

DI:77028-9

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P L A N K T O N - H A U L S

"P i e r "        S c h e v e n i n g e n

1 9 7 0

15th October 1970 - 13th December 1970

by dr. Joh.a. Muller

E. "Pier" A, Scheveningen, two hours before high water

Date: 12th October 1970

I. Hauls	I. "Pier" A, Scheveningen
1. Place of hauling	"Pier" Scheveningen
2. Situation	+ 300 meter from the beach
3. Weather forecast	On the 12th of October during the night and on the following morning at many places mist. Increasing cloudiness from the Southern direction. Most places dry weather. Little wind.
4. Weather conditions, while hauling	Blue sky and mist. The horizon was not visible. Hardly any wind and the sea was so calm, that there were hardly any waves. Colour of sea greyish-brown. Near place of hauling brown not transparent.
5. Distance of hauling	+ 144 meter by walking
6. Time of hauling	10.50 - 11.02 by walking
7. Temperature	In the air 15°C In the water 13°C
8. Wind during hauling	Indications "Pier" Dir: Force: Indications Semaphore Dir: S.E. Force: 1m/sec
9. Lighthours a day	10.55 a day
10. Tides	2nd H.W. 13.05
11. Water Levels	a. during hauling: -50cm b. H.W. between hauls: + 60cm c. L.W. before hauling: -86cm
12. Direction of streams	Two hours before H.W.
13. Direction of streams at Scheveningen	Dir: Force:

Chemical analysis

Chloride: —  
 Phosphate: —  
 Nitrate: 2 mg/l

*Px chl —*  
*Ph. 0.75 mg/l*  
*N. 14 mg/l*

I. "Pier" A, Scheveningen, two hours before H.W.

Date: 12th October 1970

I. Haul "Pier" A, Scheveningen	Total numbers of organisms in haul
1. Bacillariophyceae	
Bellarochea malleus	100
Biddulphia sp.	170000
" alternans	150
" mobiliensis	4500
" regia	5500
" sinensis	6150
Chaetoceros sp.	1150
Coscinodiscus concinnus	58800
" excentricus	32300
" granii	21000
Ditylum brightwelli	150
Eucampia zodiacus	1000
Fragilaria sp.	2500
Lauderia borealis	1800
Rhizosolenia sp.	2300
" alata	1150
Thalassiosira sp.	150
2. Protozoa	
Noctiluca miliaris	4500
3. Coelenterata	<del>4500</del>
Leuckartiara octona	50
Thalidium hemisphericum	200
4. Polychaeta	
Larva Polychaeta sp.	300
Polychaeta sp.	600
5. Crustacea	
Copepoda	
Acartia sp.	2000
Centropages hamatus	350
Microcalanus pusillus	550
Nauplius larva Cop. sp.	350
Temora longicornis	1450
Cirripedia	
Cypris larva Cir.sp.	1650
Nauplius " " "	100
Cyclopoidea <i>Cyclopoidea sp</i>	100
Harpacticoida	
Harpacticoida sp	1050
6. Mollusca	
Lamellibranchiata	
Mytilus edulis (0.2mm)	100

Sediment ± 2/13 contents.

## II. "Pier" B, Scheveningen, two hours after high water

Date: 12th October 1970

II. Hauls	II. "Pier" B, Scheveningen
1. Place of hauling	"Pier" Scheveningen
2. Situation	<del>"Pier" Scheveningen</del> ± 300 meter from the beach
3. Weather forecast	On the 12 of October during the night and on the following morning at many places mist. Increasing cloudiness from the Southern direction. Most places dry weather Little wind.
4. Weather conditions, while hauling	Sky blue white, very misty. More misty even then in the morning. The horizon was not visible. I hardly ever saw the sea so calm and the net only was carried away by the tides. At a distance the sea was greyish, at the place of hauling it was brownish.
5. Distance of hauling	± 144 meter by walking
6. Time of hauling	15.02 - 15.14 by walking
7. Temperature	In the air $24\frac{1}{2}^{\circ}\text{C}$ In the water $15^{\circ}\text{C}$
8. Wind during hauling	Indications "Pier" Dir: Force: Indications Semaphore Dir: N.W. Force: 1
9. Lighthours a day	10.55 a day
10. Tides	2nd H.W. 13.05
11. Water Levels	a. during hauling: -4 cm b. H.W. between hauls: + 60cm c. L.W. before hauling: -86 cm
12. Direction of streams	Two hours after H.W.
13. Direction of streams at Scheveningen	Dir: Force:
14. Chemical analysis	Chloride — Phosphate absent $0.55\text{mg/l}$ Nitrate $2\text{mg/l}$ $8\text{mg/l}$

## II. "Pier" B, Scheveningen, two hours after H.W.

Date: 12th October 1970

## II. Haul "Pier" B, Scheveningen

1. B a c i l l a r i o p h y c e a e	
Biddulphia sp.	135000
"    aurita	850
"    mobiliensis	1950
"    regia	10000
"    sinensis	8900
Chaetoceros sp.	1850
Coscinodiscus concinnus	13200
"    excentricus	8900
"    granii	8000
Ditylum brightwelli	150
Eucampia zoodiacus	1950
Fragilaria sp.	700
Lauderia borealis	3000
Phaeocystis present	
Rhizosolenia sp	700
"    alata	4600
Skeletonema costatum	1250
2. P r o t o z o a	
Ceratium fusus	50
Noctiluca miliaris	1400
3. C o e l e n t e r a t a	
Leuckartiara octona	250
Phialidium hemisphericum	500
Steenstrupia nutans	50
C t e n o p h o r a	
Pleurobrachia pileus	50
4. P o l y c h a e t a	
Larva Polychaeta sp.	600
Polychaeta sp	300
5. C h a e t o g n a t h a	
Sagitta sp	100
6. C r u s t a c e a	
C o p e p o d a	
Acartia sp.	100
Centropages hamatus	250
Nauplius larva Cop.sp.	1550
C i r r i p e d i a	
Cypris larva Cir.sp.	450
Nauplius " " "	750
C y c l o p o i d a	
Cyclopoida sp	350
H a r p a c t i c o i d a	
Harpacticoida sp	1200
M y s i d a c e a	
Mesopodopsis slabberi	50
E u p h a u s i a c e a	
Euphausiacea sp	50
7. S a l p i d a	
Oikopleura dioica	50
8. M o l l u s c a	
G a s t r o p o d a	
Young Gastropoda sp	50
L a m e l l i b r a n c h i a t a	
M y t i l u s e d u l i s (0.2mm)	100
10. E g g s	
Evertebrata eggs	4300
Copepoda eggs	2650

Sediment 1/12 contents

III. "Pier" A, Scheveningen, two hours before H.W.  
 Date: 26th October 1970

III. Haul "Pier" A, Scheveningen.

1. B a c i l l a r i o p h y c e a e	
Biddulphia sp.	1100
" mobiliensis	1400
" regia	10100
" sinensis	9300
Coscinodiscus concinnus	3300
" excentricus	13000
" granii	7300
Rhizosolenia alata	2300
2. P r o t o z o a	
Foraminifera sp.	200
Noctiluca miliaris	100
3. C o e l e n t e r a t a	
Phialidium hemisphericum	100
4. C t e n o p h o r a	
Pleurobrachia pileus	50
5. P o l y c h a e t a	
Polychaeta sp.	100
" larva	100
6. N e m a t o d a	
Nematoda sp.	50
7. C r u s t a c e a	
C o p e p o d a	
Acartia sp	100
Anomalocera patersoni	50
Calanus finmarchicus	50
Centropages hamatus	150
Microcalanus pusillus	250
Nauplius larva Cop.sp	100
C i r r i p e d i a	
Cypris larva Cir.sp.	400
Nauplius " " "	100
H a r p a c t i c o i d a	
Harpacticoida sp	300
" " with eggs	100
C y c l o p o i d a	
Cyclopoida sp	150
A m p h i p o d a	
Amphipoda sp	50
8. M o l l u s c a	
Pteropoda sp?	50
Gastropoda <i>mytilus</i>	
Gastropoda egg	100
L a m e l l i b r a n c h i a t a	
Cardium echinatum (0.25mm)	50
Glycymeris glycymeris (0.3mm)	50
Modiolus modiolus (0.2mm)	200
Mytilis edulis (0.2mm)	150

Sediment 4/11 contents  
 (many plant-rest, dirt.)

III. "Pier" A, Scheveningen, two hours before high water

Date: 26nd October 1970

## III. "Pier" A, Scheveningen

- |  |  |
|--|--|
| 1. Place of hauling                      | "Pier" Scheveningen  |
| 2. Situation                             | ± 300 meter from the beach   |
| 3. Weather forecast                      | Heavily clouded. Occasionally rain.<br>Wind moderate, South Western.   |
| 4. Weather conditions, while hauling     | Sky fully overcast. No sunshine and at first rain. Visibility good. Sea greyish, rather choppy. Near place of hauling brown not transparent. |
| 5. Distance <del>while</del> of hauling  | ± 144 meter by walking   |
| 6. Time of hauling                       | 10.38 - 10.50 by walking   |
| 7. Temperature                           | In the air 12 <sup>o</sup> C<br>In the water 8 <sup>o</sup> C  |
| 8. Wind during hauling                   | Indications "Pier"<br>Dir: W. Force: 7m/sec<br>Indications Semaphore<br>Dir: W.S.W. Force 8m/sec.  |
| 9. Lighthours a day                      | 10-01 a day  |
| 10. Tides                                | 2nd H.W. 12.58   |
| 11. Water Levels                         | a. during hauling + 16cm<br>b. H.W. between hauls: + 118cm<br>c. L.W. before hauling -44 cm  |
| 12. Direction of streams                 | two hours before H.W.  |
| 13. Direction of streams at Scheveningen | Dir: Force:  |

## 14. Chemical analysis

(HP)<sub>x</sub>

Chloride	14500 mg/l	5780
Phosphate	0,35 "	13
Nitrate	3 "	4

IV. "Pier" B, two hours after high water

Date: 26nd October 1970

- |  |  |
|--|--|
| IV. Hauls                                | IV. "Pier" B, Scheveningen   |
| 1. Place of hauling                      | "Pier" Scheveningen  |
| 2. Situation                             | + 300 meter from the beach   |
| 3. Weather forecast                      | Heavily clouded. Occasionally rain.<br>Wind moderate, South-Western  |
| 4. Weather conditions, while hauling     | Sky partly overcast with blue patches. Later on the sun came through. Sea greyish. Near place of hauling brown not transparent. Visibility good. Sea choppy. |
| 5. Distance of hauling                   | + <del>x</del> 144 meter by walking  |
| 6. Time of hauling                       | 14.36 - 14.48 by walking   |
| 7. Temperature                           | ⊗ In the air 13½°C<br>In the water 9½°C  |
| 8. Wind during hauling                   | Indications "Pier"<br>Dir: W. Force 7m/sec<br>Indications Semaphore<br>Dir: N.W. Force: 11m/sec  |
| 9. Lighthours a day                      | 10-01 a day  |
| 10. Tides                                | 2nd H.W. 12.58   |
| 11. Water Levels                         | a. during hauling: + 76cm<br>b. H.W. between hauling +118 cm<br>c. L.W. before hauling -44 cm  |
| 12. Direction of streams                 | Two hours after H.W.   |
| 13. Direction of streams at Scheveningen | Dir: Force:  |

14. Chemical analysis

Chloride	14200 mg/l	Hy 0756 mg/l
Phosphate	0.80 "	1.0 "
Nitrate	0.2 "	5 "



IV. "Pier" B, Scheveningen, two hours after H.W.  
 Date: 26th October 1970

## IV. Haul "Pier" B' Scheveningen

1. B a c i l l a r i o p h y c e a e	
Biddulphia alternans	200
" sp.	1900
" mobiliensis	800
" regia	9300
" sinensis	8300
Coscinodiscus concinnus	1900
" excentricus	3100
" granii	8900
Chaetoceros sp	100
Fragilaria sp.	400
Rhizosolenia alata	200
2. P r o t o z o a	
Ceratium tripos	50
Foranunifera sp	200
Noctiluca miliaris	100
3. C o e l e n t e r a t a	
Phialidium hemisphericum	100
4. C t e n o p h o r a	
Pleurobrachia pileus	100
5. P o l y c h a e t a	
Polychaeta sp	150
" larva	200
6. C r u s t a c e a	
C o p e p o d a	
Acartia sp.	300
Anomalocera patersoni	50
Centropages hamatus	150
Microcalanus pusillus	50
Nauplius larva Cop.sp	50
C y c l o p o i d a	
Cyclopoida sp.	350
H a r p a c t i c o i d a	
Harpacticoida sp.	600
C i r r i p e d i a	
Cypris larva Cir.sp.	200
Nauplius " " "	50
7. M o l l u s c a	
L a m e l l i b r a n c h i a t a	
Mactra corallina (0.2mm - 0.25mm)	500
Modiolus modiolus (0.3mm)	250
Mytilus edulis (0.2mm)	50

Sediment  $\pm$  1/6 contents  
 (many plant-rests + dirt)

I. "Pier" A, Scheveningen, two hours before H.W.

Date: 10th November 1970.

I. Hauls	I. "Pier" A, Scheveningen									
1. Place of hauling	"Pier" Scheveningen									
2. Situation	+ 300 meter from the beach									
3. Weather forecast	Some showers alternating with clearings of the sky. Wind strong to stormy, Western to Northwestern, later on decreasing.									
4. Weather conditions, while hauling	Sky with patches of blue and white and grey clouds. In the West the sky was very dark. The colour of the sea almost steel-blue, at the distance green-brownish. Near the place of hauling water very rough and brown. It was very difficult to keep the net in the water. Visibility good.									
5. Distance of hauling	+ 144 meter by walking									
6. Time of hauling	10.32 - 10.44 by walking									
7. Temperature	In the air 10°C In the water 7°C									
8. Wind during hauling	Semaphore Dir: N.W. Force: 6½ m/sec.									
9. Lighthours a day	9.07 a day									
10. Tides	1st H.W. 12.28									
11. Water Levels	a. during hauling -61cm b. H.W. between hauls + 92cm c. L.W. before hauling - 30cm									
12. Direction of streams	Two hours before H.W.									
13. Direction of streams at Scheveningen	Dir: Force:									
14. Chemical analysis	<p style="text-align: right;">H</p> <table border="0"> <tr> <td>Chloride</td> <td>15600 mg/l</td> <td>6004 mg/l</td> </tr> <tr> <td>Phosphate</td> <td>0,07 "</td> <td>0,00 "</td> </tr> <tr> <td>Nitrate</td> <td>2 "</td> <td>0 "</td> </tr> </table>	Chloride	15600 mg/l	6004 mg/l	Phosphate	0,07 "	0,00 "	Nitrate	2 "	0 "
Chloride	15600 mg/l	6004 mg/l								
Phosphate	0,07 "	0,00 "								
Nitrate	2 "	0 "								

I. Haul "Pier" A, Scheveningen two hours before H.W.  
 Date: 10th November 1970

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I. "Haul "Pier" A, Scheveningen	
1. B a c i l l a r i o p h y c e a e	
Biddulphia aurita	1750
" regia	2650
" sinensis	1500
Coscinodiscus concinnus	1850
" excentricus	2050
" granii	4550
Fragilaria sp.	100
Rhizosolenia sp.	1900
Skeletonema costatum	100
2. P r o t o z o a	
Foraminifera sp.	250
Noctiluca miliaris	250
3. N e m a t o d a	
Nematoda sp.	50
4. C r u s t a c e a	
C o p e p o d a	
Acartia sp.	200
Cirripedia	
Cypris larva Cir.sp.	100
Harpacticoida	
Harpacticoida sp.	400
Amphipoda	
Amphipoda sp.	50
5. M o l l u s c a	
Mactra corallina (0.25mm)	150
Spisula solida(0.35mm)	50
6. E c t o p r o c t a	
Cyphonautes larva	
Membranipora	
membranaceus	50
7. E g g s	
Eggs Evertebrata sp	350

Sediment  $\pm$  1/10 contents

I. Haul "Pier" A, Scheveningen two hours before H.W.  
Date: 10th November 1970

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I. "Haul "Pier" A, Scheveningen	
1. B a c i l l a r i o p h y c e a e	
Biddulphia aurita	1750
" regia	2650
" sinensis	1500
Coscinodiscus concinnus	1850
" excentricus	2050
" granii	4550
Fragilaria sp.	100
Rhizosolenia sp.	1900
Skeletonema costatum	100
2. P r o t o z o a	
Foraminifera sp.	250
Noctiluca miliaris	250
3. N e m a t o d a	
Nematoda sp.	50
4. C r u s t a c e a	
C o p e p o d a	
Acartia sp.	200
Cirripedia	
Cypris larva Cir.sp.	100
H a r p a c t i c o i d a	
Harpacticoida sp.	400
A m p h i p o d a	
Amphipoda sp.	50
5. M o l l u s c a	
Mactra corallina (0.25mm)	150
Spisula solida(0.35mm)	50
6. E c t o p r o c t a	
Cyphonautes larva	
Membranipora	
membranaceus	50
7. E g g s	
Eggs Evertebrata sp	350

Sediment  $\pm$  1/10 contents

## II. "Pier" B, Scheveningen. two hours after H.W.

Date: 10th November 1970

II. Hauls	II. "Pier" B, Scheveningen	
1. Place of hauling	"Pier" Scheveningen	
2. Situation	± 300 meter from the beach	
3. Weather forecast	Some showers alternating with clearings of the sky. Wind strong to stormy, Western to Northwestern, later on decreasing.	
4. Weather conditions, while Hauling	Sky blue with black-white clouds. The colour of the sea at the distance steel-blue with greenish-brown at some places. Near the place of hauling brown. Though the weather was calmer than in the morning, it was still difficult to haul by a number of whirlpools. Visibility less than in the morning, but still good.	
5. Distance of hauling	± 144 meter by walking	
6. Time of hauling	14.17 - 14.29 by walking	
7. Temperature	In the air 11°C In the water 7½°C	
8. Wind during hauling	Semaphore Dir: W.N.W. Force: 6½m/sec.	
9. Lighthours a day	9.07 a day	
10. Tides	1st H.W. 12.28	
11. Water Levels	a. during hauling + 28cm b. H.W. between hauls + 92cm c. L.W. before hauling -30cm	
12. Direction of streams	Two hours after H.W.	
13. Direction of streams at Scheveningen	Dir:	Force
14. Chemical analysis	Chloride 15.300 mg/l	6.67 mg/l
	Phosphate 0.20 "	0.65 "
	Nitrate 3 "	3 "

II. Haul "Pier B, Scheveningentwo hours after H.W.

Date: 10th November 1970

## II. Haul "Pier" B, Scheveningen

1. B a c i l l a r i o p h y c e a e	
Biddulphia sp.	1600
" alternans	100
" aurita	1000
" mobiliensis	100
" regia	5800
" sinensis	2700
Chaetoceros sp.	100
Coscinodiscus concinnus	1900
" excentricus	2500
" granii	6150
Rhizosolenia sp	600
2. P r o t o z o a	
Foraminifera sp.	1200
Noctiluca miliaris	100
3. P o l y c h a e t a	
Polychaeta sp.	50
Vase Terebella larva	50
4. C r u s t a c e a	
C o p e p o d a	
Acartia sp.	100
Acartia sp. with eggs	50
Centropages hamatus	50
Microcalanus pusillus	50
C i r r i p e d i a	
Cypris larva Cir.sp.	150
H a r p a c t i c o i d a	
Harpacticoida sp.	50
C y c l o p o i d a	
Cyclopoida sp.	50
5. M o l l u s c a	
L a m e l l i b r a n c h i a t a	
Mytilus edulis	150
Modiolus modiolus	100
Spisula solida	600
G a s t r o p o d a	
Young gastropoda sp	50
6. E c t o p r o c t a	
Cyphonautes larva	
Membranipora	
membranaceus	200
7. E g g s	
Evertebrata eggs	550

Sediment  $\pm$  1/20 contents

III. "Pier" A, Scheveningen two hours before H.W.  
Date: 24th November 1970

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III. Hauls	"Pier" A, Scheveningen
1. Place of hauling	"Pier" Scheveningen
2. Situation	+ 300 meter from the beach
3. Weather forecast	Rather <del>much</del> <sup>mainly</sup> from the beach clouds. Mainly in the Western part of the country occasionally rain of drizzle Moderate to strong Southern wind. Temperatures sometimes higher.
4. Weather conditions while hauling	Sky partly overcast, sun shining through the clouds. Coldish. Sea calm, brown, transparent. Visibility rather good, though near the horizon a little misty.
5. Distance of hauling	+ 144 meter by walking
6. Time of hauling	9.51 - 10.03 by walking
7. Temperature	In the air $6\frac{1}{2}^{\circ}\text{C}$ In the water $3\frac{1}{2}^{\circ}\text{C}$
8. Wind during hauling	Semaphore Dir: S.S.E. Force 14m/sec.
9. Lighthours a day	8-10 a day
10. Tides	1st H.W. 11.55
11. Water Levels	a. during hauling - 22 cm b. H.W. between hauls + 45cm c. L.W. before hauling - 104cm
12. Direction of streams	Two hours before H.W.
13. Direction of streams at Scheveningen	Dir: Force:
14. Chemical analysis	Chloride: Phosphate: Nitrate:

III. Haul "Pier" A, Scheveningen two hours before H.W.

Date: 24th November 1970

## III. "Haul" Pier" A, Scheveningen

1. B a c i l l a r i o p h y c e a e	
Bellarochea malleus	50
Biddulphia sp.	50
" aurita	100
" mobiliensis	400
" sinensis	11300
" regia	13400
Cerataulina sp.	50
Coscinodiscus concinnus	800
" excentricus	1150
" granii	1100
Fragilaria sp.	200
Melosira sp.	50
Rhizosolenia sp.	1150
2. P r o t o z o a	
Foraminifera sp.	50
Noctiluca miliaris	750
3. C o e l e n t e r a t a	
Obelia sp.	50
4. C h a e t o g n a t h a	
Sagitta sp.	50
5. C r u s t a c e a	
C o p e p o d a	
Acartia sp.	200
Microcalanus pusillus	50
H a r p a c t i c o i d a	
Harpacticoida sp	200
C y c l o p o i d a	
Cyclopoida sp	50
C i r r i p e d i a	
Cypris larva Cir.sp	50
6. M o l l u s c a	
Mactra corallina (o.25mm)	100
7. E c t o p r o c t a	
<del>Mactra</del> Cyphonautes larva	
Membranipora membranacea	600

Sediment  $\pm$  1/40 contents



IV. "Pier" B, Scheveningen two hours after H.W.

Date: 24th November 1970

IV. Hauls	IV. "Pier" B, Scheveningen
1. Place of hauling	"Pier" Scheveningen
2. Situation	+ 300 meter from the beach
3. Weather forecast	Rather <sup>many</sup> <del>much</del> clouds. Mainly in the Western part of the country occasional rain or drizzle. Moderate to strong. Southern wind. Temperature sometimes higher.
4. Weather conditions while hauling	Much blue in the sky. More sun than in the morning. Sea calm, water brownish, transparent. Visibility rather good, though near the horizon still a little misty.
5. Distance of hauling	+ 144 meter by walking
6. Time of hauling	13.55 - 14.07 by walking
7. Temperature	In the air 13°C In the water 6°C
8. Wind during hauling	Semaphore Dir: S.S.E. Force: 14m/sec.
9. Lighthours a day	8.10 a day
10. Tides	1st H.W. 11.55
11. Water Levels	a. during hauling - 2 cm b. H.W. between hauls + 45cm c. L.W. before hauling <del>2</del> -104cm
12. Direction of streams	Two hours after H.W. -104cm
13. Direction of streams at Scheveningen	Dir: Force:
14. Chemical analysis	Chloride: Phosphate: Nitrate:

IV. Haul "Pier" B, Scheveningen, two hours after H.W.

Date: 24th November 1970

## IV. Haul "Pier" B, Scheveningen.

1. B a c i l l a r i o p h y c e a e	
Biddulphia sp	50
" aurita	50
" regia	3600
" sinensis	3300
Coscinodiscus concinnus	50
" excentricus	50
" granii	50
Rhizosolenia <del>costatum</del> sp	800
Skeletonema costatum	50
2. P r o t o z o a	
Noctiluca miliaris	150
3. P o l y c h a e t a	
Polychaeta sp	100
4. C h a e t o g n a t h a	
Sagitta sp	50
5. C r u s t a c e a	
C y c l o p o i d a	
Cyclopoidasp	50
H a r p a c t i c o i d a	
Harpacticoida sp	50
C o p e p o d a	
Microcalanus pusillus	50

Sediment not worth mentioning

I. "Pier" A, Scheveningen, two hours before high water

Date: 9th December 1970.

I. Hauls	I. "Pier" A, Scheveningen
1. Place of hauling	"Pier" Scheveningen
2. Situation	± 300 meter from the beach
3. Weather forecast	Sky partly or slightly overcast Weather mostly dry, during the night and in the morning locally mist. Generally not much wind. About the same temperature as on the 8th of December.
4. Weather conditions while hauling	Sky for the greater part overcast. Here and there some blue and white patches. While I was hauling the sun could be seen a moment through the light clouds. The sea was brown near the horizon blue-greyish. Near the place of hauling also brown. Sea rather calm, yet near the place of hauling whirling very much. Visibility rather good.
5. Distance of hauling	± 144 meter by walking
6. Temperature	⊗ In the air 7°C In the water 3°C
7. Wind during hauling	Semaphore Force: 3½m/sec. Dir. N.N.E.-N.E. Pier: Force 4m/sec.
8. Lighthouse a day	7.54 a day
9. Time of hauling	9.57 - 10.09 by walking with the fine net.
10. Tides	1st H.W. 11.57
11. Direction of streams	Two hours before H.W.
12. Direction of streams at Scheveningen	
13. Water Levels	a. during hauling + 30cm b. H.W. between hauls + 54cm c. L.W. before hauling - 74cm
14. Chemical analysis	Chloride Phosphate Nitrate

I. Haul "Pier" A, Scheveningen, two hours before H.W.

Date: 9th December 1970

I. Haul "Pier" A, Scheveningen		
1. B a c i l l a r i o p h y c e a e		
Biddulphia alternans		500
" aurita		1000
" regia		4750
" sinensis		3250
Coscinodiscus concentricus		3500
" excentricus		3000
" granii		9500
Fragilaria sp.		750
Rhizosolenia sp		1000
2. P r o t o z o a		
Foraminifera sp.		500
Noctiluca		18000
3. C o e l e n t e r a t a		
Phialidium hemisphericum		50
4. P o l y c h a e t a		
Polychaeta sp.		50
Trochophora larva		50
5. C r u s t a c e a		
C o p e p o d a		
Acartia sp		250
Centropages hamatus		50
C i r r i p e d i a		
Cypris larva Cir.sp.		400
Nauplius " " sp.		50
C y c l o p o i d a		
Cyclopoida sp.		500
H a r p a c t i c o i d a		
Harpacticoida sp.		250
6. M o l l u s c a		
L a m e l l i b r a n c h i a t a		
Cardium sp.		50
Modiolus modiolus		250
Spisula sp		300
7. C h a e t o g n a t h a		
Sagitta sp.		50
8. E c t o p r o c t a		
Cyphonautes larva		
Membranipora membranacea		50

Sentiments  $\pm$  1/3 contents

II. "Pier" B, Scheveningen, two hours after high water

Date: 9th December 1970.

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II. Hauls	"Pier" B, Scheveningen
1. Place of hauling	"Pier" Scheveningen
2. Situation	± 300 meter from the beach
3. Weather forecast	Sky partly of slightly overcast. Weather mostly dry, during the night and in the morning locally mist. Generally not much wind. About the same temperature as on the 8th of December.
4. Weather conditions, while hauling	Sky fully overcast. More wind than in the morning. Near the horizon greyish-blue. Visibility rather good. Sea calm and near the place of hauling brown and more trans- parent than in the morning.
5. Distance of hauling	± 144 meter by walking
6. Temperature	In the air 9°C In the water 5°C
7. Wind during hauling	Semaphore: Force: 4/m Dir: N.E. Pier: Force 6m/sec
8. Lighthours a day	7.54 a day
9. Time of hauling	13.54 - 14.00 by walking with the fine net
10. Tides	1st H.W. 11.57
11. Direction of streams	Two hours after H.W.
12. Direction of streams at Scheveningen	
13. Water Levels	a. during hauling + 38cm b. H.W. between hauls + 54cm c. L.W. before hauling - 74cm
14. Chemical analysis	Chloride Phosphate Nitrate

II. Haul "Pier" B, Scheveningen, two hours after high water

Date: 9th December 1970

## II. Haul "Pier" B, Scheveningen

1. B a c i l l a r i o p h y c e a e	
Biddulphia sp	100
" aurita	500
" mobiliensis	300
" sinensis	3100
" regia	3300
Chaetoceros sp.	100
Coscinodiscus conninnus	400
" excentricus	700
" granii	1500
Rhizosolenia sp	800
2. P r o t o z o a	
Foraminifera sp.	100
Noctiluca miliaris	1700
3. C r u s t a c e a	
C o p e p o d a	
Acartia sp.	50
C i r r i p e d i a	
Cypris larva Cir.sp	50
C y c l o p o i d a	
Cyclopoida sp.	50
H a r p a c t i c o i d a	
Harpacticoida sp.	250
4. M o l l u s c a	
L a m e l l i b r a n c h i a t a	
Mactra corallina	200
Modiolus modiolus	150
Spisula sp	50

sediment nor with mentioning

III. "Pier" A, Scheveningen, two hours before high water.

Date: 23th December 1970

III. Hauls	"Pier" A, Scheveningen
1. Place of hauling	"Pier" Scheveningen
2. Situation	+ 300 meter from the beach
3. Weather forecast	Clear night with predominantly light frost. On the 23rd of December sky partly or almost full clouded with snowshowers. Temperature in the afternoon a little above freezing-point. Wind on the 23rd moderates temporarily strong Northern.
4. Weather conditions while hauling	Visibility good, hazy and sky overcast. In the East red clouds during hauling the sun came through, a low sun between red clouds. The sea rather calm near place of hauling brown, not transparent. (There was a thin layer of ice on the little basin at the promenade.
5. Distance of hauling	+ 144 meter by walking
6. Temperature	In the air $1^{\circ}\text{C}$ In the water $-\frac{1}{2}^{\circ}\text{C}$
7. Wind during hauling	Semaphore Force: $2\frac{1}{2}\text{m/sec}$ . Dir. S.E. "Pier": Force: $2\text{m/sec}$ .
8. Lighthours a day	7.44 a day
9. Time of hauling	8.58 - 9.10 by walking
10. Tides	1st H.W. 10.36
11. Direction of streams	+ Two hours before H.W.
12. Direction of streams at Scheveningen	
13. Water Levels	a. during hauling $-57\text{cm}$ b. H.W. between hauls $+64\text{cm}$ c. L.W. before hauling $-74\text{cm}$
14. Chemical analysis	Chloride Phosphate Nitrate

III. "Pier" A, Scheveningen, two hours before H.W.

Date: 23rd December 1970

## III. Haul "Pier" A, Scheveningen

1. B a c i l l a r i o p h y c e a e	
Bellarocha malleus	150
Biddulphia alternans	300
" aurita	2850
" mobiliensis	300
" regia	19950
" sinensis	8550
Coscinodiscus concinnus	7200
" granii	15600
" excentricus	6450
Fragilaria sp	750
Rhizosolenia sp	5550
2. P r o t o z o a	
Foraminifera sp	300
Noctiluca miliaris	6050
3. C o e l e n t e r a t a	
Phialidium hemisphericum	150
4. C r u s t a c e a	
C o p e p o d a	
Acartia sp.	1800
Centropages sp.	250
Microcalanus pusillus	500
Nauplius larva Cop.sp	100
C y c l o p o i d a	
Cyclopoida sp.	6800
H a r p a c t i c o i d a	
Harpacticoida sp	250
M y s i d a c e a	
Mesopodopsis slabberi	300
A m p h i p o i d a	
Amphipoida sp.	150
C i r r i p e d i a	
Cypris larva Cir.sp.	300
5. M o l l u s c a	
L a m e l l i b r a n c h i a t a	
Cardium sp.	150
Modiolus modiolus	400
6. E c t o p r o c t a	
Cyphonautes larva	
Membranipora membranacea	200
7. E g g s	
Evertebrate egg	150

Sediment  $\pm$  1/5 contents.



IV. "Pier" B, Scheveningen, two hours after high water.

Date: 23th December 1970

IV. Hauls	"Pier" B, Scheveningen
1. Place of hauling	"Pier" Scheveningen
2. Situation	+ 300 meter from the beach
3. Weather forecast	Clear night with predominantly light frost. On the 23rd of December sky partly or almost fully clouded with snowshowers. Temperature in the afternoon a little above freezing-point. Wind on the 23rd moderates temporarily strong Northern.
4. Weather conditions while hauling	Still hazy. Sun vaguely skinning through the clouds. Visibility still poor. Sea greysih-Brown near the horizon blue- <del>fg</del> grey. Near place of hauling brown, more transparent than in the morning.
5. Distance of hauling	+ 144 meter by walking
6. Temperature	In the air 2 <sup>0</sup> C In the water 2 <sup>1</sup> / <sub>2</sub> <sup>0</sup> C
7. Wind during hauling	Semaphore: Force: 4m/sec. Dir.: S. "Pier": Force 3m/sec.
8. Lighthours a day	7.44 a day
9. Time of hauling	12.48 - 13.- by walking with the fine net
10. Tides	1st H.W. 10.36
11. Direction of streams	Two hours after H.W.
12. Direction of streams at Scheveningen	
13. Water Levels	a. during hauling - 58cm b. H.W. between hauls + 64cm c. L.W. before hauling - 44cm
14. Chemical analysis	Chloride Phosphate Nitrate

IV. Haul "Pier" B, Scheveningen, two hours after H.W.

Date: 23rd December 1970

## IV. Haul "Pier" B, Scheveningen

1. B a c i l l a r i o p h y c e a e	
Bellarochea malleus	100
Biddulphia aurita	100
" mobiliensis	600
" regia	16250
" sinensis	8500
Coscinoëdiscus concinnus	2500
" granii	10500
" excentricus	6350
Fragilaria sp.	250
Rhizosolenia sp	3000
2. P r o t o z o a	
Foraminifera sp.	100
Noctiluca miliaris	33500
3. C o e l e n t e r a t a	
Phialidium hemisphaerium	200
4. C r u s t a c e a	
C o p e p o d a	
Acartia sp	1350
Centropages sp.	500
Microcalanus pusillus	250
Nauplius larva Cop.sp.	200
C y c l o p o i d a	
Cyclopoida sp.	5200
H a r p a c t i c o i d a	
Harpacticoida sp	500
M y s i d a c e a	
Mesopodopsis slabberi	200
A m p h i p o d a	
Amphipoda sp	50
C i r r i p e d i a	
Cypris larva Cir sp.	250
5. M o l l u s c a	
G a s t r o p o d a	
Young Gastropoda sp(o.325mm)	50
L a m e l l i b r a n c h i a t a	
Mactra corallina(o.2mm)	250
Cardium sp	50
6. E c t o p r o c t a	
Cyphonautes larva	
Membranipora membranacum	100
7. E c h i n o d e r m a t a	
Young Asterias sp(o.2mm)	50

~~garnis~~ *garnis*

Sediment ± 1/12 contents

