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

1973 RESEARCH VESSEL PROGRAMME

REPORT: R V CLIONE: CRUISE 2

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

STAFF
M S Rolfe
K W Wilson
P M Connor
P A Hardiman (12-17, 21-24 January)
R R Dickson) 17-21 January
B K Clarke)
B F Riches)

DURATION: Left Lowestoft 1500 h 12 January
Arrived Lowestoft 1200 h 24 January

LOCALITY: North Sea

AIMS:

1 To conduct a bottom topography survey off Boulby, N Yorkshire (proposed disposal area for potash waste).

2 To conduct a bottom topography, sediment and benthos survey in the vicinity of the Sunk (ie new dumping grounds for sewage sludge and spoil).

3 To conduct a bottom topography survey in the Barrow Deep.

4 To assess the incidence of lymphocystis and other diseases in flatfish stocks off the Rivers Tyne, Humber and Thames.

NARRATIVE

CLIONE sailed from Lowestoft at 1513 h 12 January and set course northwards. Trawling was commenced off the Humber (Aim 4) the following morning at 0630 h but with little success. In 3 out of the 4 one hour tows made the trawl belly was torn and very few flatfish were taken. CLIONE left the area for the Tyne at 1710 h 13 January and trawling (Aim 4) was commenced at 0630 h next day. Four two hour tows were made and besides dabs and other flatfish good catches of herring and Nephrops were taken. Up to 3 baskets of immature whiting were also taken at each station. At 1720 h CLIONE steamed south to the Tees but strong SE winds delayed the commencement of trawling (Aim 4) in the area until after midday 15 January. Only 2 trawls were made. The belly was torn out on both occasions and few fish were caught.

On 16 January an echo-sounding survey (Aim 1) was made off Boulby, North Yorkshire, as a preliminary to the more detailed sector scanner survey. CLIONE berthed Teesmouth at 0815 h 17 January where the scanner dome was put on. Mr Hardiman went ashore at 0830 h and Dr Dickson and Messrs Clarke and Riches came aboard at 1310 h. CLIONE sailed from Teesmouth at 1345 h and the scanning survey was commenced at 1830 h. Scanning was continued the following day until 1139 h when dense fog prevented any further surveying. CLIONE then anchored over certain chosen areas and the sea bed was observed with underwater T V. This was continued until 0145 h 19 January and included a three hour watch as the ship moved round at the turn of the tide. After completing the final legs

of the scanner survey and laying 2 acoustic targets in the area, CLIONE steamed south into a gathering SE gale which persisted until the ship reached the Harwich area at 2100 h 20 January where she dodged until morning. By then the weather had greatly improved and a short sector scanning run (Aim 3) was made in the Barrow Deep from No 5 buoy to No 9 buoy followed by a return run in deeper water. The new sewage and spoil dumping ground near the Sunk L V was then surveyed (Aim 2) with the scanner before CLIONE steamed to Harwich where she berthed at 1915 h to de-dome. Mr Hardiman rejoined the ship at 1915 h and Dr Dickson and Messrs Clarke and Riches went ashore at 2000 h. CLIONE sailed from Harwich at 0600 h 22 January and completed a grabbing survey of 33 stations on the Sunk spoil ground and the surrounding area. She then proceeded towards the Kentish Knock where the following day was spent in trawling (Aim 4). Seven two hour tows were made and good catches of plaice, sole and dabs were made along with cod, roker and pout.

Having completed the aims of the Cruise, CLIONE returned to Lowestoft where she berthed at 1200 h 24 January.

Results

Aim 1

An area of approximately 4 sq miles was surveyed around the future point of discharge using: 1 the echo sounder, 2 the ARL scanner. The exposed hard ground was clearly distinguishable from the areas of sand. The rough ground was generally in the form of narrow ridges and bars with sand in between. The survey was recorded on film (and video-tape) and polaroid stills taken of all significant bottom features. Television pictures of the different bottom types were recorded on video-tape. It should now be possible to construct an accurate pre-disposal chart of the area so that any smothering of the rocks by the discharged waste can be monitored in the future.

Aim 2

The sector scanner survey of the Sunk dumping ground showed the area to be largely of featureless gravel. In places circular dark patches could be clearly seen; these were probably newly deposited barge-loads of spoil. The survey was temporarily halted at one point to watch a dredger, the BARROW DEEP, jettison its spoil. Clear pictures of the falling spoil were seen and recorded.

Thirty three $\frac{1}{10}$ m^2 samples were taken from the spoil ground and its vicinity using a $\frac{1}{10}$ m^2 Smith-MacIntyre grab. The whole area is composed largely of gravel with an a mixture of sand and mud in places. Little evidence of dumped material was found in the area but at one station outside the spoil ground oily black mud was taken. At each station a small sub-sample was taken for chemical analysis and the remainder washed through a 1 mm sieve. Live fauna was then picked out and preserved in formalin.

Aim 3

Both runs with the sector scanner in the Barrow Deep were in relatively deep water and the eastern banks of the Barrow Sands were not covered. Features of interest, which were recorded on film, included clearly defined areas of sand ripples just off the dumping ground and areas of hard ground in the middle of the Barrow Deep.

Aim 4

The numbers of diseased fish taken in each area was as follows:

	Humber		Tyne		Tees		Thames		Total	
	Total	Diseased	Total	Diseased	Total	Diseased	Total	Diseased	Total	Diseased
Plaice	4	0	36	0	27	1	243	1	310	2
Dab	25	0	1106	39	66	4	310	1	1507	44
Sole	1	0	2	0	10	0	164	2	177	2
Flounder	2	1	0	0	0	0	8	3	10	4
Lemon sole	0	0	12	0	9	0	10	0	31	0
Long rough dab	0	0	185	1	58	1	0	0	243	2

ARL Scanner Details

Dome distance this cruise = 325 miles

Total dome distance = 768 miles: Dome cover split beyond repair

Total distance steamed = 924 miles

M S Rolfe
5.2.73

Seen in draft: A J L
M R S (Master)
A H B (Fishing skipper)

DISTRIBUTION

Basic list

Mr Rolfe
Mr Wilson
Mr Connor
Mr Hardiman
Dr Dickson
Mr Clarke
Mr Riches