

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

1978 RESEARCH VESSEL PROGRAMME

REPORT: RV CORELLA: CRUISE 4

(Provisional: not to be quoted without prior reference to the author)

STAFF:

A R Folkard  
D S Tungate  
P Ayres  
B L Hampson

DURATION:

Left Lowestoft 0940h 10 March  
Arrived Lowestoft 0610h 20 March

All times are Greenwich Mean Time

LOCALITY:

Tyne-Tees area

AIMS:

1. To carry out the first of 4 water quality surveys in the proposed sludge dumping area northeast of the Tyne.
2. To carry out a coliform survey at selected stations in and around the proposed dumping site.
3. To carry out a water quality survey off the Tees to cover the area of Methyl Methacrylate waste dumping.
4. To collect live fish for FRL.

NARRATIVE:

CORELLA sailed from Lowestoft at 0940h 10 March and proceeded to the Tyne area. On passage the pumping system for the Autoanalyser and the HIAC particle counter was tested and a stop was made to test the Day grab.

The sediment survey of the Tyne dumping ground and the surrounding area was commenced at 0600h 11 March and was completed by 1930h. A total of 40 grab stations were sampled. A trawl haul was made about 10 miles off the Tyne and samples of sprats and small gadoids were retained for predation studies.

An underway water quality survey of the surface waters of the Tyne area was begun off Blyth at 0845h 12 March and completed off Seaham at 1915h. The survey extended from close inshore to 10 miles off along lines approximately  $2\frac{1}{2}$  miles apart. During the survey the Autoanalyser was run on line and recorded nitrate, nitrite ammonia and silicate. Samples were taken at  $2\frac{1}{2}$  mile intervals for phosphate and salinity. The HIAC particle counter was run continuously as was the Fluorometer and the environmental monitor.

Between 0930 and 2200h 13 March CORELLA anchored in the Tyne anchorage and over a tidal cycle current measurements were made with a DRCM and at the same time all environmental parameters were monitored as on the surface survey.

A water quality survey of the Tees area was carried out on 14 March following the same procedure as for the Tyne survey. The survey was begun at 0933h to the south of Tees Bay and finished off Seaham at 1553h. The sampling lines extended about 9 miles to seaward at intervals of  $2\frac{1}{2}$  miles. In the evening a trawl haul was made and a further sample of sprats and small gadoids retained.

On the morning of 15 March CORELLA entered North Shields to seek medical attention for a crew member, and remained in port until 0700h 16 March. During this time winds were force 8-9 which would have prevented further work for that period. CORELLA anchored between the Tyne anchorage and the centre of the proposed dumping site and began a tidal cycle of current measurements and environmental parameters at 0830h 16 March. At 1430h in worsening conditions and a forecast wind of NE force 9 and little improvement in the outlook period it was decided to abandon the station and steam for the Humber where the vessel anchored at 0230h.

A tidal cycle station was worked between 0830 and 2130h 17 March in the Hawke Roads. Samples were taken for phosphate and salinity to complement earlier work in the area and the opportunity was taken to test the HIAC counter in extreme water turbidity conditions.

CORELLA weighed anchor at 0700h 18 March and steamed to the Markham's Hole-Botney Gut area and 3 trawl hauls were made in the afternoon and evening. Further hauls were made on Sunday 19 March in the Botney Gut ground.

CORELLA returned to Lowestoft and docked at 0610h 20 March.

#### RESULTS:

1. A complete surface coverage of the Tyne and Tees areas was made and 2 current meter stations worked. Because of the weather it was not possible to attempt any measurements at depth.
2. 40 stations of the NWA grid were sampled with the  $0.1m^2$  Day grab and subsamples of surface sediments were examined by the membrane filtration technique for total and faecal coliforms. Maximum concentrations of total coliforms (220/gm sediment) and faecal coli (65/gm sediment) were identified at the station close to the River Tyne, declining with increasing distance offshore. The results obtained were in good agreement with those from the April 1977 survey and will provide sound background data on the pre-dumping distribution of coliforms and faecal coli in the area.
3. The HIAC particle counter was run extensively throughout the cruise and the test in the Humber was particularly useful in assessing its efficiency in very turbid waters.
4. Samples of sprats and small gadoids caught in the offshore Tyne area were preserved for predation studies.
5. Live plaice, dabs and rays were returned to Lowestoft for Mr Leonard (Hamilton Dock).
6. A number of bags of sprats and small gadoids were frozen for Dr Htun Han.
7. 4 berried crabs were returned live for Mr Nichols.

SEEN IN DRAFT: J E W Balfour (Master)  
R C Newrick (Fishing Skipper)

A R Folkard  
28 March 1978

INITIALLED: AJL

DISTRIBUTION: Basic list +  
A R Folkard  
D S Tungate  
P A Ayres  
B L Hampson

2°

1°

0°

1°

2°

58°

CORELLA 4/1978

57°

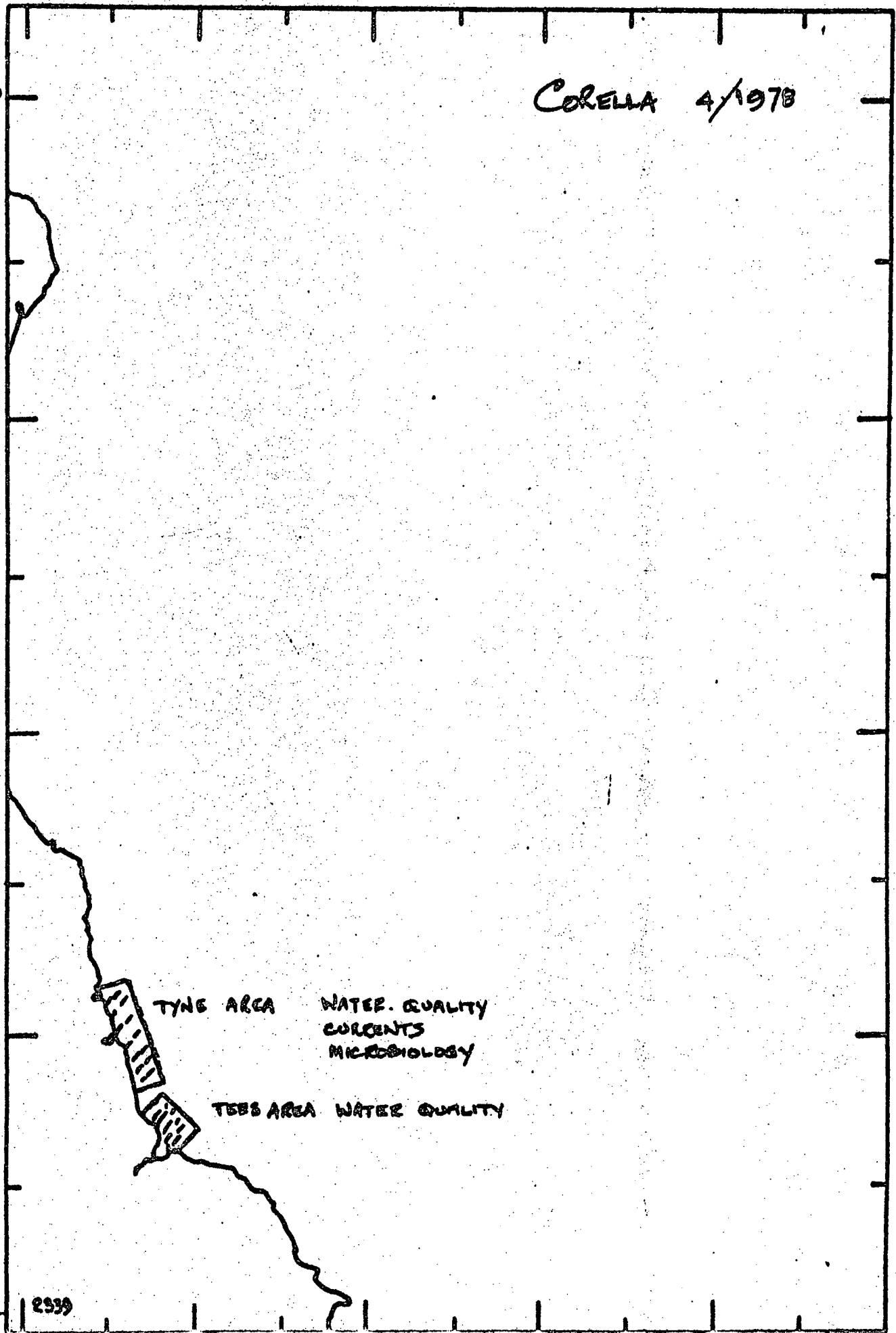
56°

55°

TYNE AREA WATER QUALITY  
CURRENTS  
MICROBIOLOGY

TEES AREA WATER QUALITY

2539



CORELLA 4/1978

● GRAB STATIONS FOR  
MICROBIOLOGY



NEW DUMPING  
GROUND

