Indexed ✓

R1/12

FRV "Scotia" 13SR84

Cruise 13/84

LD

8-23 November 1984

REPORT

OBJECTIVES

1. Hydrographic work in the Faroe-Shetland Channel.

2. Trace metal analysis and hydrographic sampling to the west of Scotland, in the Firth of Clyde and in the Irish Sea.

3. Ratio-caesium sampling at 4 standard positions.

NARRATIVE

The "Scotia" sailed late afternoon on 8 November, work commenced in the Faroe-Shetland Channel the next day and continued until the early evening of 11 November when adverse weather forced the temporary abandonment of this work and the ship sailed for the Minches to commence trace metal sampling. Very good weather enabled this work to be completed early and Scotia sailed north on the completion of 6 hydrographic sections in the Irish Sea, North Channel and Clyde as well as other discrete sampling for trace metals on passage. Work in the Faroe-Shetland Channel was resumed in the early hours of 19 November and finished the same day.

With the programme completed opportunity was taken to do a survey west of Shetland followed by the Jonsis line. However the weather deteriorated on completion of half of the Jonsis line and with storm force south easterly winds passage was made to Aberdeen where the "Scotia" docked at 11.00 on 22 November.

Radio-caesium samples were collected at Aberdeen, Fair Isle and Cape Wrath.

RESULTS

The hydrographic work awaits the completion of salinity determinations before analysis. However the thermo salinograph showed clearly the presence of a considerable amount of low salinity water west of Shetland.

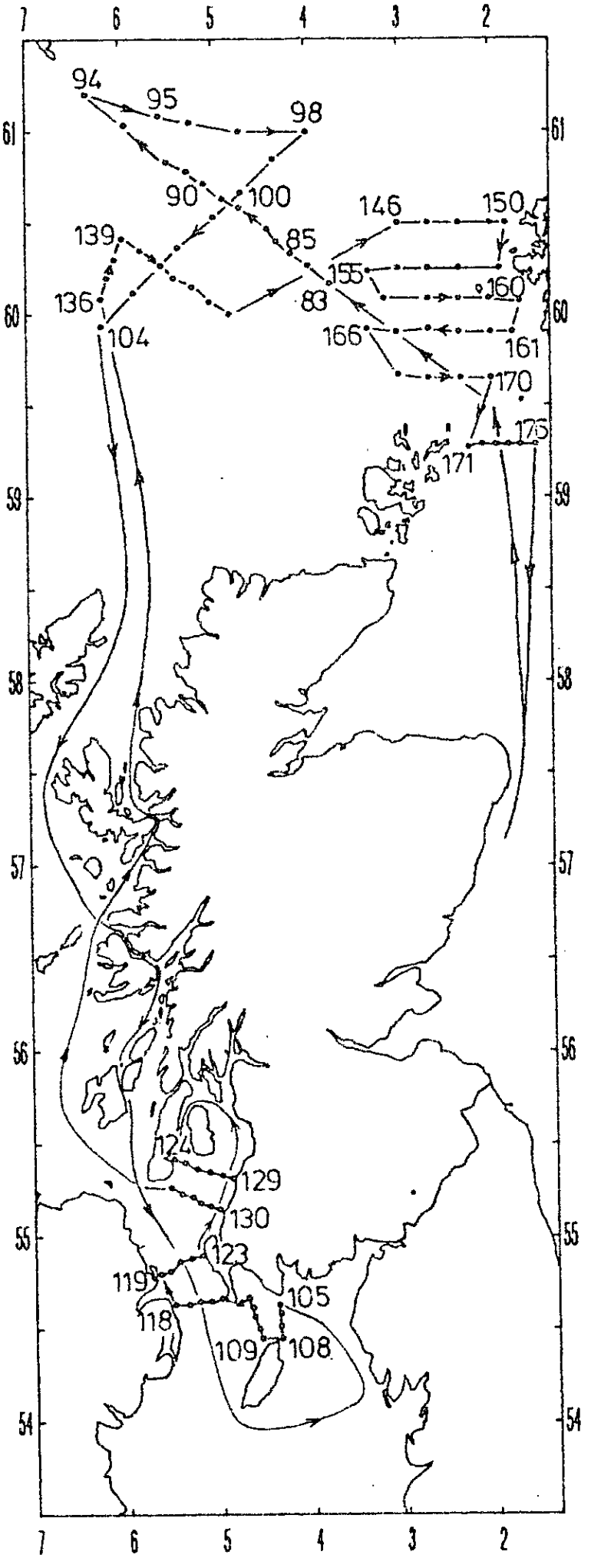
Trace metals analysis was carried out on board on 120 surface and subsurface samples of dissolved cadmium, lead and copper collected between the Butt of Lewis and the Isle of Man. An increase in the concentration of all 3 were observed as the ship moved south. Cadmium up from 0.01 to 0.03 $\mu g\ dm^{-3}$, lead 0.01 to 0.03 $\mu g\ dm^{-3}$ and Copper 0.20 to 0.50 $\mu g\ dm^{-3}$. A narrow band of heavily contaminated water (Pb, Cd ca 0.05 $\mu g\ dm^{-3}$, Cu ca 1.0 $\mu g\ dm^{-3}$) was identified along the Cumbrian and Galloway coasts. Strong tidal mixing in the North Channel appears to disperse this contamination and a patchy distribution results.

The analysis of suspended particulate material will be carried out in the Laboratory.

J H A Martin

4 February 1985

Seen in draft: J W Gillon



F.R.S. SCOTIA
CRUISE 13 1984
8–21 NOV. 1984

o Hyro. & Chemistry Stations