

DEPARTMENT OF OCEANOGRAPHY

UNIVERSITY COLLEGE

SWANSEA

CRUISE REPORT

R.R.S. "JOHN MURRAY"

CRUISE 1/1979

5th - 9th JANUARY 1979.

R.R.S. "JOHN MURRAY": CRUISE 1/79.

Duration of Cruise: 14.00hrs. 5th January - 14.00hrs 9th January, 1979.

Locality: The Linear Sandbanks of the Bristol Channel.

Scientific Staff: P.A. Tyler Principal Scientist.

S.E. Shackley

R.J. Evans

G. Farmer

K. Naylor

A. Wilding

S. Williams

Aims: To examine the benthic ecology of the linear sandbanks in the Bristol Channel. The sandbanks to be studied included Helwick, Scarweather, Nash and Culver Sands and the Hugo Bank.

Equipment: Day grab
Sorting table with 1mm mesh sieves

Cruise Narrative: January 5th, 1400 hrs. Sailed Barry. 1530

Started working stations south of Culver Bank. 2230 completed stations south of Culver Bank. Sailed for Helwick Bank.

January 6th 0555. Started working Helwick Bank stations. 1902 completed Helwick Bank and sailed up channel due to freshening S.W. winds.

January 7th 0600. Continued Culver Bank stations. 1515 completed all stations at the Culver Bank. Sailed to Nash Sands. 1730 started working stations south of Nash Sands. 2100 Completed stations south of Nash Sands.

January 8th 0600. Started working stations along

Scarweather Sands. 0845 continued along the Nash Sand crestline. Nash Sand stations completed 1405. 1539 continued to work Scarweather Sands. Completed 0246 9th January.

9th January. Sailed for Barry. Docked at 1400 hrs.

113 stations were worked on or around the linear sandbanks of the Bristol Channel. At each station, five Day grabs were taken. A small sediment sample was retained for grain size analysis and organic carbon content. The remaining sediment was sieved through a 1mm mesh screen and the fauna retained was preserved in 5% seawater formalin.

Results: Sediments - analysis of the sediments suggest the linear sandbanks are composed of well sorted medium-fine sand with very low organic carbon content. The organic carbon content of sediment round the banks was also very low with the exception of the area in the vicinity of the Ogmore River sewage outfall.

Off-bank sediments consisted of sandy gravels and gravelly sands, especially round the Helwick, Scarweather and North Nash Sands, whereas rock or gravel surround the South Nash and Culver Sands.

Fauna - The fauna was very reduced at the stations along the axis of the linear banks. Only five stations contained no fauna, these being the most shallow stations on the Nash and Culver Sands. The dominant species along the crests of the banks was the mysid Gastrosaccus spinifer found in concentrations of up to 38/m². Also found was the polychaete Nephtys cirrosa, and the amphipod Pontocrates arenarius. The fauna is still being identified.

Comments: Equipment - all equipment worked well. However, occasionally the safety pin of the Day grab would jam making it difficult to remove. Also the wire holding the pin was sheared three times by the action of

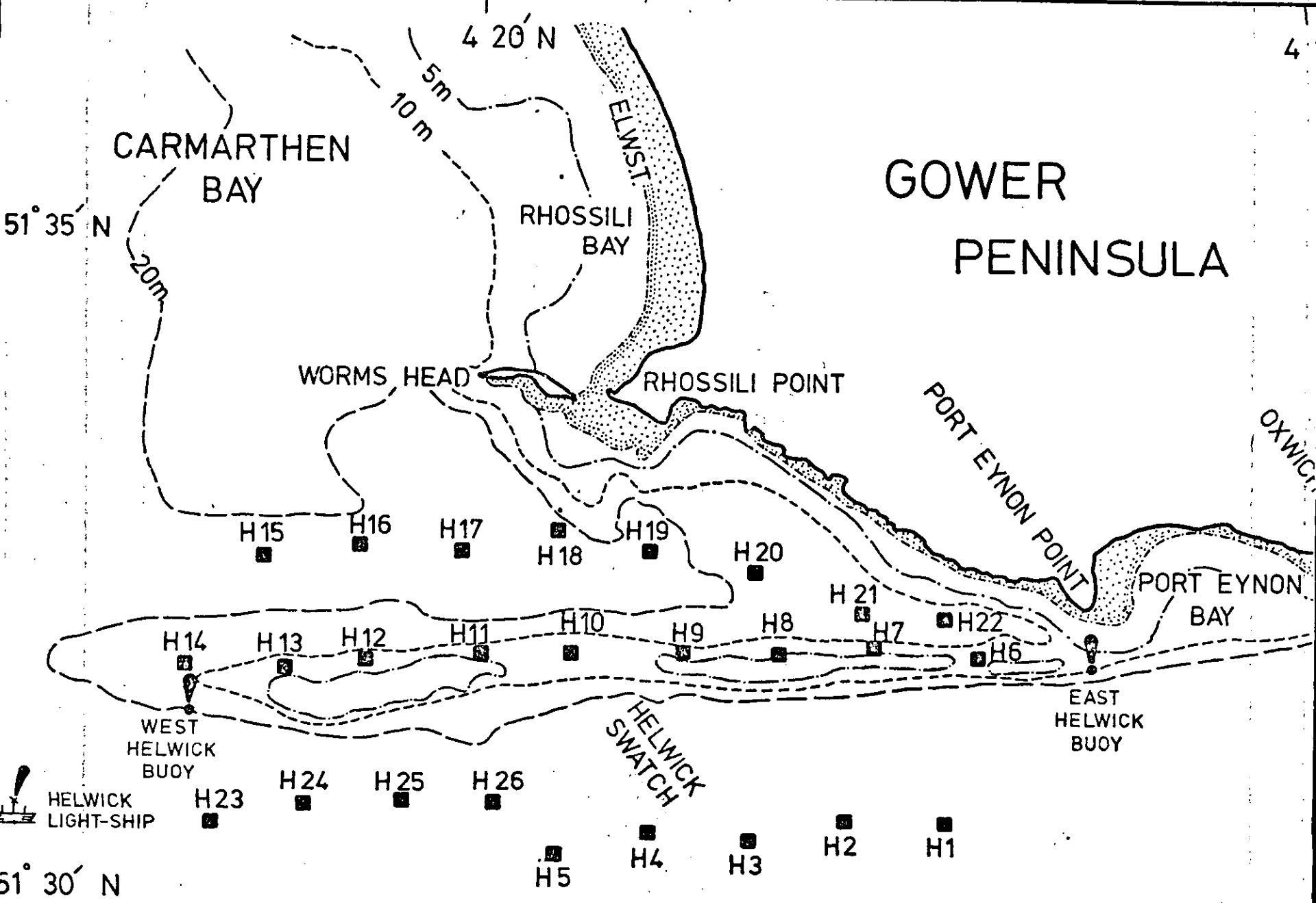
the grab whilst under water.

General - This was an exceptionally successful cruise. We wish to thank Captain P. Warne, the officers and crew of the R.R.S. "John Murray", whose untiring efforts of navigation over the linear sandbanks contributed significantly to the successful completion of the large number of stations. Our thanks are also due to the staff of R.V.B. Barry for the loan of the equipment, and to the Natural Environment Research Council for shiptime aboard the R.R.S. "John Murray"

P.A. Tyler

March 6th, 1979.

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51° 30' N



WEST HELWICK BUOY

EAST HELWICK BUOY

HELWICK SWATCH

CARMARTHEN BAY

RHOSSILI BAY

GOWER PENINSULA

WORMS HEAD

RHOSSILI POINT

PORT EYNON POINT

PORT EYNON BAY

ELWST.

4 20' N

5m
10m

20m

H15

H16

H17

H18

H19

H20

H21

H22

H14

H13

H12

H11

H10

H9

H8

H7

H6

H23

H24

H25

H26

H5

H4

H3

H2

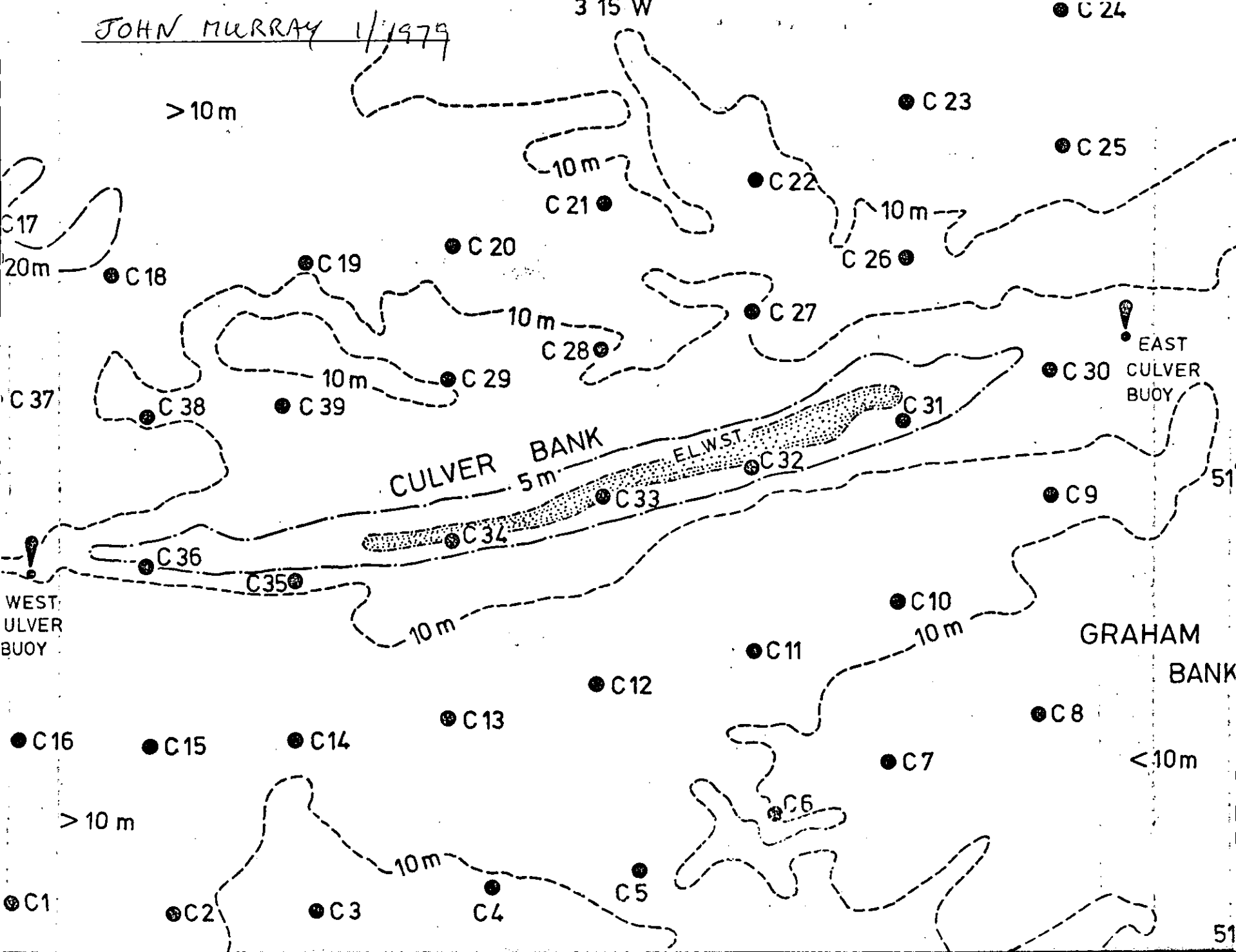
H1

OXWICH

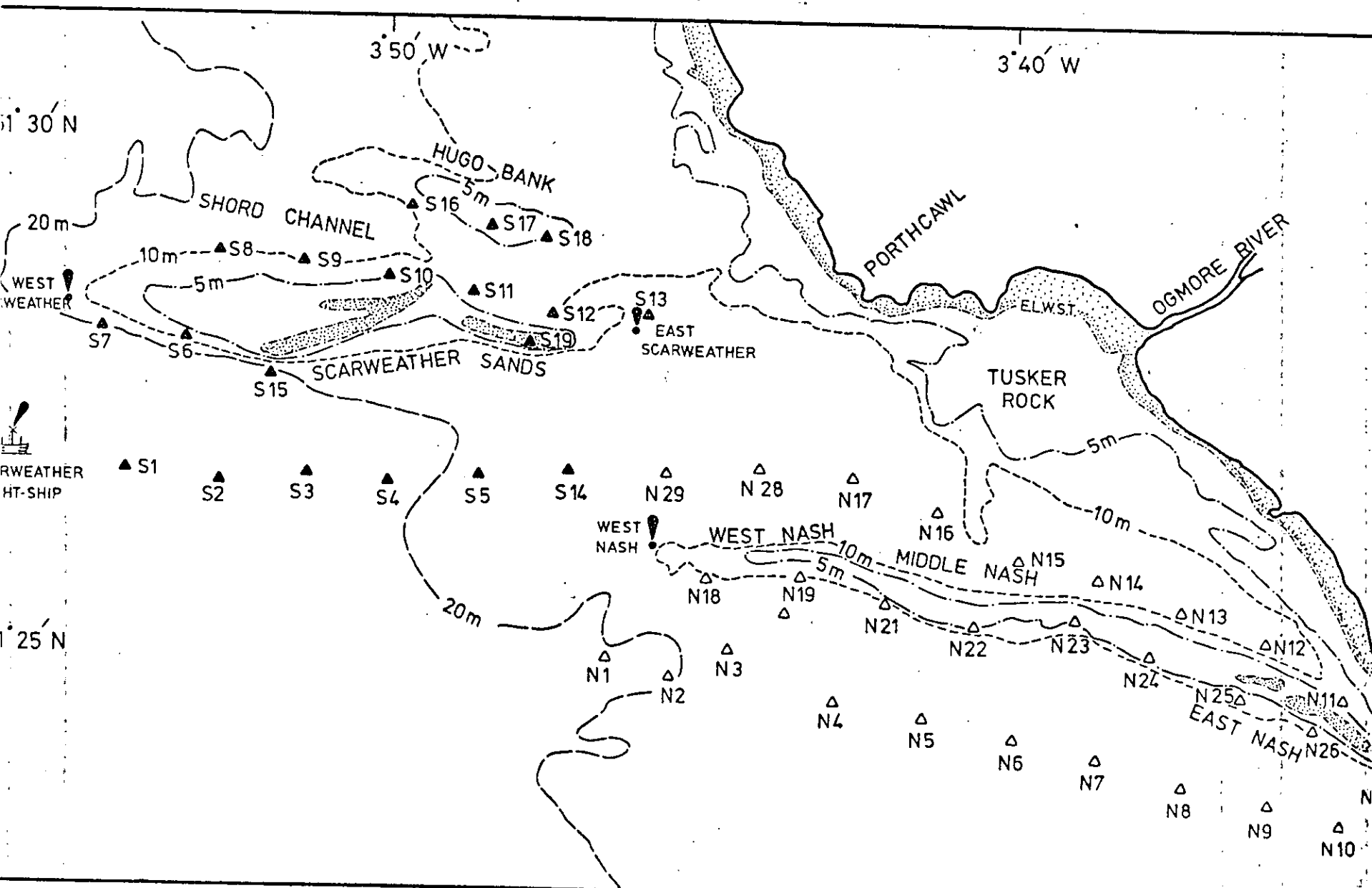
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JOHN MURRAY 1/1979

3 15 W



JOHN MURRAY 1/1979



STATION LIST.

<u>STATION</u>		<u>DECCA</u>
<u>HELWICK BANK</u>	<u>GREEN</u>	<u>PURPLE</u>
H1	E39.10	A61.45
H2	E40.08	A59.92
H3	E41.05	A58.20
H4	E42.01	A56.67
H5	E42.99	A55.17
H6	E39.34	A64.70
H7	E40.36	A63.28
H8	E41.35	A61.60
H9	E42.35	A61.00
H10	E43.35	A58.55
H11	E44.36	A56.95
H12	E45.37	A55.49
H13	E46.37	A54.02
H14	E47.33	A52.62
H15	E47.26	A55.18
H16	E45.91	A56.94
H17	E44.80	A58.39
H18	E43.85	A60.00
H19	E42.90	A61.36
H20	E41.85	A62.60
H21	E40.88	A63.68
H22	E39.81	A64.89
H23	E46.84	A50.54
H24	E45.84	A52.14
H25	E44.75	A53.61
H26	E43.82	A55.05
<u>SCARWEATHER BANK</u>		
S1	D40.05	B51.70
S2	D38.95	B53.92
S3	D37.98	B56.14
S4	D36.96	B58.26

S5	D35.96	B60.85
S6	D40.02	B56.30
S7	D40.96	B54.33
S8	D40.00	B59.06
S9	D38.98	B60.79
S10	D37.95	B62.72
S11	D37.02	B64.56
S12	D35.97	B66.22
S13	D34.93	B68.34
S14	D35.10	B63.16
S15	D38.85	B57.75
S16	D37.90	B64.18
S17	D36.95	B65.86
S18	D36.26	B67.14
S19	D36.00	B64.79

NASH BANK

N1	D33.72	B59.60
N2	D32.95	B60.80
N3	D52.13	B63.00
N4	D31.00	B64.87
N5	D30.00	B66.60
N6	C47.06	B68.20
N7	C46.03	B70.15
N8	C45.00	B72.00
N9	C44.06	B74.06
N10	C43.10	B75.86
N11	C43.89	B79.15
N12	C44.94	B77.53
N13	C45.92	B76.45
N14	C46.92	B74.96
N15	D29.86	B73.26
N16	D30.93	B72.17
N17	D31.94	B70.60
N18	D32.94	B64.10
N19	D31.96	B66.40
N20	D32.07	B65.50

N21	D31.01	B68.31
N22	D30.04	B69.71
N23	C47.06	B73.40
N24	C46.00	B74.00
N25	C45.02	B75.87
N26	C43.98	B77.61
N27	C43.03	B78.26
N28	D33.00	B68.20
N29	D34.00	B65.80

CULVER BANK

RED

PURPLE

C1	C4.06	B52.63
C2	C5.09	B52.58
C3	C6.10	B52.80
C4	C7.10	B53.36
C5	C8.16	B53.90
C6	C8.10	B54.60
C7	C10.16	B55.46
C8	C11.12	B56.57
C9	C11.14	B60.48
C10	C10.23	B58.45
C11	C9.13	B57.68
C12	C8.15	B57.44
C13	C7.18	B56.64
C14	C6.11	B56.39
C15	C5.12	B56.10
C16	C4.13	B55.87
C17	C4.0	B68.00
C18	C5.01	B67.25
C19	C6.05	B67.54
C20	C7.01	B67.85
C21	C8.03	B68.49
C22	C9.02	B68.46
C23	C10.06	B69.81
C24	C10.96	B70.96
C25	C11.04	B68.13
C26	C10.02	B66.50
C27	C8.98	B65.80

C28	C7.98	B65.23
C29	C7.00	B64.85
C30	C10.96	B63.63
C31	C9.85	B62.89
C32	C8.94	B62.34
C33	C7.97	B62.07
C34	C7.06	B61.21
C35	C5.92	B60.38
C36	C4.94	B59.61
C37	C3.95	B64.39
C38	C4.95	B64.14
C39	C5.92	B64.38