

Dr Bate

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

1975 RESEARCH VESSEL PROGRAMME

REPORT: RV CORELLA: CRUISE 7

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

STAFF:

P G W Jones  
A R Folkard  
B L Hampson  
T C Doddington  
A Davis (Institute of Geological Sciences)

DURATION

Left Lowestoft 1730h 6 May

Arrived Lowestoft 0915h 15 May

All times are Greenwich Mean Time

LOCALITY

Southern North Sea, Humber Estuary and off Flamborough Head.

AIMS

1. To survey the distribution of selected dissolved and particulate trace metals (cadmium, copper, nickel and zinc) in the water of the southern North Sea, paying particular attention to techniques for sampling the particulate phase.
2. To survey the distribution of selected trace metals in the water and surface sediments over tidal cycles at selected localities in the estuary of the Humber.
3. To investigate the analysis of dissolved ammonia in a variety of sea water types.
4. To service Jonsis 1 and 2 current meter rigs.
5. To collect sea water samples for the analysis of radioactive caesium by the Fisheries Radiobiology Laboratory.

NARRATIVE

After departing from Lowestoft, CORELLA proceeded to the Humber Estuary and the following morning commenced sampling over 13-hour tidal cycles at selected localities. Stations were worked off Grimsby (0530h-1830h 7 May), off Immingham (1930h 7 May-0930h 8 May), off Hull (1030h-2330h 8 May) and at the Bull anchorage (0330h-1630h 9 May). The vessel then worked some chemical sampling stations to the north east of Spurn Head whilst proceeding towards the current meter stations off Flamborough Head. Jonsis 1 and 2 current

meter rigs were serviced between 0730h and 1530h 10 May and the chemical sampling programme was resumed at 1630h the same day. This grid was worked without interruption until 0007h 15 May when the last sample was collected off North Foreland. The vessel then returned to Lowestoft docking at 0915h the same day.

## RESULTS

Filtered sea water and suspended particulate samples were collected for trace metal analysis over the grid shown on the attached chart. Water samples were filtered through 0.22  $\mu$ m Millipore membranes and particulate material was collected on similar membranes. Duplicate water samples were taken at selected stations for an intercalibration of analytical techniques with the Institute of Oceanographic Sciences. Some water samples were filtered through 0.20  $\mu$ m Nuclepore membranes for comparison with the Millipore membranes. All samples were stored deep frozen for analysis ashore.

Surface sediment samples were collected by dredge at many water sampling stations in the Humber and also at selected localities off the English coast. They were deep frozen and will be analysed for trace metals by the Institute of Geological Sciences.

Ammonia was analysed in filtered water samples at selected stations. Levels were generally low in offshore areas, particularly where high concentrations of phytoplankton occurred. The concentration of ammonia was higher in coastal and estuarine regions. The method of analysis gave satisfactory reproductibility, but a full statistical evaluation of the technique will follow.

Both Plessey current meters were recovered and replaced from the Jonsis 1 rig. At the second Jonsis station, the sub surface buoy (no22) and the two Plessey current meters (no. 446 and 488) were missing. The surface buoy was displaced by a mile from its original position. The station was re-laid.

Surface water samples of 25l capacity were collected at selected localities on the trace metal grid in the eastern part of the northern North Sea for the analysis of radioactive caesium.

A phytoplankton sample was collected off Lowestoft for Dr Dodge of Birkbeck College, London.

SEEN IN DRAFT SWB MJ

INITIALLED AJL

## DISTRIBUTION

Basic List +

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21 May 1975