

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

MR RATE  
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Miss Corrigan

1972 RESEARCH VESSEL PROGRAMME

REPORT: R V CORELLA: CRUISE 7/72

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

STAFF

D Harding  
D S Tungate  
J H Nichols  
Mrs A Houghton  
Mrs J Howlett

DURATION

Left Lowestoft 0930 h, 26 April

Arrived Lowestoft 0600 h, 4 May

All times are Greenwich Mean Time

LOCALITY

North Sea

AIMS

1. Larval survey and echo survey to determine centres of concentration of larvae, juvenile and adult fish.
2. Fishing survey for small and young fish
  - (a) to estimate density
  - (b) to examine stomach contents.
3. Vertical distribution studies on larval fish and other plankters.
4. Collections of Sagitta and Pleurobrachia.
5. Comparisons of plankton sampling gear
  - (a) 20" Lowestoft samplers vs Dutch 20" sampler
  - (b) 20" Lowestoft sampler vs 20" unencased sampler
  - (c) 20" unencased sampler, 12" sampler at 2 and 5 knots.
6. Estimates of chlorophyll
  - (a) using Turner fluorometer at sea
  - (b) collection of samples for analysis by spectrophotometer.
7. Hydrographic measurements of surface temperature and salinity.

NARRATIVE

CORELLA sailed from Lowestoft at 0930 h, 26 April. The MS44 echo sounder, fluorometer and temperature recorders were started once outside Corton Roads and the survey commenced. The plankton samplers were calibrated in the afternoon and work started on the plankton grid

at 2300 h. To save time the samplers to be compared were towed on the grid; this work was completed at 2100 h, 28 April. The changing net sampler was then used at 54°07'30"N 04°07'30"E between 0108 h and 0910 h, 29 April when sampling had to be discontinued because of bad weather and CORELLA dodged on station until 0840 h, 30 April. At 0840 h sampling recommenced and continued until 1010 h, 1 May, so completing the collections from different layers with the changing net sampler. Attempts were then made to collect small fish from mid-water with the large Boothbay net but only after a long delay since the bridles provided were much too long. Later the ship was rigged for beam trawling as a series of 8 hauls made between 1800 h, 1 May and 2100 h, 2 May at 54°09'N 04°09'E and 53°25'N 04°03'E. The 800 Engel mid-water trawl was then rigged and used at the same two positions between 0700 h, 3 May and 2100 h, 4 May. CORELLA then steamed overnight for IJmuiden and docked at 1000 h, 5 May. This day was spent in IJmuiden consulting with the Dutch laboratory and exchanging samples and equipment. The electronics engineers visited the ship to examine the Cambridge recorders which had broken down and since they could not repair either, kindly loaned us a Japanese model to complete the cruise. They also spent an hour or so looking at the CORELLA's instrumentation and were entertained to lunch on board. Mr Nichols accompanied Dr Niels Daan to the main laboratory to give assistance with problems of identification of fish eggs and larvae.

CORELLA sailed from IJmuiden at 2300 h, 5 May and steamed south-west to the Schelde Estuary monitoring chlorophyll, then north-west to the Brown Ridges where collections of live plankton were made for Mrs Thompson. The ship continued westward to Smiths Knoll where further collections of plankton were made. Finally, work with the fluorometer was concluded after a short steam over the Norfolk Banks to measure the chlorophyll levels there, and the CORELLA anchored for the night in Corton Roads.

The cruise was concluded when CORELLA tied up at the MAFF Quay, Lowestoft at 0600 h, 7 May.

## RESULTS

All the objectives set for this cruise were achieved; only the Boothbay net failed to give suitable samples.

Fluorometer readings taken continuously on this cruise showed very low readings for chlorophyll. Filtered samples of water were made for spectrophotometric analysis at Lowestoft and the fluorescence of acetate extracts of these samples was measured at sea. Analysis of phytoplankton present at ten sampling stations showed the most common genera to be Chaetoceros, Geratium, Coscinodiscus, Rhizosolenia and Navicula.

The MS44 with scale expander proved a useful tool especially when used with the headline transducer on the 800 Engel mid-water trawl. With the TX setting marker located on the footrope trace and a band setting of 3 inches equal to 10 metres, fish traces entering the net were expanded for ease of counting at a later date. The gain setting on the sounder had to be set fairly high at No 6 to pick up fish traces.

All of the fish caught in the beam and mid-water trawls were counted and samples measured and preserved for analysis on return to Lowestoft. In addition a large quantity of fish was packed in large polythene bags and frozen for Dr Purdom and samples of sprat, herring and anchovy preserved for Pelagic Section. A single thornback ray was collected and preserved for Mr Holden. Live samples of planktonic copepods were collected for Mrs Thompson.

D Harding  
24.5.72

SEEN IN DRAFT: W Craig (master)

INITIALLED: AJL

DISTRIBUTION

Basic list

Mr Harding  
Mr Tungate  
Mr Nichols  
Mrs A Houghton  
Mrs J Howlett

