

MR BATE

MINISTRY OF AGRICULTURE FISHERIES AND FOOD
FISHERIES LABORATORY LOWESTOFT SUFFOLK ENGLAND

1974 RESEARCH VESSEL PROGRAMME

REPORT: R V CORELLA: CRUISE 1 (b)

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

STAFF

- P G W Jones
- A R Folkard
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DURATION

Left Lowestoft 1030 h 11 January
 Arrived Lowestoft 1615 h 17 January
 All times are Greenwich Mean Time

LOCALITY

Southern North Sea

AIMS

1. To test a variety of techniques for sampling trace metals in sea water on selected sections of the standard North Sea metal grid.
2. To collect samples for an intercalibration of techniques for analysing trace metals in sea water between laboratories in Belgium, the Netherlands and the UK.
3. To continue the seagoing trials of the Technicon Auto Analyser for measuring nutrient salts in sea water.

NARRATIVE

After departing from Lowestoft on 11 January, CORELLA sailed southwards, arriving in Margate Roads at 2032 h. The metal sampling gear was tested and the vessel anchored overnight in poor weather conditions.

The Thames Estuary—Hook of Holland trace metal sampling section was started at 1005 h 12 January and completed at 1100 h the following day. The vessel then proceeded northwards with the intention of working the eastern part of the Texel-Cromer trace metal section. However, after completion of the first station work was abandoned at 1630 h owing to deteriorating weather conditions and the vessel set course for Den Helder docking at 1838 h.

During the morning of 14 January, trace metal samples were exchanged with the Texel laboratory of the Netherlands Institute of Sea Research. Scientists from the Netherlands Institute for Sewage Treatment at the Hague visited the vessel to discuss our techniques of trace metal sampling and analysis.

CORELLA sailed from Den Helder at 1418 h 14 January and at 1604 h commenced a grid of nutrient salt sampling stations off the Netherlands and Belgium coasts. This survey was worked in rather poor weather conditions with SW winds of mainly force 7 throughout the period and was completed at 1010 h 16 January. The vessel then visited Zeebrugge, docking at 1145 h, to deliver metal intercalibration samples to the Free University of Brussels via a representative of the Belgian Navy.

CORELLA departed at 1622 h the same day with the intention of proceeding to the Thames Estuary for further trace metal work. However, a severe storm arrived shortly after the vessel departed and CORELLA steamed slowly in a NW direction with winds of up to force 10. By the morning of 17 January the weather had improved somewhat but it was apparent that there was insufficient time to work another trace metal section, the vessel therefore set course for Lowestoft docking at 1615 h the same day.

RESULTS

Surface water samples collected for metal analysis were filtered through millipore membranes of pore diameters 0.22, 0.45 and 0.80 μ m in order to ascertain the effect of pore size on the apparent dissolved metal content of the water.

Near bottom water samples were collected by 30 litre Niskin bottles and by an all plastic pump system in order to compare the two sampling techniques.

All samples were returned to the shore laboratory deep frozen for analysis by Atomic absorption spectrometry.

2. Two surface samples were collected for metal intercalibration, one in the central southern North Sea and the other off the Hook of Holland. The water was filtered through 0.22 μ m Millipore membranes. Each sample was subdivided such that the Texel laboratory, the Belgium laboratories, Hydrography Section and the Fisheries, Radiobiology Laboratory each received five samples for analysis. The Texel laboratory also provided samples for analysis by the Belgium and Lowestoft laboratories.

3. Faults in two colorimeters somewhat hampered tests on the Technicon Auto Analyser for measuring nutrient salts in seawater. However, using surface samples collected in the eastern portion of the southern North Sea, satisfactory results were obtained for silicate, nitrate and nitrite. Samples for the determination of phosphate and ammonia were returned to the laboratory for analysis.

4. MISCELLANEOUS Tests were made of the Stewardson salinometer over the nutrient salt survey grid. A surface phyto plankton sample was collected at a station approximately ten miles east of Lowestoft for Dr Dodge of Birkbeck College, London University.

SEEN IN DRAFT J E M E T B

INITIALLED A J L

DISTRIBUTION

Basic List P G W Jones
A R Folkard
T C Döddlington
J A Henderson

P G W Jones

29 January 1974

