

MINISTRY OF AGRICULTURE, FISHERIES AND FOOD  
FISHERIES LABORATORY, LOWESTOFT, SUFFOLK, ENGLAND

1972 RESEARCH VESSEL PROGRAMME

REPORT: RV TELLINA: CRUISE 6

(PROVISIONAL: Not to be quoted without prior reference to the author)

STAFF

R. G. J. Shelton	}	1st half
R. A. A. Blackman		
M. S. Rolfe	}	2nd half
P. A. Hardiman		
A. Nelson, RNSS		(4 days)

DURATION

Left Lowestoft 1000 h 12 June

Arrived Lowestoft 1330 h 25 June

All times are Greenwich Mean Time

LOCALITY

Outer Thames Estuary

AIM

To carry out a detailed survey of the benthos and sediments of the Outer Thames Estuary with particular reference to the sewage sludge dumping ground in the Barrow Deep.

NARRATIVE

Doctors Shelton and Blackman joined TELLINA at Ipswich at 1630 h 12 June and work began off the Sunk Light Vessel at 0708 h 13 June. Eight stations were sampled with the Smith-McIntyre grab, five hauls being made per station. Work was not possible during 14 June due to bad weather but on the three following days 31 further stations were worked. On 17 June bad weather again held up the sampling programme but on the 19th a further nine samples were taken from the Middle Deep. Shelton and Blackman returned to Burnham-on-Crouch on the evening of 19 June and were replaced by Rolfe and Hardiman.

Mr A Nelson, a NERC student with the Royal Naval Scientific Service, joined the boat on 20 June in order to take sediment samples at the stations worked for trace-metal analysis. On that day nine stations were worked in the East Swin but no further sampling was possible for the next three days because of bad weather. Mr Nelson returned to Greenwich on 23 June. On 24 June the remaining 16 stations in the Black and Barrow Deeps were completed and sediment samples taken for Mr Nelson.

TELLINA left Ipswich for Lowestoft at 0400 h 25 June, stopping on the Sizewell Bank to collect a fish sample for Dr Portmann. One two hour tow was made with an 8 fathom otter trawl. TELLINA arrived at the MAFF berth, Lowestoft at 1330 h 25 June.

NB Mr R Norman (deckhand) returned to Lowestoft on 21 June for domestic reasons.

## RESULTS

At each of the 73 stations worked, five samples were taken with a  $1/10 \text{ m}^2$  Smith-McIntyre grab and put together. A sub-sample was taken for sediment and chemical analysis, the remainder being sieved under water through a 0.5 mm mesh and the sievings preserved in formalin for later examination. Where gravel or shell predominated, the samples were washed through both a 2 mm and a 0.5 mm mesh. The fauna was picked out of the 2 mm sievings and added to the preserved 0.5 mm sievings.

Most of the stations were arranged in a series of transects across East Swin, Barrow and Black Deep. In the centre of the deeps, the sediment was mainly of muddy gravel and supported a rich benthos of Psammechinus, Nucula, Abra and Pectinaria, whereas the banks were generally sandy and had only a sparse fauna present (typically Nephtys, Glycera and occasionally Nucula, Cardium, and Macoma).

The benthos was especially rich in the vicinity of the now disused Black Deep dumping ground and peach and cherry stones were found immediately to the northeast of this area.

In the immediate vicinity of the present dumping ground in the Barrow Deep the sediment consisted of fine sand and shell, but thick black anaerobic mud and signs of settled sewage sludge were encountered two miles southwest of the area. Further still to the southwest in the Oaze Deep and the Warp areas, black mud again predominated, but here a rich benthos also occurred.

R G J Shelton  
29 June 1972

SEEN IN DRAFT

WB

INITIALED

AJL

## DISTRIBUTION

### Basic list

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