightly longer than wide :
   c. Cephalic setae accompanied by minute bristles, which reach at the utmost 1/3 of the length of the longer cephalic setae :
      *Axonolaimus typicus* De Man.
   cc. Cephalic setae not accompanied by minute bristles :
      *Axonolaimus demani* nom. nov.
bb. Amphids elongate, at least $2 \times$ as long as wide:

d. On a level with the middle of the amphids small setae are to be seen:
   *Axonolaimus paraspinosus* Schuurmans Stekhoven & Adam.

dd. No such setae on a level with the amphids:
   *Axonolaimus ponticus* Filipjev.

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

1. *Axonolaimus paraspinosus* Schuurmans Stekhoven & Adam.
2. *Axonolaimus spinosus* (Buetschi).


*Fig. 85-88.*

*Syn.:* *Axonolaimus similis* Schulz 1932.

*Axonolaimus spinosus* De Man 1888 nec Buetschi 1874.

*References:*

De Man 1888, p. 19, pl. II, fig. 11-11b, *Anoplostoma spinosum* (Buetschi).

Schneider, G. 1926b, p. 38, fig. 2, *Axonolaimus spinosus* (Buetschi).

Schulz 1932, p. 410, fig. 44a-b, *Axonolaimus similis* Schulz.

Schuurmans Stekhoven & Adam 1931, p. 50, pl. X, fig. 6-9, *Axonolaimus paraspinosus* Schuurmans Stekhoven & Adam.

1 $\sigma$, 2 $\varphi$ and 4 juv. from Oostende, on a break-water, harbour entrance, IX.1931: De Saedeleer.

*Dimensions:*

$\sigma$ L.: $1,675$ mm.; $\alpha$: 29,9; $\beta$: 8,04; $\gamma$: 10,5.

\[
\begin{array}{ccccccc}
0 & 20 & ? & 208 & 388 & M & 1816 \\
12 & 38 & ? & 53 & 40 & 8 \\
\end{array}
\]

$1,675$ mm.

$\varphi$ L.: $1,710$ mm.; $\alpha$: 31,6; $\beta$: 7,6; $\gamma$: 10,2; V.: 53,6 %.

\[
\begin{array}{ccccccc}
0 & ? & ? & 225 & 416 & 916 & 1375 & 1542 \\
13 & 38 & 54 & 36 & 8 \\
\end{array}
\]

$1,710$ mm.

$\varphi$ L.: $1,790$ mm.; $\alpha$: 27,7; $\beta$: 7,8; $\gamma$: 9,1; V.: 53,6 %.

\[
\begin{array}{ccccccc}
0 & 17,8 & 183 & 226 & 382 & 960 & 1580 & 1595 \\
15,5 & 38 & 64,4 & 37,3 & 9 \\
\end{array}
\]

$1,790$ mm.

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

*Cuticle* smooth, with some short hairs, especially in the neckregion and along the tail. The lateral fields are very broad, $0,44 \times$ corresponding body diameter.
Axonolaimus paraspinosus Schuermans Stekoven & Adam.

85. General view of a female.
87. Spicular apparatus of a male.
88. Preanal glands in a male.
**Amphids** loop-shaped, open, 10μ long and 4.6μ broad, 0.30 x corresponding body diameter, situated just behind the cephalic suture, opposite to the second portion of the buccal cavity, accompanied by 2 small setae.

**Head** distinctly set off from the remainder of the body, somewhat swollen. There is a crown of labial papillae, a crown of minute cephalic papillae and a crown of 4 cephalic setae 0.66 x cephalic diameter.

**Buccal cavity** 20μ deep, 1.60-1.65 x cephalic diameter; vestibular portion with 8 longitudinal cuticularisations. Second portion 4-5 x as long as the vestibular portion.

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

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

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

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

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

**Geographical distribution**: North Sea and Baltic.

37. **Axonolaimus spinosus** (Bütschli) 1874.

**Syn.**: Anoplostoma spinosum Bütschli 1874.

**References**:

- Allgén 1927a, pp. 57-58.
- Allgén 1929a, p. 47.
- Allgén 1929c, pp. 33-34.
- Bütschli 1874, p. 37, pl. 4, fig. 20a; pl. 5, fig. 20b-c.
- Filipiev 1930, p. 50.
- De Man 1922b, p. 233, fig. 21a-c.
- Schneider, G. 1906, p. 39, pl. 2, fig. 18a-b.
- Schneider, G. 1927, pp. 38-40, fig. 2.
- De Man 1888, pp. 50-51, pl. 10, fig. 6-9.

1♂ and 2 juv. from Oostende on a break-water, 18 XI 1931; NaCl: 30.77 °/oo.

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

38. *Axonolaimus demani* nom. nov.


References :
De Man 1928, pp. 97-101, fig. 1-7

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

Genus ODONTOPHORA Buetschli 1874.

Syn. : *Axonolaimus* De Man 1888 ex parte.
*Conolaimus* Filipjev 1918-1921.
*Trigonolaimus* Ditløvsen 1919.

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

The genus *Odontophora* embraces the following species :

1. *Odontophora angustilaima* (Filipjev) 1918, p. 324, pl. X, fig. 72 :
   syn. *Conolaimus angustilaimus* Filipjev 1918.

2. *Odontophora armata* (Ditløvsen) 1919, p. 178, pl. VIII, fig. 1, 4, 6, 7 :
   syn. *Trigonolaimus armatus* Ditløvsen 1919.
   *Trigonolaimus intermedius* Allgén 1929.
   *Trigonolaimus minor* Ditløvsen 1919.

3. *Odontophora intermedia* (Allgén) 1929b, p. 487, fig. 42a-b :
   = *Odontophora armata* (Ditløvsen) 1919.

4. *Odontophora lotygicaudata* Schuurmans Stekhoven & De Coninck 1933, p. 8, pl. IV, fig. 3-4.
5. *Odontophora longisetosa* (ALLGÉN) 1928c, p. 303, fig. 4a–b:
syn. *Conolaimus longisetosus* ALLGÉN 1928.

6. *Odontophora minor* (DITLEVSEN) 1919, p. 180, pl. VIII, fig. 5, 9, pl. IX, fig. 4, 5:
   = *Odontophora armata* (DITLEVSEN) 1919.

7. *Odontophora setosa* (ALLGÉN) 1929c, p. 37, fig. 9a–b:
syn. *Trigonolaimus setosus* ALLGÉN 1929.
   *Axonolaimus elegans* SCHULZ (confer above, p. 101).
   ? *Odontophora marina* BUETSCHLI 1874 (see below).
   *Odontophora longisetosa* SCHUURMANS STEKHOVEN 1931. nec ALLGÉN.

Doubtful species:

8. *Odontophora marina* BUETSCHLI 1874, p. 49, pl. III, fig. 13; it is very probably that
this species is synonym with *O. setosa* (ALLGÉN); a comparison of Allgén’s and
Schulz’s figures of *O. setosa* (ALLGÉN) with Buetschli’s figure of *O. marina* shows
a striking similarity in the pilosity at the anterior end. The fact that Buetschli
and Schulz studied specimens of the same habitat (Kiel) speaks also in favour of a
possible synonymy.

9. *Odontophora parasetaosa* (ALLGÉN) 1929b, p. 489, fig. 43a–b:

10. *Odontophora polaris* (COBB) 1914, p. 30:
syn. *Axonolaimus polaris* COBB 1914.

KEY TO THE SPECIES OF THE GENUS ODONTOPHORA

I. Tail elongate, almost cylindrical, 10 anal diameters long; amphids large, 1 cephalic
diameter long:
   *Odontophora longicaudata* SCHUURMANS STEKHOVEN & DE CONINCK.

II. Tail clumsy, conical, at the utmost 5 anal diameters long:
   A. Cephalic and cervical setae very long; cephalic setae 2,2 × cephalic diameter,
cervical setae 1 × body diameter; amphids very large, 1 cephalic diameter
long:
   *Odontophora longisetosa* (ALLGÉN).
   AA. Cephalic setae less than 1,5 × cephalic diameter:
      a. Amphids roundish; cephalic setae 1,1 × cephalic diameter, subcephalic setae
as long as 2/3 cephalic setae:
      *Odontophora angustilaima* (FILIPJEV).
      aa. Amphids elongate; length of the subcephalic setae less than 1/2 that of
the cephalic ones:
      b. Excretory pore opposite to the posterior end of the buccal cavity, on
1,5 × cephalic diameter from the anterior end:
      *Odontophora setosa* (ALLGÉN).
      bb. Excretory pore far behind the buccal cavity on 4,4 cephalic diameters
from the anterior end:
      *Odontophora armata* (DITLEVSEN).
39. **Odontophora armata** (Ditlevsen) 1919.

Fig. 89-95.

**Syn.**: *Trigonolaimus armatus* Ditlevsen 1919.<br>  *Trigonolaimus intermedius* Allgén 1929.<br>  *Trigonolaimus minor* Ditlevsen 1919.

**References**:
- Allgén 1929d, p. 305, fig. 2a-b, *Trigonolaimus armatus*.
- Allgén 1929b, p. 487, fig. 42a-b, *Trigonolaimus intermedius*.
- Allgén 1930b, p. 204, *Conolaimus armatus*.
- Allgén 1931, p. 254, *Conolaimus armatus*.
- Ditlevsen 1919, p. 178, pl. VIII, fig. 1, 4, 6, 7, *Trigonolaimus armatus*.
- Ditlevsen 1919, p. 180, pl. VIII, fig. 5, 9; pl. IX, fig. 4, 5, *Tr. minor*.
- Schuurmans Stekhoven & De Coninck 1932, p. 129, fig. 1a-c, *Conolaimus armatus*.

1 ♂ and 1 juv. from Oostende, on a break-water, harbour entrance, IX.1931; De Saedeleer.

1 ♂, 1 ♀ and 11 juv. from Heyst-Zeebrugge, 2.IX.1931.

**Dimensions**:

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>♂</td>
<td>L. : 2,83 mm.; x : 73,6; β : 14,84; γ : 21,77.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>10,8</td>
<td>33,6</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>2700</td>
</tr>
<tr>
<td>♂</td>
<td>L. : 4 mm.; x : 85; β : 21,34; γ : 29,2; V. : 53,1 %.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>21,6</td>
</tr>
<tr>
<td></td>
<td>36</td>
<td>50,4</td>
</tr>
<tr>
<td></td>
<td>187</td>
<td>2485</td>
</tr>
<tr>
<td></td>
<td>4 mm.</td>
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</tbody>
</table>

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

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

**Buccal cavity** typical. Vestibular portion with 6 protrusible teeth linked together by striated elastic (?) ligaments. OEsophageal portion simply funnel-shaped.
Odontophora armata (Ditlevsen).

89. General view of a male.
90. Head end of a juvenile, intruded.
91. Head end of a male, opened.
92. Head end of a female, slightly extruded.
93. Head end of a male, totally extruded.
94. Spicular apparatus of a male.
95. Spicular apparatus and tail of a male.
Esophagus cylindrical, slightly broadening towards the base.
Nerve ring on 70% of the oesophageal length.
Ventral gland post-oesophageal; excretory pore on 4.5 cephalic diameters from the anterior end.
Female genital tract paired, symmetrical; ovaries outstretched.
Spicula strong, arcuate; proximal end knobbed, distal end pointed; chord 1 anal diameter long. Gubernaculum anvil-shaped with a distinct dorsal apophysis.
Tail elongate; basal 2/3 almost cylindrical; apical 1/3 conical with bluntly rounded apex. Short stiff bristles are placed in subventral and subdorsal lines along the male tail. Relations in the male tail: length 4.2 × anal diameter.

Geographical distribution: North Sea and Baltic.

40. Odontophora longicaudata Schuurmans Stekhoven & De Coninck 1933.

References:
Schuurmans Stekhoven & De Coninck 1933, p. 8, pl. IV, fig. 3-4.
1 juv. from Oostende, from a puddle on the strand, 18.XI.1931; NaCl: 29.5 /oo.

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

Geographical distribution: North Sea.

III. — Family CAMACOLAIMIDAE.

Genus CAMACOLAIMUS De Man 1889.

Syn.: Ypsilon Cobb 1920.

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

The following species of Camacolaimus were described:

1. Camacolaimus australis Allgén 1932b, p. 125, fig. 17a-c.
2. Camacolaimus bathycola Filipjev 1922a, p. 111, pl. 1, fig. 8a-b = Acontiolaimus bathycola (Filipjev) 1922.
THE FREELIVING MARINE NEMAS OF THE BELGIAN COAST. II

3. Camacolaimus dolichocercus Filipjev 1922a, p. 112, pl. I, fig. 9a-c = Acontiolaimus dolichocercus (Filipjev) 1922.

4. Camacolaimus exilis (Cobb) 1920, p. 314, n° 96:

5. Camacolaimus longicauda De Man 1922a, p. 124, and 1922b, p. 225, fig. 11a-c.

6 Camacolaimus praedator De Man 1922a, p. 125 and 1922b, p. 225, fig. 12a-b = Camacolaimoides praedator (De Man) (see below).

7. Camacolaimus tardus De Man 1889a, p. 8 and 1889b, p. 3, pl. V, fig. 2-2e.

8. Camacolaimus zostericola (Filipjev) 1918-1921, p. 187, pl. VI, fig. 36 = Acontiolaimus zostericola Filipjev 1918.

Doubtful species:

9. Camacolaimus propinquus Allgén 1929b, p. 446, fig. 11a-d, may be a synonym of Camacolaimus longicauda De Man; needs further examination.

KEY TO THE SPECIES OF CAMACOCLAIMUS

I. Cephalic setae very short, \( \frac{1}{7} \times \text{cephalic diameter} \):
A. Tail 2.5-3 anal diameters long. Ventral gland posterior to the oesophagus:
Camacolaimus tardus De Man.
AA. Tail 4 anal diameters long. Ventral gland opposite to the base of the oesophagus:
Camacolaimus australis Allgén.

II. Cephalic setae 1 \( \times \) cephalic diameter or longer:
a. Tail 5-6 anal diameters long:
Camacolaimus longicauda De Man.
aa. Tail 2.5 anal diameters long:
Camacolaimus exilis (Cobb).

41. Camacolaimus longicauda De Man 1922.

Fig. 96-99.

References:
De Man 1922a, p. 124.
De Man 1922b, p. 225, fig. 11a-c.
2 ♀ ♂ from Heyst-Zeebrugge, 21X.1931.
1 ♂ and 1 ♀ from Oostende, sand, 28.XII.1931.

Dimensions:

♀ L: 1,400 mm.; \( \alpha: 87.4; \beta: 6.8; \gamma: 17.9 \).
\[
\begin{array}{cccccc}
\text{L} & \text{M} & \text{W} & \text{H} & \text{F} & \text{D} \\
0 & 7 & 100 & 203 & 273 & 14320 \\
7.8 & 12.5 & 14 & 16 \\
\end{array}
\]

♀ L: 1,430 mm.; \( \alpha: 72.7; \beta: 6; \gamma: 17.7; V: 49.3 \% \).
\[
\begin{array}{cccccc}
\text{L} & \text{M} & \text{W} & \text{H} & \text{F} & \text{D} \\
0 & ? & 100 & 237 & ? & 703 \\
7.1 & 17 & 18.5 & 19 & 45 & 1,43 mm. \\
\end{array}
\]
Body filiform, cylindrical. Cuticle very finely ringed, 12-14 rings on 10μ, bare.

Amphids spiral-shaped, 1 winding, 2,2μ in diameter, 1/3 x corresponding body width.

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

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

Oesophagus gradually broadening towards the posterior end.

Nerve ring at or in front of the middle of the oesophageal length.

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

Female genital tract paired, symmetrical; ovaries reflexed.
Spicula very slender, slightly curved, with at the proximal end a swollen nod, pointing ventrad. Apex sharply pointed. Chord 26.9 µ or 1.66 anal diameters long. Gubernaculum minute, 6.9 µ long; median portion linear, with lateral alae.

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

Geographical distribution: North Sea and Baltic.

Genus CAMACOLOIMOIDES nov. gen.
Syn.: Camacolaimus De Man ex parte.

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

42. Type species: **Camacolaimoides praedator** (De Man) 1922.

Syn.: Camacolaimus praedator De Man 1922.

References:
De Man 1922a, p. 125.
De Man 1922b, p. 225, fig. 12a-b.

IV. — Family HALAPHANOLAIMIDAE

Genus DERMATOLAIMUS Steiner 1916.

Until now 4 species of this genus were described:
1. *Dermatolaimus ditlevseni* Steiner 1916, pp. 604-606, pl. XXVII, fig. 21a-d.
2. *Dermatolaimus elegans* Schuurmans Stekhoven & De Coninck 1933a, pp. 7-8, pl. II, fig. 3-5.
4. *Dermatolaimus trichodes* Kreis 1929, pp. 42-43, pl. I, fig. 12a-c, pl. III, fig. 12d.

KEY TO THE SPECIES

I. Amphidial diameter about 0.5 × corresponding body diameter:
   A. Tail somewhat swollen at the end, bluntly rounded:
      *Dermatolaimus trichodes* Kreis.
   AA. Tail not swollen at the end:
      *Dermatolaimus steineri* Filipjev.
II. Amphidial diameter about 0.33 x corresponding body diameter, or less:

a. Head long, 6/9 x cephalic diameter at the base of the cephalic setae; a truncate cone:
   Dermatolaimus ditilevsi STEINER.

aa. Head short, 4/9 x cephalic diameter at the base of the cephalic setae:
   Dermatolaimus elegans SCHUURMANS STEKHOVEN & DE CONINCK 1933.

43. Dermatolaimus elegans SCHUURMANS STEKHOVEN & DE CONINCK 1933.

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

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

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

Genus HALAPHANOLAIMUS Southern 1914.

44. Halaphanolaimus pellucidus SOUTHERN 1914.

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

It is questionable if Halaphanolaimus longisetosus Allgén 1928c, p. 287, fig. 2a-b, belongs to this genus.

Geographical distribution: Atlantic, North Sea.

Genus LEPTOLAIMUS De MAN 1876.

From this genus, until now only 2 species are known:
1. Leptolaimus papilliger De MAN 1876, pp. 169-171, pl. X, fig. 42a-b, pl. XI, fig. 42c-e.
   DE MAN 1884, pp. 81-82.
   DE MAN 1922b, p. 226, fig. 43a-b.
2. Leptolaimus setiger SCHUURMANS STEKHOVEN & DE CONINCK 1933a, p. 8, pl. IV, fig. 1-2.
KEY TO THE SPECIES

I. Head with a crown of 4 long submedian setae. Amphidial diameter larger than 0,5 × corresponding body diameter, on 3 × cephalic diameter from the anterior end:

*Leptolaimus setiger* Schuurmans Stekhover & De Coninck.

II. Head without cephalic setae, with a crown of labial papillae and a crown of 4 submedian cephalic papillae. Amphidial diameter 0,33 × corresponding body diameter on 1,5 × cephalic diameter from the anterior end:

*Leptolaimus papilliger* De Man.

The only species that was found along the Belgian Coast is:

45. *Leptolaimus setiger* Schuurmans Stekhover & De Coninck 1933.

References:

Schuurmans Stekhover & De Coninck 1933a, p. 8, pl. IV, fig. 1-2.

1 juvenile female specimen from a puddle on the strand at Oostende, 18.XI.1931; NaCl : 29,3 %.

Some corrections may be given to our original description. The length of the cephalic setae is 6μ instead of 4,6μ, but the relation to the cephalic diameter remains 1,66.

The length of the buccal cavity is 20μ. The cobbian formula in absolute measures becomes:

<table>
<thead>
<tr>
<th>0</th>
<th>42,5</th>
<th>82,5</th>
<th>140</th>
<th>360</th>
<th>460</th>
<th>540</th>
<th>785</th>
<th>0,930 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>3,6</td>
<td>7,3</td>
<td>19</td>
<td>19</td>
<td>12,5</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

For further information, confer the original description.

VI. — Family Tripyloidae.

The representatives of the genus *Cothonolaimus* Ditlevsen answer quite to Cobb's diagnose of his genus *Bathylaimus*. Both genera show a buccal cavity which is divided into 2 portions of unequal size. So we may go safe in saying that *Cothonolaimus* Ditlevsen is a synonym of *Bathylaimus* Cobb.

Some species ascribed to the genus *Bathylaimus* Cobb by Filipjev so, for instance, *B. poneticus* Filipjev and *B. profundus* Filipjev possess a voluminous buccal cavity which is not subdivided and lips of minor development as in the typical species of *Bathylaimus*. These species belong to another genus for which we propose the name *Parabathylaimus* nov. gen.
GENUS BATHYLAIMUS Conn 1894.

Syn.: Cothonolaimus Ditløvsen 1919.
nee Bathylaimus Ditløvsen 1919.
nee Bathylaimus Filipjev 1922 & 1925 ex parte.
nee Bathylaimus von Daday 1905.

The following species were described until now:
1. Bathylaimus assimilis De Man 1922, pp. 119-120, pl. I, fig. 2-2c.
2. Bathylaimus australis Conn 1894, pp. 409-410, fig. 9.
3. Bathylaimus cobbi Filipjev 1922a, pp. 106-107, pl. I, fig. 5a-b.
4. Bathylaimus denticaudatus Allgén 1930a, pp. 60-61, fig. 3a-b = Parabathylaimus ponticus (Filipjev) 1922.
6. Bathylaimus gracilis (Ditløvsen) 1919, pp. 190-191, pl. IX, fig. 3; pl. X, fig. 4:
   syn. Cothonolaimus gracilis Ditløvsen 1919.
   = Triglyoides septentrionalis De Coninck & Schuurmans Stekhoven nom. nov.
7. Bathylaimus inermis (Ditløvsen) 1919, p. 189, pl. IX, fig. 1, 6, 8, 9:
   syn. Cothonolaimus inermis Ditløvsen 1919.
8. Bathylaimus longisetosus (Allgén) 1929c, pp. 16-17, fig. 2a-d:
   syn. Cothonolaimus longisetosus Allgén 1929.
12. Bathylaimus paralongisetosus Schuurmans Stekhoven & De Coninck 1933a, pp. 2-3, pl. IV, fig. 4-6.
13. Bathylaimus ponticus Filipjev 1922a, pp. 107-108, pl. I, fig. 6a-b = Parabathylaimus ponticus (Filipjev) 1922:
   syn. Bathylaimus denticaudatus Allgén 1930.
14. Bathylaimus profundus Filipjev 1925, p. 198, pl. V, fig. 74a-b = Parabathylaimus profundus (Filipjev) 1925.
15. Bathylaimus sabulicolus (Schulz) 1932, p. 364, fig. 17:
   syn. Cothonolaimus sabulicolus Schulz 1932.
   = Bathylaimus inermis (Ditløvsen) 1919.
16. Bathylaimus septentrionalis (Filipjev) 1925, p. 197, pl. V, fig. 73a-b:
   syn. Cothonolaimus septentrionalis Filipjev 1925.
   Cothonolaimus similis Allgén 1931.
17. Bathylaimus similis (Allgén) 1931, pp. 231-233, fig. 6a-c:
   syn. Cothonolaimus similis Allgén 1931.
   = Bathylaimus septentrionalis (Filipjev) 1925.
18. Bathylaimus stenolaimus Schuurmans Stekhoven & De Coninck 1933a, p. 4, pl. II, fig. 1-2.
19. Bathylaimus tenuis (Kreis) 1924, p. 7, pl. I, fig. 4a-b:
   syn. Cothonolaimus tenuis Kreis 1924.
   = Sphaerolaimus tenuis (Kreis) 1924.
KEY TO THE TRUE SPECIES OF THE GENUS BATHYLAIMUS

(Foregoing list, n° 1-3, 5, 7-10, 14 & 16.)

I. Tail greatly filiform:
   A. Tail gradually tapering:
      Bathylaimus filicaudatus (Schuermans Stekhoven & Adam).
   AA. Tail narrowing abruptly on 1/3 of its length:
      Bathylaimus cobbi Filipiev.

II. Tail much more clumsy, with blunt apex:
   a. Amphidial diameter 0,44 x corresponding body diameter:
      Bathylaimus paralongisetosus Schuermans Stekhoven & De Coninck.
   aa. Amphidial diameter 0,35 x corresponding body diameter:
      Bathylaimus macramphis Schuermans Stekhoven & De Coninck.
   aaa. Amphidial diameter 0,25 x corresponding body diameter or less:
      B. Lips with setiform papillae, 0,11-0,143 x length of the longer cephalic setae:
         Bathylaimus septentrionalis (Filipiev).
   BB. Lips with distinct setae:
      b. Amphids situated distinctly behind the buccal cavity:
         Bathylaimus stenolaimus Schuermans Stekhoven & De Coninck.
      bb. Amphids situated opposite to the posterior half of the first portion of
         the buccal cavity:
      c. Second portion of the buccal cavity without ? teeth:
         Bathylaimus australis Cobb.
      cc. Second portion of the buccal cavity with teeth:
         Bathylaimus assimilis De Man.
      bbb. Amphids situated opposite to the second portion of the buccal cavity or
         opposite to the limit between this portion and the esophagus:
      d. Tail of the male club-shaped; adults longer than 2 mm.:
         Bathylaimus inermis (Ditlevsen).
      dd. Tail of the male digitiform. Adults shorter than 1,5 mm.:
         Bathylaimus longisetosus (Allgén).

46. Bathylaimus assimilis De Man 1922.

Fig. 100-109.

REFERENCES:

De Man 1922c, pp. 119-120, pl. I, fig. 2-2e.

79♂♂, 168♀♀ and 25 juv. from 't Zwyn, between sand and organic detritus, 28.XII.1931;
NaCl : 21 °/oo, 62,4 % of the nema-population of this locality.

DIMENSIONS:

♂ L. : 2,115 mm.; α : 44,5; β : 5,23; γ : 17,8.

33,35  47,5  ?  405  ?  M  1995
28,5  42,75  47,75  42,75  2,155 mm.
Habitus: Body strong, almost cylindrical, inconspicuously tapering at both ends.

Cuticle smooth, with scanty, minute hairs.

Amphids spiral-shaped, and not circular like De Man depicted them (cf. his fig. 2, pl. V). Amphidial diameter in a male 7.5µ or 2.9 x corresponding body diameter; opposite to the posterior half of the first portion of the buccal cavity.

Head rounded, with 3 voluminous lips, each with 2 labial setae, 6µ long in the male, 4.8µ long in the female; a crown of 10 cephalic setae in both sexes; the 6 longer ones reach 23.3µ or 0.81 x corresponding cephalic diameter in the male, 20.2µ or 0.9 x corresponding cephalic diameter in the female; the shorter submedian setae are respectively 10µ and 7.7µ long.

Buccal cavity subdivided, spacious, more or less 50µ long; first division wide, toothless, second division much smaller, 0.4 x the width of the first division, with a least 2 subequal teeth (De Man depicts 2 pairs of 2 teeth each).

Oesophagus cylindrical. Nervering on 1/3 of the oesophageal length.

Length of portion I = \( \frac{2.6 - 4}{1} \)

Female genital tract paired, symmetrical, ovaries reflexed.

Testis very long, showing the same regular division as depicted by Cobb. Spicula strong, 45µ long = 1.1 anal diameter, swollen at their proximal end, pointed at their distal end, with longitudinal median strengthenings. Gubernaculum very intricate, showing striking resemblances with that of Cyatholaimus and Paracanthionchus, consisting of 2 large, median, soldered pieces, bearing at their distal end a lateral expansion with 2 teeth pointing in ventral direction.

Tail elongate, conical, with bluntly rounded apex. Male tail 3.5 anal diameters long; width at the end 0.33 x anal diameter. Female tail of almost the same shape, last 1/3 cylindrical, not swollen at the end; length : 3.9 anal
Bathylaimus assimilis De Man.

100. General view of a male.
102. Head end of a male.
103. Head end of a young female.
104. Genital apparatus of a young female.
105. Spicular apparatus of a male in ventral view.
106. Id. in lateral view.
107. Id. in dorsal view.
108. Spicular apparatus and tail of a male.
109. Tail of a female.
diameters; width at the end: 0.33 anal diameters. The male tail possesses 2 subventral rows of setae and a group of subdorsal setae along the apical third. Spinneret glands present.

Geographical distribution: North Sea.

47. Bathylaimus macramphis Schuurmans Stekhoven & De Coninck 1933.

References:
Schuurmans Stekhoven & De Coninck 1933a, pp. 1-2, pl. I, fig. 1-3.
3♂️♀️ from Heyst-Zeebrugge, 2.IX.1931.


References:
Schuurmans Stekhoven & De Coninck 1933a, pp. 2-3, pl. Ibis, fig. 4-6.
1♂️ from a puddle on the strand at Oostende, 18.XI.1931; NaCl: 29.3 %.

49. Bathylaimus stenolaimus Schuurmans Stekhoven & De Coninck 1933.

References:
Schuurmans Stekhoven & De Coninck 1933a, p. 4, pl. II, fig. 1-2.
1♂️ from a puddle on the strand at Oostende, 18-XI-1931; NaCl: 29.3 %.

Genus PARABATHYLAIMUS nov. gen.
Syn.: Bathylaimus Cobb 1894 ex parte.

On page 115 we have pointed to the fact that the former genus Bathylaimus ought to be subdivided into the genera Bathylaimus Cobb and Parabathylaimus De Coninck & Schuurmans Stekhoven.

The genus Parabathylaimus is characterised especially by its simple, undivided, unarmed buccal cavity. As to all other features it agrees with Bathylaimus.

To Parabathylaimus the following species belong:

1. Parabathylaimus denticaudatus (Allgén) 1930, p. 60, fig. 3a-b:
syn. Bathylaimus denticaudatus Allgén 1930.
    = Parabathylaimus ponticus (Filipjev) 1922.
2. Parabathylaimus ponticus (Filipjev) 1922a, p. 107, pl. I, fig. 6a-b:
syn. Bathylaimus ponticus Filipjev 1922.
    Bathylaimus denticaudatus Allgén 1930.
3. Parabathylaimus profundus (Filipjev) 1925, p. 198, pl. V, fig. 7a-b:
syn. Bathylaimus profundus Filipjev 1925.
THE FREELIVING MARINE NEMAS OF THE BELGIAN COAST. II

Genus TRIPYLOIDES De Man 1886.

Syn. : Tripyla Buetschli 1874 nec Bastian 1865.
Cothonolaimus Ditlevsen 1919 ex parte.

Tripyloides De Man embraces the following species:

1. Tripyloides gracilis (Ditlevsen) 1919, p. 190, pl. IX, fig. 3; pl. X, fig. 4:
syn. Cothonolaimus gracilis Ditlevsen 1919.
Tripyloides septentrionalis De Coninck & Schuurmans Stekhoven nom. nov.

2. Tripyloides marinus (Buetschli) 1874, p. 33, pl. III, fig. 12a-d:
syn. Tripyla marina Buetschli 1874.
Tripyloides vulgaris De Man 1886.

3. Tripyloides omblaica Micolétsky 1923b, p. 257.

4. Tripyloides septentrionalis nom. nov.:
syn. Tripyloides marinus De Man 1922b, p. 229, fig. 18.
Cothonolaimus gracilis Ditlevsen 1919.

5. Tripyloides vulgaris De Man 1886, pp. 61-66, pl. XI, fig. 1-11 = Tripyloides marinus (Buetschli) 1874.

DOUBTFUL SPECIES

6. Tripyloides demani Filipjev 1918, p. 181, pl. VI, fig. 35.

KEY TO THE TRUE SPECIES

I. Amphids 0,5 x corresponding body diameter:

Tripyloides omblaica Micolétsky.

II. Amphids 0,33 x corresponding body diameter, or less:

A. Apart from the vestibulum 4 divisions of the buccal cavity, the most caudal one with distinct teeth:

Tripyloides marinus (Buetschli).

AA. Buccal cavity with 3 indistinct divisions, the most caudal one without distinct teeth:

Tripyloides septentrionalis De Coninck & Schuurmans Stekhoven.

50. Tripyloides marinus (Buetschli) 1874.

Fig. 110-112.

Syn. : Tripyla marina Buetschli 1874.
Tripyloides vulgaris De Man 1886.

References :
Buetschli 1874, p. 33, pl. III, fig. 12a-d, Tripyla marina.
De Man 1886, p. 61, pl. XI, fig. 1-11, Tripyloides vulgaris.
Ssaveljev 1912, p. 119, Tripyloides vulgaris.
? Schneider, G. 1926b, p. 12, Tripyloides marinus.
3 ♂♂, 1 ♀ and 2 Juv. on a break-water, Oostende, 18.XI.1931; NaCl : 30,77 °/oo.
Tripyloides marinus (Buetschi).

110. Head end of a male.
111. Spiculal apparatus of a male.
112. Tail of a female.

Tripyloides septentrionalis De Coninck & Schuurmans Stekhooven.

113. Head end of a female.
114. Spicuilar apparatus and tail of a male.
115. Tail of a female.
THE FREELIVING MARINE NEMAS OF THE BELGIAN COAST. II

Dimensions: \( Q^\prime \): L. : 2,380 mm.; \( \alpha \) : 45; \( \beta \) : 7,7; \( \gamma \) : 19.
\( Q \): L. : 1,945 mm.; \( \alpha \) : 33,75; \( \beta \) : 7,71; \( \gamma \) : 18,6; V.: 53,3 %.

We will give only some additional notes.

Amphids: a twice looped spiral, \( 0,2 \times \) corresponding body diameter, on \( 1,3 \times \) cephalic diameter, behind the buccal cavity.

Head rounded, with a crown of 6 labial papillae and 10 stout cephalic setae, the longer ones being \( 0,6 \times \) cephalic diameter long, the shorter submedian ones \( 0,35 \times \) cephalic diameter.

Buccal cavity: 1 \( \times \) cephalic diameter deep, with strongly cuticularised walls, divided by distinct transversal strengthenings into 4 successive portions; the last of these possesses 2 distinct subventral teeth.

Male genital armature. Spicula rather short and strong, only slightly curved, distally pointed, proximally with an inconspicuous swelling, strengthened by longitudinal cuticularisations. Their length equals that of the gubernaculum and reaches \( 0,8 \times \) anal diameter. Gubernaculum typical with a large median piece, bearing lateral expansions at its distal end. Here one finds a strong prong that points to the ventral side.

Tail: almost of equal size in both sexes. Basal 2/3 conical, apical 1/3 cylindrical. In a female it is \( 2,8 \times \) anal diameters long; the width at the apex \( 0,275 \times \) anal diameter.

Geographical distribution: North Sea and Baltic.

Remarks. — A conscientious comparison of the data of Buetschli and De Man brought us to the conviction that \( T r. \) marinus (Buetschli) and \( T r. \) vulgaris De Man are synonymous, whilst \( T r. \) marinus De Man is not identical with \( T r. \) marinus (Buetschli). Therefore we brought \( T r. \) vulgaris De Man to \( T r. \) marinus Buetschli, and we propose to name \( T r. \) marinus De Man: \( T r. \) pyloides septentrionalis nom. nov.

51. Tripyloides septentrionalis nom. nov.

Fig. 113-115.

Syn.: \( T r. \) pyloides marinus De Man 1922 nec Buetschli.
\( C o t h o n o l a i m u s \) gracilis Ditlevsen 1919.

References:
ALLÉN 1927a, p. 52, \( T r. \) marinus.
ALLÉN 1929c, p. 14, \( T r. \) marinus.
ALLÉN 1931, p. 230, \( C o t h . \) gracilis.
DITLEVSEN 1919, p. 190, pl. IX, fig. 3; pl. X, fig. 4, \( C o t h . \) gracilis.
FILIPJEV 1930, p. 9, \( T r. \) marinus.
DE MAN 1922a, p. 229, fig. 18, \( T r. \) marinus.
SCHNEIDER, G. 1906, p. 14, pl. I, fig. 8, \( T r. \) marinus.
SCHUURMANS STEKHOVEN, 1931, p. 618, \( T r. \) marinus.
SCHUURMANS STEKHOVEN & ADAM 1931, p. 26, ?\( T r. \) marinus.
124  L. A. DE CONINCK & J. H. SCHUURMANS STEKHOVEN

1 ♀ and 2 juv. from 't Zwyn, on Enteromorpha between poles, 28.XII.1931; NaCl : 27,2 %.
4 ♂♂, 4 ♀ ♀ and 3 juv. from 't Zwyn, sand and organic detritus, 28.XII.1931; NaCl : 21 %.

Dimensions:

<table>
<thead>
<tr>
<th>♂ L.</th>
<th>α</th>
<th>β</th>
<th>γ</th>
<th>V.</th>
<th>M</th>
<th>1,510 mm.</th>
</tr>
</thead>
<tbody>
<tr>
<td>28,8</td>
<td>48</td>
<td>62,5</td>
<td>43</td>
<td>720</td>
<td>1,510 mm.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>♀ L.</th>
<th>α</th>
<th>β</th>
<th>γ</th>
<th>V.</th>
<th>M</th>
<th>1,310 mm.</th>
</tr>
</thead>
<tbody>
<tr>
<td>14,4</td>
<td>34</td>
<td>720</td>
<td>55</td>
<td>1,310 mm.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Cuticle with punctation of the inner layers like in Ascolaimus and Odontophora.

Amphids in a female 0,166 × corresponding body diameter, on 1,7 × cephalic diameter from the anterior end, 1 ½ windings; in a male 0,2 × corresponding body diameter on 1 × cephalic diameter from the anterior end.

Head, with 10 cephalic setae, the longer ones 0,33 × cephalic diameter in a male, 0,5 × cephalic diameter in a female.

Buccal cavity 1,1 × cephalic diameter long, with 3 divisions, with a small tooth in the anterior portion, and possibly also in both following divisions.

Nerveing on 55 % of the oesophageal length.

Male genital armature. Spicula more feeble than in Tripyloides marinus (Buetschli), 1 anal diameter long, longer than the gubernaculum which is typical in shape and structure.

Tail in the male 3,3 anal diameters long, the width on the end 0,26 × anal diameter. In the female 4,4 anal diameters long, the width at the end 0,31 × anal diameter.

The tail is distinctly more slender than in Tripyloides marinus (Buetschli). Its last 1/3 is cylindrical like in the latter species, but its apex is more or less swollen and bears a couple of short bristles.

Geographical distribution: North Sea and Baltic.

Order IV: Monhysteroidea

To this order, representants of the following families belong:

1. Monhysteridae = Monhysterinae.
2. Sphaerolaimidae = Sphaerolaiminae.
3. Siphonolaimidae = Siphonolaiminae.
We exclude from this order the:

1. *Comesomidae* = *Comesominae*, which are brought to the Chromadoroidea.

2. *Axonolaimidae* = *Axonolaiminae*, which are shifted to a new order, the Araeolaimoidea.

3. *Diplopetidae* = *Diplopetinae*, which are shifted to the same order as the Axonolaimidae.

Along the Belgian Coast, representatives of the first 2 families occur.

**I. Family Monhysteridae.**

*Genus Theristus* Bastian 1865.

*Syn.*: *Monhystera* Bastian pro parte.

8 species of the Genus Theristus were found in the present material. They may be identified by means of the following Key.

**KEY**

I. Head bluntly conical, sharply set off from the remainder of the body. Lips indistinct, more or less fused. Cephalic setae 0,5 × cephalic diameter:

*Theristus tenuispiculum* (Ditlevensen).

II. Head with distinct lips, obtusely rounded, more or less continuous with the remainder of the body. Cephalic setae much longer:

A. Postamphidial cervical setae twice as long as the body diameter; tail elongate conical with blunt apex:

*Theristus parasetosus* (Allén).

AA. Postamphidial cervical setae shorter than 1,5 × body diameter, tail more attenuated:

a. Spicula forked at the distal end:

B. Gubernaculum with a large dorsal apophysis. Numerous ± 1 body diameter long setae all over the body:

*Theristus setosus* (Bütschli).

BB. Gubernaculum wanting. Body setae 0,5 × body diameter:

*Theristus acrilabiatus* n. sp.

aa. Spicula pointed at the distal end:

b. Amphids more than 2,5 cephalic diameters from the anterior end; body with numerous, 1 body diameter long, tender setae:

*Theristus longisetosus* Schuurmans Stekhoven & de Coninck.

bb. Amphids at about 1 cephalic diameter from the anterior end:

a. Spicula distinctly knobbed at the proximal end; gubernaculum with a small dorsal apophysis:

*Theristus normandicus* (de Man).
cc. Spicula not knobbed at the proximal end:

d. Tail elongate conical, gradually tapering till to the end. Gubernaculums with a large plate-like dorsal apophysis: Theristus acer Bastian.

dd. Tail with a distal cylindrical portion. Gubernaculum calceolate, without a dorsal apophysis: Theristus calceolatus n. sp.

52. Theristus setosus (Buetschli) 1874.

Fig. 116-120.

Syn. Monhystera setosa Buetschli 1874.

References:

Allgén 1927a, p. 56.
Annen 1926c, p. 27.
Annen 1926a, p. 41.
Buetschli 1874, p. 29, pl. II, fig. 11a; pl. III, fig. 11b.
Filipjev 1930, p. 44, fig. 31a-c.
Filipjev 1930, p. 46, fig. 32a-b, var. izardica.
Micoletzky 1925, p. 230.
Schneider, G. 1906, p. 11, pl. I, fig. 3a-c.
Schneider, G. 1920, p. 33.
Schneider, G. 1927, p. 23.
Schneider, W. 1924, p. 210, fig. 1b-c, 2a-b.
Skwara 1922, p. 111.

3 ♂♂ and 3 ♀♀ from Heyst-Zeebrugge, 2.IX.1931.
1 ♂ from 't Zwyn, on Enteromorpha between poles, 28.XII.1931; NaCl : 27.2 b/o.
1 ♂ from Oostende, on a break-water, 18.XI.1931; NaCl : 30.77 b/o.
1 ♀ from Oostende, on a break-water, harbour entrance, IX.1931; De Saebeelere.

♀♀. L. : 1,570 mm.; α : 22; β : 4.1; γ : 6; V. : 66.6 %.

Body clumsy, confer fig. 116.

Cuticle transversely striated, covered with many setae of variable length, the longer ones reaching a length of 1 body diameter. In the male they may depass this dimension a little.

Lateral fields very narrow, 1/20 x corresponding body diameter.

Amphids in the male 0.23 x corresponding body diameter, situated on 0.7 x cephalic diameter from the anterior end. In the female they are 0.15 x corresponding body diameter and situated on 0.9 x cephalic diameter from the anterior end.

Head with 6 broad lips, crowned each by a minute labial papilla. Male with 12, female with 10 cephalic setae. Those of the male 0.5 x those of the female 0.6 x cephalic diameter long.

The shorter hairs reach a length of 0.33 x cephalic diameter in both sexes.
**Theristus setosus** (Buetschli).

117. Head end of a female.

**Theristus parasetosus** Allgén.

118. Spicular apparatus and tail of a male.
119. Spicular apparatus of a male.
121. Head end of a female.
Buccal cavity typical. Vestibulum characterised by irregular cuticularised reinforcements.

Nerve ring at 45% of the oesophageal length.

Male genital armature. Spicula curved; chord 1 anal diameter long; knobbed at the proximal end, swollen near the middle and forked at the distal end. Gubernaculum, chord 0.75 anal diameter long, with a long dorsal apophysis. The shape as well as the size of the accessory pieces vary in relation with the angle under which they are observed. Confer fig. 118 and 119. This misled apparently Filipjev and induced him to make a new variety of this species: var. izhoricus, for a specimen in which the gubernaculum was observed under such an angle that it showed a very long dorsal apophysis.

Tail in the male 4.3 anal diameters long; width at the end 0.2 anal diameter. In the female the respective relations are 5.6 x and 0.2 x anal diameter. The male tail presents some long and many short bristles placed in subventral and subdorsal rows. Apical end with 2 long setae, being 4 times as long as the body width at the tail end.

Geographical distribution: Channel, North Sea, Baltic.

53. Theristus parasetosus (Allgén) 1928.

Fig. 121-122.

Syn.: Monohystera parasetosa Allgén 1928.

References:
Allgén 1928c, p. 300.
Allgén 1929a, p. 41.
1♀ from Heyst-Zeebrugge, littoral, 2.IX.1931.

Dimensions: ♀. L.: 1.312 mm.; α: 28.1; β: 4.32; γ: 8.26; V.: 70%.

Habitus admost cylindrical; width at the anterior end 0.7, at the beginning of the intestine 0.8, at the anal opening 0.9 x maximal width.

Cuticula transversely ringed, with many long setae towards the anterior end, twice as long as the corresponding body-diameter.

Amphids circular, 0.3 x corresponding body diameter, at 1 cephalic diameter from the anterior end.

Head obtusely rounded, with 6 small distinct lips and high, conspicuous labial papillae; 10 cephalic setae, the 6 longer ones 0.9, the 4 shorter, submedian ones 0.6 x cephalic diameter.

Buccal cavity with strong cuticularised walls.

Female genital tract single, praevulvar. Vulva with small vulvar glands.

Tail conical, with obtusely rounded tip, 4.3 anal diameters long and 0.33 anal diameter wide at the tip.

Geographical distribution: North Sea and Baltic.
**Theristus setosus (Buetschli).**
120. Tail of a female.

**Theristus parasetosus Allgén.**
122. Tail of a female.

**Theristus acrilabiatus De Coninck & Schuurmans Stekhoven**
123. General view of a female.
124. Head end of a female.
125. Spicular apparatus of a male.
126. Tip of tail of a male.
Remarks. — Our specimen differs from that of Allgén, who gives no figures, by its smaller size and by its comparatively larger amphids. Nevertheless we think that our specimen is conspecific with Allgén’s form. *Theristus parasites* Allgén may be distinguished from *Theristus setosus* (Buetschli) by the stronger cuticularisation of the buccal walls, by the more distinct and longer cephalic setae and labial papillae, by the much longer setae on the body surface and by the conical tail.

54. *Theristus acrilabiatus* nov. spec.

Fig. 123-126.

1 ♂, 2 ♀ and 2 juv. from ’t Zwyn, sand and organic detritus, 28.XII.1931; NaCl : 21 %.

**Dimensions:**

<table>
<thead>
<tr>
<th>♂</th>
<th>L. : 1,785 mm.; a : 47,6; β : 6,8; γ : 10,2.</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>260</td>
</tr>
<tr>
<td>♂</td>
<td>L. : 1,270 mm.; a : 33,4; β : 5,03; γ : 7,21; V. : 64,7 %.</td>
</tr>
<tr>
<td>♀</td>
<td>L. : 1,400 mm.; a : 29 ; β : 4,5 ; γ : 6 ; V. : 65,3 %.</td>
</tr>
<tr>
<td>138</td>
<td>310</td>
</tr>
</tbody>
</table>

**Habitus:** Body slender, not much narrowed anteriorly. Width at the anterior end 0,5, at the nervering 0,71, at the anal opening 0,71 x maximal width.

**Cuticula** transversely striated, bearing comparatively long setae, placed in submedian rows.

**Amphids** in the female 0,20 x corresponding body diameter, at 1,45 x cephalic diameter from the anterior end, with a median elevation.

**Head** obtusely rounded, with 6 very distinct lips, separated by deep interlabial rims, each with a spiniform labial papilla; 12 cephalic hairs, the larger ones 0,9 x the shorter ones 0,66 x cephalic diameter.

**Oesophagus** cylindrical; nervering at 45 %. Neither ventral gland nor excretory pore observed.

**Female genital tract** preavulvar, unpaired, reaching almost to the base of the oesophagus (25 % of the body length).

**Testis** beginning at 1/3 of the body length. ♂ genital armature composed of 2 curved spicula, knobbed at the proximal end, forked at their distal end, more or less 1 anal diameter long. No gubernaculum could be observed.

**Tail** gun-shaped in the female; base cylindro-conical, suddenly attenuated at the end of the first 1/3; last half cylindrical, not swollen at the apex; 6 anal
diameters long; width at the apex 0.22 \times \text{anal diameter}. Male tail similar, with 2 long setae at the end, which are 2.6 \times \text{as long as the width at tip of tail. Some short hairs along the subventral lines.}

55. *Theristus normandicus* De Man 1890.

**Figures 127-129.**

**References:**

- Allégén 1929c, p. 28.
- Allégén 1931, p. 247.
- De Man 1890, p. 169, pl. II, fig. 1-1d.
- 1 juv. ♀ on a break-water Knokke-Zoute, 28.XII.1931; NaCl : 31.6 °/oo.
- 3 ♂♂ from Heyst-Zeebrugge, 2.IX.1931.
- 1 ♀ on a break-water at Oostende, 31.XII.1931.

**Dimensions:**

<table>
<thead>
<tr>
<th>♂♂ L.</th>
<th>0.970 mm;</th>
<th>α : 26.2;</th>
<th>β : 5.1;</th>
<th>γ : 6.06.</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>?</td>
<td>? 190</td>
<td>? M 810</td>
<td>0.970 mm.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>♂♂ L.</th>
<th>1.340 mm;</th>
<th>α : 37.2;</th>
<th>β : 6.53;</th>
<th>γ : 8.2.</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>144</td>
<td>205</td>
<td>240</td>
<td>1177</td>
</tr>
<tr>
<td>14.4</td>
<td>32.4</td>
<td>36</td>
<td>29</td>
<td>6.4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>♀ L.</th>
<th>1.080 mm;</th>
<th>α : 28.1;</th>
<th>β : 5;</th>
<th>γ : 6.75; V. : 58 %.</th>
</tr>
</thead>
<tbody>
<tr>
<td>19.2</td>
<td>120</td>
<td>216</td>
<td>232</td>
<td>929</td>
</tr>
<tr>
<td>20.8</td>
<td>35.2</td>
<td>38.4</td>
<td>27.2</td>
<td>6</td>
</tr>
</tbody>
</table>

Body slender; width at the anterior end in the male 0.4 \times \text{at the anal opening} 0.8 \times \text{maximal width}, in the female respectively 0.54 \times \text{and} 0.7 \times \text{maximal width.}

Cuticle transversely striated, bearing rather numerous hairs in submedian longitudinal rows. In the female these are comparatively short, whereas they are conspicuously longer in the male and reach their maximal length on the level of the amphids where they measure 1.4 \times \text{corresponding body diameter. Corresponding hairs on the female :} 0.5 \times \text{corresponding body diameter. A male presented a square refringent body a little caudad from the amphids (ocellus?).}

Amphids circular, sometimes with a distinct median elevation, distinctly larger in the male than in the female. In the male their diameter is 0.35 \times \text{corresponding body diameter, and they are situated at 0.9 \times cephalic diameter from the anterior end. In the female the diameter reaches 0.31 \times \text{corresponding body diameter and the distance from the anterior end is} 0.8 \times \text{cephalic diameter.}
Head rounded, with 6 spherical lips, beset with distinct labial papillae; 12 cephalic setae; in the male the longer measure $0.7 \times$, the shorter ones $0.45 \times$ cephalic diameter, whereas the respective relations in the female are $1 \times$ and $0.68 \times$ cephalic diameter.

*Theristus normandicus* (De Man).

127. Head end of a male.
128. Spicicular apparatus of a male.
129. Spicicular apparatus and tail of a male.

*Theristus acer* Bastian.

130. General view of a female.
131. Spicicular apparatus of a male.
THE FREELIVING MARINE NEMAS OF THE BELGIAN COAST. II

Buccal cavity typical. Œsophagus slightly broadening towards the base. Nercreing at 55% of the œsophageal length.

Female genital tract unpaired, prevulvar, reaching almost to the base of the œsophagus. The same may be said of the male testis.

Male genital armature composed of 2 curved spicula, conspicuously swollen at the proximal end and pointed at the distal end. Chord or spiculum 1,1 x anal diameter long. Gubernaculum 0,8 x anal diameter, surrounding the spicula like a ruffle, and bearing a small, blunt, dorsal apophysis.

Tail in the male gradually tapering, last 1/3 cylindrical, 6 anal diameters long, 0,23 x anal diameter wide at the apex, with subventral rows of conspicuously long setae, those at the tip 4,6 x the width at tip of tail. Female tail identical in shape, but without the conspicuously long setae. Some short bristles are found at the tip; the relations are : length 7,2 x , width at the end 0,25 x anal diameter.

Geographical distribution: Atlantic, Channel and North Sea.

56. Theristus acer Bastian 1865.

Fig. 130-131.

Syn. • Theristus velox Schuurmans Stekhoven & Adam nec Bastian.

Theristus velox Steiner 1916 nec Bastian.

References:

Allgén 1927a, p. 56.
Allgén 1928a, p. 291.
Allgén 1929c, p. 28.
Allgén 1929a, p. 41.
Allgén 1931, p. 246.
Bastian 1865, p. 156, pl. XIII, fig. 187-188.
De Man 1889b, p. 1, pl. V, fig. 1-14.

1 ♂ from Heyst-Zeebrugge, littoral, 2.IX.1931.
9 ♂♂, 28 ♀♀ and 23 juv. on a break-water at Oostende, IX.1931, De SaeDeekler; 14% of the nemic fauna at this locality.
29 ♂♂, 48 ♀♀ and 83 juv. on a break-water at Oostende, 18.XI.1931; NaCl : 30,77 %; 43% of the nemic fauna at this locality.
2 ♂♂ and 4 ♀♀ from Oostende, littoral, 18.XI.1931; NaCl : 29,3 %.
2 ♀♀ and 1 juv. on a break-water at Knokke-Zoute, 28.XII.1931; NaCl : 31,6 %.
9 ♂♂, 11 ♀♀ and 26 juv. in sand and organic detritus from 't Zwyn, 28.XII.1931; NaCl : 21 %; 7,7% of the nemic fauna at this locality.
Diemens: ♂ L.: 1,370 mm.; $z$: 34.5; $\beta$: 5.06; $\gamma$: 8.4.
♀ L.: 1,320 mm.; $z$: 26.1; $\beta$: 5.22; $\gamma$: 7.8; V.: 64.5 %.
♀ L.: 1,680 mm.; $z$: 26.7; $\beta$: 5.35; $\gamma$: 8.9; V.: 68.2 %.
♀ L.: 1,500 mm.; $z$: 36; $\beta$: 6.66; $\gamma$: 7.5; V.: 64 %.

For habitus confer fig. 130.

The spicula are strongly curved, not knobbed at the proximal end, but here they present at the ventral side a little notch; distal end pointed. Gubernaculum embracing the spicula like a ruffle, presenting a large dorsal plate-like apophysis.

Remarks. — The figures of Theristus acer and Theristus velox given by Schuurmans Stekhoven & Adam are, according to our present experience, not quite correct. So for instance is the proximal portion of the spicula of Th. acer (pl. X, fig. 1) depicted too short, whereas the gubernaculum in pl. X, fig. 5 is somewhat distorted. We believe therefore that both mentioned species in reality are conspecific and ought to be brought to Theristus acer Bastian.

Geographical distribution: Atlantic, Channel, North Sea and Baltic.

57. Theristus calceolatus nov. spec.

Fig. 132-136.

2 ♂♂, 3 ♀♀ and 5 juv. on a break-water at Oostende, 18.XI.1931; NaCl: 30.77 %.
203 ♂♂, 310 ♀♀ and 236 juv. from Heyst-Zeebrugge, littoral, 2.IX.1931; 79 % of the nemic fauna at this locality.
1 ♂ and 3 juv. from Knokke-Zoute, on stones along the littoral, 28.XII.1931; NaCl: 31.6 %.

Dimensions:

| ♂ L.: 1,215 mm.; $z$: 44.1; $\beta$: 4.48; $\gamma$: 7.9. |
|---|---|---|---|
| 22 | 211 | 332 | M 1060 | 1,215 mm. |
| 20 | 27.5 | 27.5 | 20 | 7.3 |

| ♂ L.: 1,267 mm.; $z$: 44; $\beta$: 4.71; $\gamma$: 8. |
|---|---|---|---|
| ? | 145 | 270 | M 1108 |
| 16.8 | 24 | 26.4 | 28.8 | 19.2 | 7.2 |
| ♂ L.: 1,270 mm.; $z$: 44.5; $\beta$: 4.85; $\gamma$: 8.3. |
|---|---|---|---|
| ? | 145 | 264 | M 1128 |
| 16.8 | 26.4 | 26.4 | 28.8 | 19.2 | 6.25 |
| ♂ L.: 1,228 mm.; $z$: 51.2; $\beta$: 4.65; $\gamma$: 7.3. |
|♀ L.: 1,495 mm.; $z$: 29.9; $\beta$: 4.04; $\gamma$: 7.47; V.: 72.9 %. |
| 27 | 370 | ? | M 1090 | 1,495 mm. |
| 20.8 | 43.2 | 50.4 | 32.4 | 10.8 | 1,495 mm. |
THE FREELIVING MARINE NEMAS OF THE BELGIAN COAST. II

♀ L. : 1,548 mm.; \( \alpha : 30,96; \beta : 4,39; \gamma : 7,54; \) V. : 70,9 %.

<table>
<thead>
<tr>
<th>27</th>
<th>144</th>
<th>377</th>
<th>432</th>
<th>1098</th>
<th>1343</th>
</tr>
</thead>
<tbody>
<tr>
<td>28,8</td>
<td>46,8</td>
<td>50,4</td>
<td>32,4</td>
<td>10,8</td>
<td>1,548 mm.</td>
</tr>
</tbody>
</table>

♀ L. : 1,566 mm.; \( \alpha : 29; \beta : 4,19; \gamma : 7,67; \) V. : 72,09 %.

<table>
<thead>
<tr>
<th>27</th>
<th>?</th>
<th>373</th>
<th>418</th>
<th>1130</th>
<th>1362</th>
</tr>
</thead>
<tbody>
<tr>
<td>28,8</td>
<td>43,2</td>
<td>54</td>
<td>32,4</td>
<td>10,8</td>
<td>1,566 mm.</td>
</tr>
</tbody>
</table>

*Theristus calceolatus* De Caneck & Schuurmans Stekhoven.

132. Head end of a male.
133. Head end of a female.
134. Spicular apparatus of a male.
135. Spicular apparatus and tail of a male.
136. Tail of a female.

*Habitus*: Body much more slender in the male than in the female. In the male not much, in the female comparatively much narrowed anteriorly, 0,6 × maximal width on the level of the amphids. This depends upon the filling of the ovaries and the swelling of the uterus.
Cuticle distinctly ringed; rings in the male $1.77\mu$ apart in the middle of the body. Comparatively short and scanty hairs are irregularly scattered over the body surface.

Amphids in the male $0.29 \times$ corresponding body diameter, in the female $0.20 \times$ corresponding body diameter. In the male it is situated on $1 \times$, in the female on $0.9 \times$ cephalic diameter from the anterior end.

Head rounded with 6 large lips, each with a conical papilla; 12 cephalic setae, the larger ones in the male $20\mu$, or $1.2 \times$, in the female $1 \times$ cephalic diameter, the shorter ones in both sexes $2/3$ of the longer ones.

Buccal cavity typical, with an annular reinforcement at the limit of the vestibulum and the oesophagus.

Oesophagus with nervering on about $40\%$ of the length.

Neither ventral gland nor excretory pore were seen.

Female genital tract unpaired, almost reaching the base of the oesophagus. The same fits for the testis.

Male genital armature: 2 slender, curved spicula, much resembling those of Theristus acer, but missing the proximal notch. Chord of spiculum $19-22\mu$ or $1$ anal diameter long. Gubernaculum calceolate, baboosh-shaped, $0.6-0.7$ anal diameters long or $14.4\mu$. In the neighbourhood of the cloacal opening a few large bristles are found, next to $4$ minute postcloacal setiform papilae.

Tail of the male elongate cylindrical, $7.2-8 \times$ anal diameters long; width at the end $0.32-0.36 \times$ anal diameter. Female tail $6.2-6.3 \times$, width at the end $0.33 \times$ anal diameter.

The apical setae in the male tail measure $18-20\mu = 1$ anal diameter; in the female the same setae are $25\mu$ long.

58. Theristus longisetosus Schuurmans Stekhoven & De Coninck 1933.

References:

Schuurmans Stekhoven & De Coninck 1933a, p. 12, pl. VI, fig. 1-5.

Apart from the habitat mentioned in the above-named paper this species was also found in 't Zwyn, on Enteromorpha between poles (1 $\sigma$ and 1 $\varphi$), 28.XII.1931; NaCl: $27.2\%$.

For description, consult the cited literature.

Unpublished figures found in the bequest of the late helminthologist Dr. J. G. De Man prove that he also has seen this species at Veere. His figures show the typical sudden attenuation of the body at about the level of the excretory pore; this attenuation is a feature more especially characteristic for the male sex.
59. Theristus tenuispiculum (Ditlevsen) 1919.

Syn. : Monhystera tenuispiculum Ditlevsen 1919.

Monhystera demani Schuurmans Sterkhooven 1931 nec De Rouville 1904.

Fig. 137-140.

References:
Allgen 1928c, p. 300.
Allgen 1929a, p. 42.
Allgen 1932c, p. 423.
Ditlevsen 1919, p. 150, pl. I, fig. 3, 6, 10.
Schuurmans Sterkhooven 1931, p. 654.

5 ♂♂, 2 ♀♀ and 1 juv. from Heyst-Zeebrugge, 2.IX.1931.
1 ♂, 2 ♀♀ and 1 juv. from 't Zwyn, on Enteromorpha between poles, 28.XII.1931; NaCl : 27,2 °/oo.

♀. L. : 0,950 mm.; α : 22 ; β : 4,7 ; γ : 6,38; V : 66,6 %.

Habitus rather clumsy, distinctly narrowed at the extreme anterior end, where it measures 0,45 x the width at the base of the oesophagus.

Cuticle coarsely striated transversely, almost devoid of setae.

Lateral fields wide.

Amphids : In the male 0,23 x corresponding body diameter on 1,2 × cephalic diameter from the anterior end; in the female 0,25 × corresponding body diameter from the anterior end.

Head bluntly conical, distinctly set off from the remainder of the body, with 6 inconspicuous lips and as many minute labial papillae. Cephalic setae small, in both sexes 0,5 × cephalic diameter (at the base of the lips).

Buccal cavity funnel-shaped, with tender linings in the upper portion of the vestibulum.

Oesophagus almost cylindrical. Nervering on 0,5 × oesophageal length in the male, on 0,43 × the same length in the female.

Neither ventral gland nor pore observed.

Female genital tract unilateral, prevulvar, outstretched, with a postvulvar receptaculum seminis.

Male genital armature. Spicula slender, curved, distinctly winged at the proximal end; distal end pointed; more or less 1,15 × anal diameter long, 16 times as long as they are wide. Accessory pieces gutter-shaped, forming 2 grooves in which the spicula slide, rounded at the distal end, 0,66 anal diameter long.

Tail in the male sex 4,14 ×, in the female 6,1 × anal diameters long; width at the apex 0,2 × anal diameter.

Geographical distribution : North Sea and Baltic.
Remarks. — Ditlevsen’s male measured 1.3 mm., was therefore somewhat larger than our specimens. The general shape of the spicula is in accordance with our findings, however Ditlevsen did not distinguish clearly spicula and accessory pieces, thus giving an incorrect impression of the relations at the distal end of the spicula. A comparison of our specimens with new Zuiderzee-material
prooved the synonymity of Schuurmans Stekhoven's *M. demani* with *Theristus tenuispiculum* Ditlevsen.

*Monhystera* spec. 8 De Man 1922, which Schuurmans Stekhoven thought to be conspecific with his *M. demani*, is very closely allied with our form but may be distinguished from it by the larger size of its amphids.

**Genus STEINERIA** Micoletzky 1921.

**Syn.:** *Monhystera* Bastian 1865 ex parte.

**60. Steineria mirabilis** Schuurmans Stekhoven & De Coninck 1933.

**References**:
Schuurmans Stekhoven & De Coninck 1933a, p. 9, pl. IV, fig. 5; pl. V, fig. 1-3.

*Habitat:* coarse sand of the littoral, Oostende, 18.XI.1931; NaCl: 29,3 °/oo.

**Genus MONHYSTERA** Bastian 1865.

**Syn.:** *Tachyhodites* Bastian 1865 ex parte.

Three *Monhystera*-species were found in the present material:

1. *Monhystera microphthalma* De Man.
2. *Monhystera disjuncta* Bastian.

**61. Monhystera microphthalma** De Man 1884.

*Fig. 141-144.*

**References**:
De Coninck 1930, p. 114.
De Man 1884, p. 38, pl. II, fig. 8.
De Man 1922b, p. 218, fig. 3a-c.

11 ♂♂, 20 ♀♀ and 9 juv. on a break-water at Oostende, 18.XI.1931; NaCl: 30,77 °/oo.
1 ♀ from 't Zwyn, on *Enteromorpha* between poles, 28.XII.1931; NaCl: 27,2 °/oo.
1 ♂ from 't Zwyn, in sand and organic detritus, 28.XII.1931; NaCl: 21 °/oo.

**Dimensions**:

♂ L.: 0,856 mm.; a: 53,3; β: 6,69; γ: 3,82.
13,6 72 128 208 M 632 0,856 mm.
9,6 12,8 14,4 16 14,4

♀ L.: 0,580 mm.; a: 40,33; β: 6,36; γ: 3,18; V.: 48 %.
? 61 91,2 120 280 397 0,580 mm.
9,6 14,4 14,4 9,6
The species may be distinguished at once by its long, filiform tail and by its violet ocelli, very distinct in living specimens but inconspicuous in fixed material.

*Cuticle* smooth, bare.

*Amphids* circular, \(0.3 \times\) corresponding body diameter in the female on \(1.5 \times\) cephalic diameter from the anterior end. *Ocelli* immediately behind the amphids.

*Head* set off, with 6 lips and 6 small labial papillae; 6 cephalic setae, \(0.4 \times\) cephalic diameter long.

*Buccal cavity* typical.

*Oesophagus* distinctly swollen at the base. *Nerve ring* on 55-66 % of the oesophageal length.

*Ventral gland* situated immediately behind the base of the oesophagus.

*Excretory pore* not found.

*Female genital tract* unpaired, outstretched, prevulvar, reaching to the base of the ventral gland, beginning at 20 % of the body length.
Testis long, beginning at 25% of the body length. Spicula slender, slightly curved, 1.57 × anal diameter long, with a proximal knobbed and a distal pointed end. Accessory pieces anvil-shaped, 0.5 × anal diameter long, with distinct dorsal apophysis.

Tail very long, tapering gradually, the last 2/3 almost filiform. In the male, the tail is frequently knee-like curved (fig. 144). The relations are: in the male, length 15.5 ×, width at the end 0.073 × anal diameter; in the female, length 19 ×, width at the end 0.14 × anal diameter.

The tail ends in an elongate, conical outlet for the spinneret glands.

**Geographical distribution**: North Sea and Baltic.

### 62. Monhystera disjuncta Bastian 1865.

Fig. 145-150.

Syn.: *Monhystera ambigua* Bastian 1865.

*Monhystera ambiguoides* Buetschli 1874.

**References**:

Allgén 1893a, p. 247, *M. ambiguua*.

Allgén 1893b, p. 186, *M. ambiguua*.

Allgén 1893c, p. 422, *M. ambiguua*.

Bastian 1865, p. 98, pl. IX, fig. 12-13, *M. disjuncta*.


Buetschli 1874, p. 27, pl. II, fig. 7a, *M. ambiguoides*.

De Man 1888, p. 7, fig. 4-4c.

8 ♂♂, 8 ♀ ♀ and 10 juv. on a break-water at Oostende, harbour entrance, IX. 1931; De Saebeeleer.

1 ♂ and 3 juv. on stones along the littoral, Knokke-Zoute, 28.XII. 1931.

**Dimensions**:

<table>
<thead>
<tr>
<th></th>
<th>♂ L.</th>
<th>♂ L.</th>
<th>♂ L.</th>
<th>♀ L.</th>
<th>♀ L.</th>
</tr>
</thead>
<tbody>
<tr>
<td>L</td>
<td>0.628 mm.</td>
<td>1,200 mm.</td>
<td>0.635 mm.</td>
<td>0.645 mm.</td>
<td>0.645 mm.</td>
</tr>
<tr>
<td>α</td>
<td>36.9</td>
<td>32.8</td>
<td>24.4</td>
<td>24.25</td>
<td>24.25</td>
</tr>
<tr>
<td>β</td>
<td>5.9</td>
<td>7.5</td>
<td>6.35</td>
<td>6.9</td>
<td>6.9</td>
</tr>
<tr>
<td>γ</td>
<td>10.46</td>
<td>11.42</td>
<td>9.77</td>
<td>10.2</td>
<td>10.2</td>
</tr>
<tr>
<td>M</td>
<td>566</td>
<td>1095</td>
<td>545</td>
<td>570</td>
<td>580</td>
</tr>
<tr>
<td>14</td>
<td>106</td>
<td>140</td>
<td>70</td>
<td>86</td>
<td>88</td>
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<tr>
<td>9.3</td>
<td>17</td>
<td>26</td>
<td>12</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>14</td>
<td>0.628 mm.</td>
<td>1,200 mm.</td>
<td>0.635 mm.</td>
<td>0.645 mm.</td>
<td>0.645 mm.</td>
</tr>
</tbody>
</table>
Monhystera microptalma De Man.

141. General view of a female.
142. Anterior end of a female.
143. Spicular apparatus of a male.
144. General view of a male.
145. General view of a female.

Monhystera disjuncta Bastian.

147. Head end of a male.
148. Head end of a female.
149. Spicular apparatus of a male.
150. Posterior end of a female.
THE FREELIVING MARINE NEMAS OF THE BELGIAN COAST. II

Habitus: Body tapering gradually towards both ends. Confer figures and formulas.

Cuticle smooth, bare.

Amphids circular, in a male 0.3 x, in a female 0.33 x corresponding body diameter, on 2 x cephalic diameter from the anterior end in both sexes.

Head bluntly rounded, with 6 round lips, each with a small labial papillae; 6 cephalic setae measuring in the male 0.2 x, in the female 0.25 x cephalic diameter.

Buccal cavity elongate, with distinct, although faintly cuticularised walls, 1 x cephalic diameter long.

Ősophagus gradually widening towards the base. Nerve-ring in a male at 50 %, in a female at 60 % of the oesophageal length.

Female genital tract unpaired, prevulvar.

Testis long, outstretched, beginning at 25 %-33 % of the body length. Spicula very slender, 26 x as long as they are wide, 1.55 x anal diameter, proximal end knobbed, distal end sharply pointed. Gubernaculum anvil-shaped, of the same type as in M. microphthalma and M. parva.

Tail gradually tapering, broadly rounded with a nipple-like outlet for the spinneret glands. The male tail presents a pair of small ventral setae on the lower lip of the cloaca, 1 pair of mamelliform papillae with a short setum at the apex on 1/3, a second pair at the beginning of the distal 1/3. This last pair is preceded by 2 pairs of minute setae.

Geographical distribution: Channel, North Sea, Baltic, Campbell-islands.

Remarks. — Bastian, misled by the posterior position of the vulva in the female of ambiguia, described his female specimen as a male; confer pl. IX, fig. 15.

Our material, containing males as well as females of the said species, proves that Bastian’s M. ambiguia and M. disjuncta are conspecific. Since M. disjuncta was described prior to M. ambiguia, the first name prevails.

The shape of the tail in both figures (13 and 15, pl. IX) has been depicted as pointed too much, as in so many other figures of Bastian.

As for M. ambiguoides Buetschli, we can only confirm De Man’s opinion that it is a synonym of M. ambiguia Bastian, and therefore also of M. disjuncta Bastian.
63. Monhystera parva (Bastian) 1865.

Fig. 151-160.

Syn.: Tachyhodites parvus Bastian 1865.

Monhystera heteroparva Micoletzky 1924.

Monhystera parva var. meridiana Micoletzky 1922.

References:

Allgén 1927a, p. 57.
Allgén 1928c, p. 298.
Allgén 1929a, p. 42.
Allgén 1932c, p. 422.
Bastian 1865, p. 165, pl. XIII, fig. 185.

Tachyhodites parvus.

9♂♂♂, 15♀♀ and 7 juveniles on a break-water at Oostende, harbour entrance, IX.1931; De Saedeleer.
8♂♂♂, 17♀♀ and 45 juveniles from 't Zwyn, sand and organic detritus, 28.XII.1931; NaCl: 21%.

Dimensions:

♂ L. : 0,500 mm.; α : 27,4; β : 5,55; γ : 5,55.
12,7 ? 90 118 M 410 0,500 mm.
10 16,6 18,2 13,6

♂ L. : 0,610 mm.; α : 25,4; β : 7,6; γ : 6,1.
? ? 80 ? M 510 0,610 mm.
18 24 18

♂ L. : 0,645 mm.; α : 26,4; β : 5,1; γ : 6,1.
? 75 126 155 M 340 0,645 mm.
12,5 20 24 19,5 4

♀ L. : 0,600 mm.; α : 25,4; β : 5,9; γ : 5,2; V. : 59,1%.
13,6 ? 104 163 333 485 0,600 mm.
12,7 20 23,6 13,6

♀ L. : 0,660 mm.; α : 25,3; β : 6,5; γ : 6,2; V. : 59,1%.
? ? 149 140 390 533 0,660 mm.
11,5 18 26 15 4,5

♀ L. : 0,760 mm.; α : 25,3; β : 6,33; γ : 6,33; V. : 55,4%.
? ? 120 153 422 640 0,760 mm.
13,5 22,5 30 19,5 5

Habitus: Body small; tail conspicuously more narrowed than the head end; confer the cobbian formulas and the figures.
Monhystera parva (Bastian).

151. General view of a male.
152. General view of a female.
153. Anterior end of a female.
154. Head end of a female.
155. Head end of a male.
156. Spicular apparatus of a male.
157. Spicular apparatus and tail of a male.
158. Id. of another male.
159. Tail of a female.
160. Tip of tail in a male.
Cuticle smooth, with short setae placed more or less along the submedian lines, distributed all over the body.

Amphids circular, in the male 0.315 x corresponding body diameter, on 1 cephalic diameter from the anterior end. In the female 0.26 x corresponding body diameter, on 1.15 cephalic diameters from the anterior end.

Head with 6 low lips, each with a minute papilla; 6 cephalic setae, in the male 0.33 x , in the female 0.28 x cephalic diameter long.

Buccal cavity typical, with very faint cuticularisation of the vestibulum.

Esophagus embraced by the nervering at 60 % of its length.

Female genital tract unpair, prevulvar, beginning at 20-27.5 % of the body length, growing in length and shifted more and more forwards, relative with age.

Testis beginning at the end of the first 1/4 of the body length. Spicula 1.5 anal diameters long, slightly curved, broadened in their proximal third, with a ventral denticle at the distal end of the mentioned broadening, the denticle being visible clearly only in slightly dorso-lateral view, becoming invisible when the animal is seen in strictly lateral position. Accessory pieces of the same type as in M. microphthalmum and M. disjuncta but not so massive.

Tail gradually tapering towards the cylindrical endportion which occupies more or less the last third of the tail. Relations : in the male, length 6.1-8.4 x , width at the end 0.12-0.21 x , in the female, length 5.3-6.6 x , width at the end 0.2-0.3 x anal-diameter.

The tail ends with a conical outlet for the spinneret-glands.

Geographical distribution: Channel, North Sea, Baltic, Atlantic (Sargasso-sea), Mediterranean.

Remarks. — Micoletzky points to differences of his species with the description of De Man. We must admit that De Man apparently has depicted the genital armature of his male specimens somewhat too schematic, and that he has overseen the characteristic denticle of the spicula as well as the setae on the body surface. Now it seems not necessary to us to bring Micoletzky's specimens to a new species, unless other differences should be found.

Genus ELEUTHEROLAIMUS Filipjev 1922.

Syn.: Monhystera Bastian 1865 ex parte.

64. Eleutherolaimus stenosoma (De Man) 1907.

Syn.: Monohystera stenosoma De Man 1907.

References:
Allgén 1928c, p. 298.
Allgén 1929b, p. 28.
Allgén 1929c, p. 42.
Allgén 1932c, p. 423.
The present specimens are typical representatives of the species.

Cuticle smooth with rare setae.

**Amphids** circular, with a median elevation, $0.53 \times$ corresponding body diameter, on $1.5 \times$ cephalic diameter from the anterior end. When fresh material is examined with great care, the amphids prove to be faintly spiral, and not circular.

**Head** with (?) lips, each with a small labial papilla and an anterior crown of labial setae (4 setae) $0.53 \times$ cephalic diameter long, and a second crown of 4 cephalic setae $1 \times$ cephalic diameter long.

**Tail** tapering gradually to the bluntly rounded tip. Length: $7.8 \times$, width at the end $0.2 \times$ anal diameter.

**Geographical distribution**: Channel, North Sea and Baltic.

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**Order VI: ANGUILLULOIDEA**

**Family ANGUILLULIDAE.**

**Genus Rhabditis Dujardin 1845.**

65. Rhabditis marina Bastian 1865.

Fig. 161-163.

**References:**

*Allgén 1931, p. 191.*  
*Bastian 1885, p. 129, pl. X, fig. 60-62.*  
*Ditlevsen 1911, p. 240, pl. II, fig. 1-5, 7.*  
*Steiner 1916, p. 518, pl. 18, fig. 1a-g.*  
*Steiner 1922, p. 9, pl. 1, fig. 1a-b.*

1 $\varphi$, 1 $\sigma$ and 17 juv. from break-water, Oostende, 18.XI.1931; NaCl: $30.77 \%$

1 $\varphi$, 1 $\sigma$ and 10 juv. from a puddle on the strand at Oostende, 18.XI.1931; NaCl: $29.3 \%$; 27.9% of the nematode fauna at this locality.

**Dimensions:**

<table>
<thead>
<tr>
<th>Sex</th>
<th>Length</th>
<th>$a$</th>
<th>$b$</th>
<th>$c$</th>
<th>$d$</th>
<th>$e$</th>
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<tbody>
<tr>
<td>$\sigma$</td>
<td>$1,420$ mm.</td>
<td>$150$</td>
<td>$205$</td>
<td>$295$</td>
<td>$500$</td>
<td>$M$</td>
<td>$1370$</td>
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<tr>
<td></td>
<td></td>
<td>$17$</td>
<td>$15$</td>
<td>$40$</td>
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<td>$55$</td>
<td>$24$</td>
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<tr>
<td>$\varphi$</td>
<td>$1,010$ mm.</td>
<td>$180$</td>
<td>$205$</td>
<td>$335$</td>
<td>$343$</td>
<td>$385$</td>
<td>$925$</td>
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<td>$20$</td>
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<td>$32$</td>
<td>$37$</td>
<td>$37$</td>
<td>$24$</td>
</tr>
</tbody>
</table>

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De Man 1907a, p. 229.  
De Man 1922, p. 223, fig. 9a-e.  
De Man 1922, p. 36, pl. 1, fig. 3-3e.  

1 $\sigma$ and 2 juv. from Heyst-Zeebrugge, 2.IX.1931.

5 juv. from 't Zwyn, between sand and organic detritus, 28.XII.1931; NaCl: 21 \%. 

Reference.
It is not certain whether the species *Rhabditis marina* Bastian does not embrace two different species corresponding with Steiner's division in *Rh. marina typ.* and *Rh. marina var. septentrionalis*, but a conclusion was not possible after the present, comparatively scanty material.

It is highly probable that Schulz's var. *kieliensis* falls into the mode of variability of the var. *septentrionalis* Steiner, to which our specimens also belong.

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*Rhabditis marina* Bastian.

161. Head end of a juvenile.
162. Copulatory apparatus and tail of a male.
163. Tail of a female.

The *buccal cavity* of a young female proved to be 2 cephalic diameter long.

*Male genital armature.* *Spicula* long and strong, 1.87 × anal diameter or 1.23 × length of tail. Proximal end swollen, distal end pointed. *Guubernaculum* 1 anal diameter long.
Bursa 3.42 × anal diameters long, embracing the whole male tail, with 1 + 2 preanal + 3 + 2 \( \frac{1}{3} \) postanal pairs of bursal papillae. (Cf. fig. 162.)

Immediately in front of the anal opening there are two small papillae on each side of the midventral line. Another small papilla (phasmid) is found on the dorsal side of the tail near to the apex.

Male tail 1.52 × anal diameter long. Female tail conical, with the indication of a cylindrical end-portion, which was more distinctly visible in the specimens of Ditlevsen and Steiner 1916, whereas the female tail of Bastian's animals was effilete and pointed.

Our specimens, as those of Ditlevsen and Steiner 1916 have a tail with a rounded tip. Relations of the tail : length, 3.2 ×, width at the end 0.127 × anal diameter. Non functional spinneret gland cells are present.

Geographical distribution: Channel, North Sea and Baltic.

Genus CEPHALOBUS Bastian 1865.

66. Cephalobus oxyuroides De Man 1876.

References:
- Confer Micoletzky 1922a, p. 276.
- De Coninck 1930, p. 121.

1 ♂ from ’t Zwyn, sand and organic detritus, 28.XII.1931; NaCl: 21 °/oo.

De Coninck found the species on an earlier date (1930) in ’t Zwyn in water with a salinity of only ± 5 °/oo.

Geographical distribution: Cosmopolite
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ADDITIONS

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— 1933b, Ueber einige freilebende Nematoden, insb. aus der litoralen region des Lofoten-archipels. (Tromsö museums Årshefter Naturhistorisk Avd. 5, 52, 1 : 1-14.)

— 1933c, Freilebende Nematoden aus dem Trondhjemsfjord. (Capita zoologica, IV, 2 : 1-162. Taf 1-19.)
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MEMOIRES HORS SERIE. — VERHANDELINGEN BUITEN REEKS.

Résultats scientifiques du Voyage aux Indes orientales néerlandaises de LL. AA. RR. le Prince et la Princesse Léopold de Belgique, publiés par V. Van Straelen.


ANNALES DU MUSEE.

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TOME I. — P.-J. VAN BENEDEN. Description des Ossements fossiles des environs d'Anvers. I.

TOME II. — L.-G. DE KONINCK. Faune du Calcaire carbonifère de la Belgique. I.

TOME III. — H. NYST. Conchyliologie des Terrains tertiaires de la Belgique, précédée d'une Introduction par E. VAN DES BROEK.

TOME IV. — P.-J. VAN BENEDEN. Description des Ossements fossiles des environs d'Anvers. II.

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