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

1977 RESEARCH VESSEL PROGRAMME

REPORT: RV CLIONE: CRUISE 11
(PROVISIONAL: Not to be quoted without prior reference to the author)

STAFF

M G Norton
M S Rolfe
J E Thain
A J Murray
L K George

DURATION

Left Lowestoft	1056 h	1 September
Arrived Lowestoft	0700 h	13 September

LOCALITY

Irish Sea, Bristol Channel and South Falls area.

AIMS

1a. To collect sediment samples from Liverpool Bay for microbiological analysis (B1.4, 2.4).

b. To collect fish and benthos from Liverpool Bay for chemical analysis (b1.1, 1.4, 2.1, 2.6).

2a. To collect sediment samples from Site Z (spoil ground) in Liverpool Bay for Benthic, physical, chemical and microbiological analysis (B1.4, 2.4).

b. To collect benthos from Site Z for chemical analysis (B1.4, 2.1, 2.6).

3a. To collect sediment samples from Bristol Channel for microbiological analysis (B1.4, 2.4).

b. To collect fish and benthos from Bristol Channel for chemical analysis (B1.1, 1.4, 2.1, 2.6).

4a. To collect sediment samples from the South Falls area for benthic, physical and chemical analysis (B1.4).

b. To collect fish and benthos from the South Falls area for chemical analysis (B1.1, 1.4, 2.1, 2.6).

NARRATIVE

CLIONE arrived in Liverpool Bay at 0732 h 4 September and worked a grid of 58 grab stations around the North West Light Float dumping ground and towards the mouth of the River Mersey (Aim 1a). At each station a sediment sample was taken for onboard microbiological analysis of E.coli and coliform bacteria. On completing the grid a number of stations were re-visited where benthic infauna could be sampled in sufficient number for chemical analysis (Aim 1b). Eleven grab stations were then worked in the

vicinity of Site Z spoil ground. Sediment samples were taken for physical and chemical analysis and the benthos retained on a 1mm sieve were preserved for later identification back at the laboratory (Aim 2a). Whenever sufficiently abundant, benthic infauna were sampled for chemical analysis for further grabbing (Aim 2b).

Following the grabbing (at 1600 h 5 September) six 15 minute Agassiz trawl tows were made through the area of the first grid, followed by two Granton trawl hauls over ground worked in previous years. Strong south-westerly winds halted work at 0900 h 6 September and CLIONE sheltered in Red Wharf Bay until the wind veered to the north-west. Further trawling in Liverpool Bay was then cancelled and CLIONE proceeded to the Bristol Channel at 1506 h 6 September.

On arrival in the Bristol Channel a grid of 41 grab stations was commenced at 0950 h 7 September (Aim 3a). On the following morning two Granton trawl hauls were made 5 miles to the west of the Scarweather Light Vessel (Aim 3b). After completing the remaining grab stations, CLIONE then anchored near the Bristol Channel dumping ground ($04^{\circ}04'W$, $51^{\circ}24.5'N$) and DRCM observations were made through the water column at half hourly intervals for a 28 hour period.

CLIONE then steamed to the Falls area at 1900 h 9 September. Several hours were lost on passage, south of Penzance, answering a Mayday call from a trawler, but adequate assistance was provided by closer vessels. On arrival at the Falls area (1409 h 11 September) a grid of 21 grab stations were worked. Sediment samples were retained for chemical analysis (Aim 4a). on 12 September five Granton tows were made in the area. Fish and benthos for chemical analysis (Aim 4b) and also live plaice for Mr Scholes (Lowestoft) were collected.

Finally six grab stations were worked in the Middle Deep of the Outer Thames Estuary for benthic infauna for chemical analysis. This completed, CLIONE steamed to Lowestoft and berthed at 0700h 13 September.

RESULTS

All the aims were achieved, but, apart from microbiological studies, results will not be available until laboratory analysis is completed.

The E. coli and coliform surveys were completed in Liverpool Bay and Bristol Channel using techniques developed on earlier surveys. Coliform bacteria counts were consistently lower than those found previously, but high numbers were obtained in the vicinity of a raw sewage outlet to the east of Liverpool Bay. Also, counts of coliforms were observed around the sludge dumping ground tailing off to zero around the west and north of the Bay. A few high counts were observed to the south. In the very varied sediments of the Bristol there was no consistent distribution pattern of either coliforms or E. coli, although counts were elevated in the vicinity of the dumping ground and inshore, near an outfall in Swansea Bay.

M S Rolfe (NIC)
28 September 1977

SEEN IN DRAFT: J R French (Master)
G F Lee (Skipper)

INITIALLED: AJL

DISTRIBUTION:

Basic List	J E Thain
M G Norton	A J Murray
M S Rolfe	L K George