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1SR86

FRV "Scotia"

Cruise 1/86

REPORT

3-23 January 1986

Personnel

J H A Martin	PSO
I M Davies	PSO (Part 2, 14-23 January only)
J M Pirie	SSO (Part 2 only)
E W Henderson	SSO (Part 1, 3-13 January only)
P W Balls	SSO
R Payne	HSO
D C Moore	HSO (Part 2 only)
R D Adams	SO
G Slesser	SO (Part 1 only)
J C McKie	SO
Miss G Clark	SO (Part 2 only)
S Murray	(NCC) (Part 1 only)
N MacDougall	(Visitor) (Part 2 only)

Objectives

Part 1

1 To work hydrographic sections in the Faroe-Shetland Channel and obtain particulate samples for heavy metal analysis.

2 To lay two current meters near Sule Skerry and to do associated hydrography.

3 To do a hydrographic survey of the Clyde Basin.

4 To obtain radio caesium samples at selected sites.

Part 2

1 To conduct a hydrographic survey of the Clyde Basin and the North Channel.

2 To uplift and replace current meter moorings in the Clyde.

3 To collect samples of sea water, sediment and benthos from the Garroch Head sludge dumping ground and adjacent areas for metal analyses.

4 To collect fish samples from selected parts of the Clyde Basin for metal analyses.

Narrative

"Scotia" sailed on the evening of 3 January. With winds of gale force blowing for three quarters of the time during Part 1, the objectives of that part of the cruise were not all achieved. However the two moorings were laid near Sule Skerry, 58 hydro stations were worked in the north west shelf area and the radio caesium samples collected at four stations. Winds up to force 11-12 prevented work in the Faroe-Shetland Channel and west of Shetland Isles. It was also impossible to do the

hydrographic survey in the Clyde except for eight stations before "Scotia" docked in Greenock on 13 January. "Scotia" was delayed for 24 hours due to the weather but sailed on 15 January when hydrographic work was resumed.

Five of the six moorings in the Clyde were uplifted, serviced and replaced. It was decided that the remaining mooring belonging to the Dunstaffnage Laboratory would be recovered by them. Some difficulty was experienced in recovering buoys safely that lacked a lifting strop. The complete hydrographic survey was worked along with chemical work. The latter consisted of an investigation of the chemical characteristics of the coastal inflow of water on the eastern side of the basin and at Garroch Head, particularly mercury and other trace elements.

Fish and benthic infauna from Garroch Head and fish from south east of Arran were processed for chemical analysis. Benthic sampling and a Craib core survey with redox potential measurements were conducted in various parts of the Clyde Basin including the disused and current sewage disposal grounds along with a widespread sediment survey to provide base line chemical information and comparative studies with contaminated areas. Cores were also collected and processed under an inert atmosphere to investigate analytical and sample storage procedures.

The work in the Clyde was terminated in the morning of 20 January due to adverse and deteriorating weather and passage was made to the North Sea where the Jonsis Line was attempted on the evening of 21 January. The first seven hydrographic and chemical stations were worked before sea conditions became too bad.

"Scotia" docked in Aberdeen during the late evening of 22 January.

Results

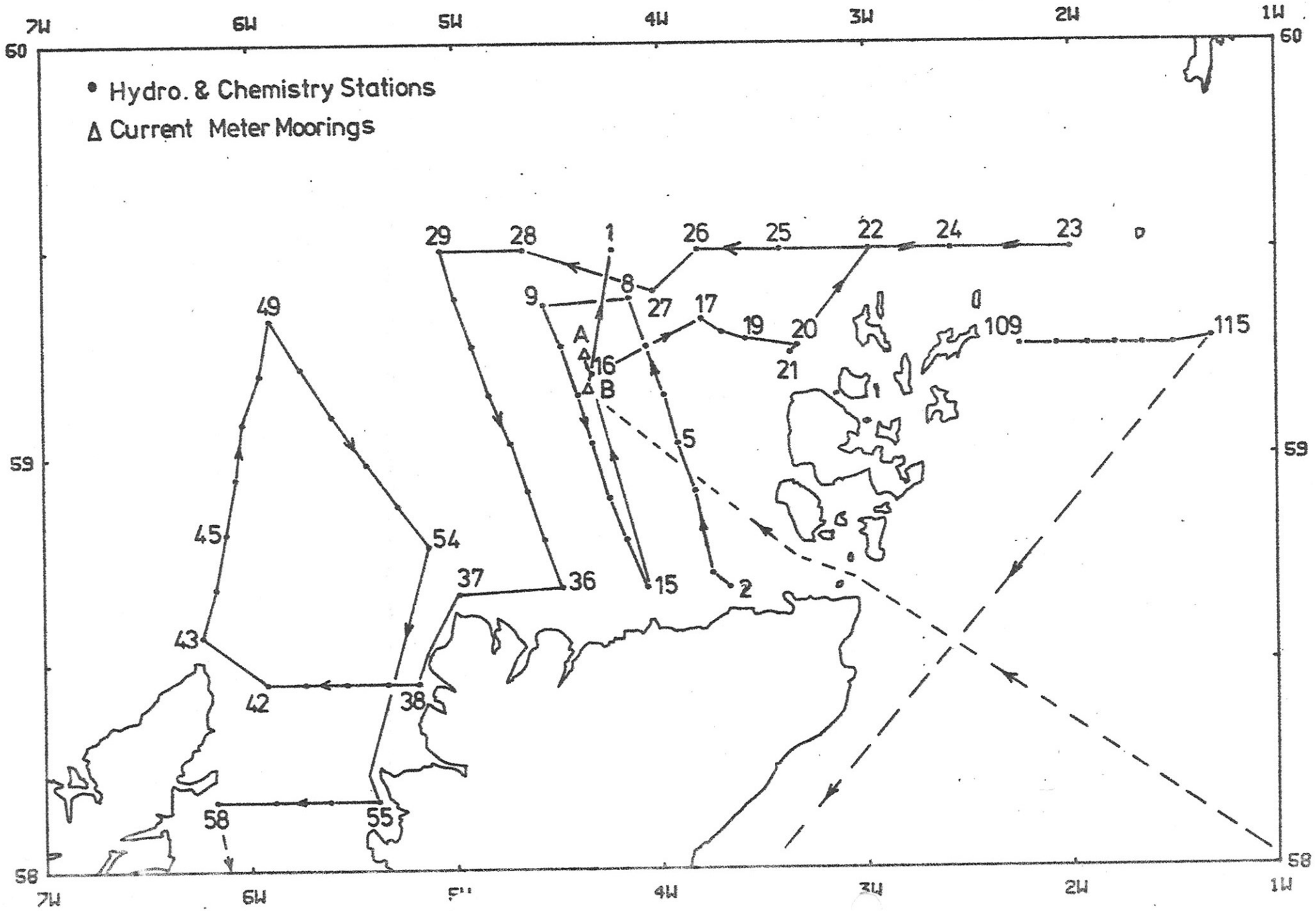
The survey in the Clyde was particularly interesting. The hydrographic front that always exists between the Clyde estuarine waters and the North Channel water was much further into the Clyde than normal and was bisected by Ailsa Craig. The distribtuion of salinity and chemical parameters of nitrate and phosphate supported by current meter results indicated that there was a surface flow across the front associated with a clockwise eddy around Ailsa Craig.

The survey north of Scotland, again with confirmation of current meter results, showed that the Fair Isle current north of Sule Skerry was bathymetrically guided in winter as it is in summer.

J H A Martin
11 February 1987

Seen in draft: W Findlay

F.R.S. SCOTIA CRUISE 1 3 - 23 JANUARY 1986



F.R.S.SCOTIA CRUISE 1 3 - 23 JANUARY 1986 - Station numbers