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

1972 RESEARCH VESSEL PROGRAMME

REPORT: RV CORELLA: CRUISE 8

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

STAFF

J W R Dutton  
A K Steele  
C W Baker  
R J Read  
D C Denoon

DURATION

Left Lowestoft 1024 h 15 May

Arrived Lowestoft 1000 h 30 May

All times are Greenwich Mean Time

LOCALITY

Irish Sea

AIMS

1. To continue the examination of the budget of artificial radionuclides in the Irish Sea.
2. To collect seawater samples at selected stations for trace element analysis.
3. To collect seawater samples to determine caesium-137 concentrations in the North Sea, the English Channel and the North-western approaches to the Irish Sea.
4. Total gamma counting above the sea surface to discriminate between background and discharge situations.
5. To carry out a radiological survey of the Clyde area.
6. To collect fish, plankton and other samples for the IDOE programme and on behalf of Dr J H Steele, DAFS.
7. To collect seawater samples in the North Sea on behalf of Dr Kautsky, DHI, to assist their North Sea radiocaesium budget studies.

NARRATIVE

CORELLA left Lowestoft on the morning tide of 15 May and proceeded southabout to the Irish Sea, working 10 stations en route. The St George's Channel was reached at 1000 h 18 May and the planned grid of 62 Irish Sea stations was completed by 0630 h 23 May. Plaice and benthos samples were also obtained during 2 trawls, the first at the usual fishing position near the Windscale effluent discharge point, and the second in the vicinity of the King William Bank.

In worsening weather, CORELLA then proceeded to the Clyde, working 3 further stations en route, and commenced the radiological survey in Loch Long and Loch Goil; this survey, involving core and grab sampling at 8 stations, was completed by 2200 h 23 May. A plankton sample was also collected for Dr G Topping (DAFS, Aberdeen) for trace metal analysis.

In the hope that the weather in the north-western approaches to the Irish Sea would improve later, the Holy Loch radiological survey was carried out during 24 May. Core and grab samples were obtained from 21 stations, and the FRL submersible gamma-probe was used successfully during this time.

After taking on water at Greenock during the morning of 25 May, the radiological survey was continued down the Clyde, but force 9 winds forced CORELLA to return and anchor in Rothsay Bay overnight. The following morning, in spite of continued bad weather, the sampling programme in the north-western approaches to the Irish Sea was carried out, albeit on a reduced scale. The Minch sampling stations were resumed west of Skye, but shortage of time forced a further curtailment and only surface water sampling was carried out at the 10 stations between Cape Wrath and Lowestoft.

CORELLA docked at Lowestoft at 1000 h.

#### RESULTS

1. The full sampling survey of the Irish Sea was completed for radionuclide analysis.
2. 76 stations were sampled for selected trace metal analysis.
3. Seawater samples were collected from the English Channel, the North Sea and part of the north-western approaches to the Irish Sea for radiocaesium analysis.
4. The Clyde radiological survey was completed.
5. The following samples were collected for scientists or other laboratories:-
  - fish for Dr J Portmann (Burnham)
  - plankton for Dr G Topping (DAFS) one sampling only
  - water for Dr H Kautsky (DHI).
6. A total of 242 samples of seawater were processed for radiocaesium removal by the use of selective ion exchange resins - most of them for direct assay in the laboratory. The shipboard use of ammonium molybdophosphate/silica gel as a selective absorbant for the lower level seawater proved successful, and the automatic pump systems worked very satisfactorily.
7. A better method for dispensing nitric and hydrochloric acids should be developed before the next cruise.

J W R Dutton  
2 June 1972

SEEN IN DRAFT: W Craig (Master)  
E T Bridge (Fishing Skipper)

INITIALLED: AJL

DISTRIBUTION: (see over)

DISTRIBUTION

Basic List  
A K Steele  
C W Baker  
R J Read  
D C Denoon  
Dr J H Steele, DAFS  
Dr G Topping, DAFS  
H Howells, UKAEA Windscale  
Dr E A B Birse, SDD Edinburgh  
Chairman, Naval Nuclear Technical Safety Panel (MOD)  
Clyde Submarine Base (f.a.o. Sub-Lt Jolly)  
Queen's Harbourmaster (Clyde) (MOD)  
Dr H Kautsky, DHI  
J W R Dutton