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## CRUISE REPORT

F.R.S. "SCOTIA"

25th March - 8th April 1955

Owing to bad weather "Scotia" was unable to leave Aberdeen till Friday March 25th. The first station, west of the Pentland Firth was reached at 5.a.m. on the 26th March. In the succeeding 5 days all stations to the west of Orkney and Shetland were completed before "Scotia" docked in Lerwick on April 1st to take on water and disburse pay to the crew. An attempt was made to resume work on the 2nd April, but after one station on the 61°01'N line had been worked, it was deemed prudent on account of deteriorating weather, to seek shelter in Burra Firth for at least 12 hours. Improved conditions enabled a resumption of work to be made on 3rd April and 30 more stations in the North Sea were completed by 7th April. At 5.a.m. on this day, owing to the serious illness of a member of the crew, further work was abandoned and passage was made for Aberdeen where "Scotia" docked at 3.a.m. on 8th April 1955.

Hydrography

Appended charts depict surface temperatures, free phosphate and dissolved oxygen values. The 8°C isotherm running slightly within the 100 fm. line to the west of Orkney, marks the south east boundary of the main Atlantic Drift. The highest temperature recorded (8.87°C) was at 58°46'N 8°35'W. In this region to the west of Orkney there was little difference between surface and bottom temperatures. In the Norwegian deeps, cold water from the surface down to a depth of 30 m, and ranging in temperature from 3.6° - 4.3°C, overlay warmer water of 6.5° - 7.5°C. Over the remainder of the North Sea in the area sampled, bottom temperatures were from 0.5° to 1.3°C lower than at the surface.

The densest hauls of phytoplankton were obtained from stations in the Norwegian deeps where the associated surface phosphate showed its greatest depletion; values of less than 0.2  $\mu$ gm - at.  $PO_4$  -P/L were recorded. Over the remaining area little depletion of nutrient in the surface layers had taken place. Dissolved oxygen values ranging from 6.12 to 7.62 cc's/L were found associated with warmer and colder water respectively.

Chlorophyll samples were collected from 10 stations while samples for Vitamin B<sub>12</sub> were obtained from 2 stations only.

Drift bottles in batches of 5 were liberated from 28 stations.

Plankton

An aggregate of 190 hauls was made with the 1 m silks, Hensen and Standard nets. Of these, 75 were oblique hauls and 48 were with tow nets in groups of 3. In addition a further 48 hauls were made with the plankton indicator on behalf of the Scottish Marine Biological Association, Edinburgh.

Collections were normal for this time of the year. Calanus was found most abundantly off the north coast of Shetland and near the Norwegian coast.

Euphausiids were also present in these areas. Siphonophores appeared in a few collections: e.g., Galetta australis to the west of Shetland and Physophora Sp. between Shetland and Norway.

Clupeoid larvae and fish eggs were very numerous from the north coast of Scotland to the west of Shetland. A sample containing Clupeoid larvae was recorded in statistical square J19a, off the Norwegian coast.

#### Echosounding

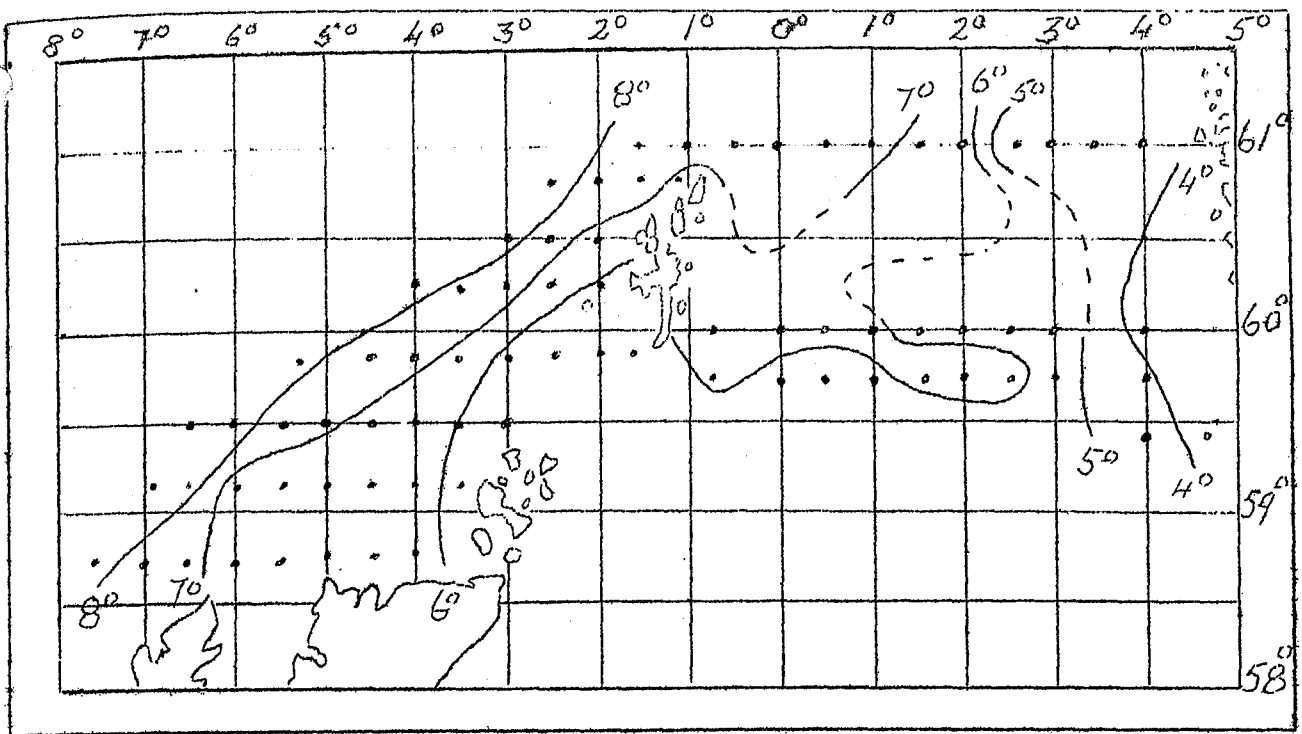
Using the M.S.24G machine, a continuous echosounding record of the whole cruise was obtained.

The best examples of large plume-shaped traces were recorded between 30 to 50 metres in depth, on Viking Bank and over The Patch in the North Sea. Scotia passed over these areas in dense fog, and encountered many large trawlers and drifters at work. On the western shelf a few small plumes were recorded north of the Butt of Lewis.

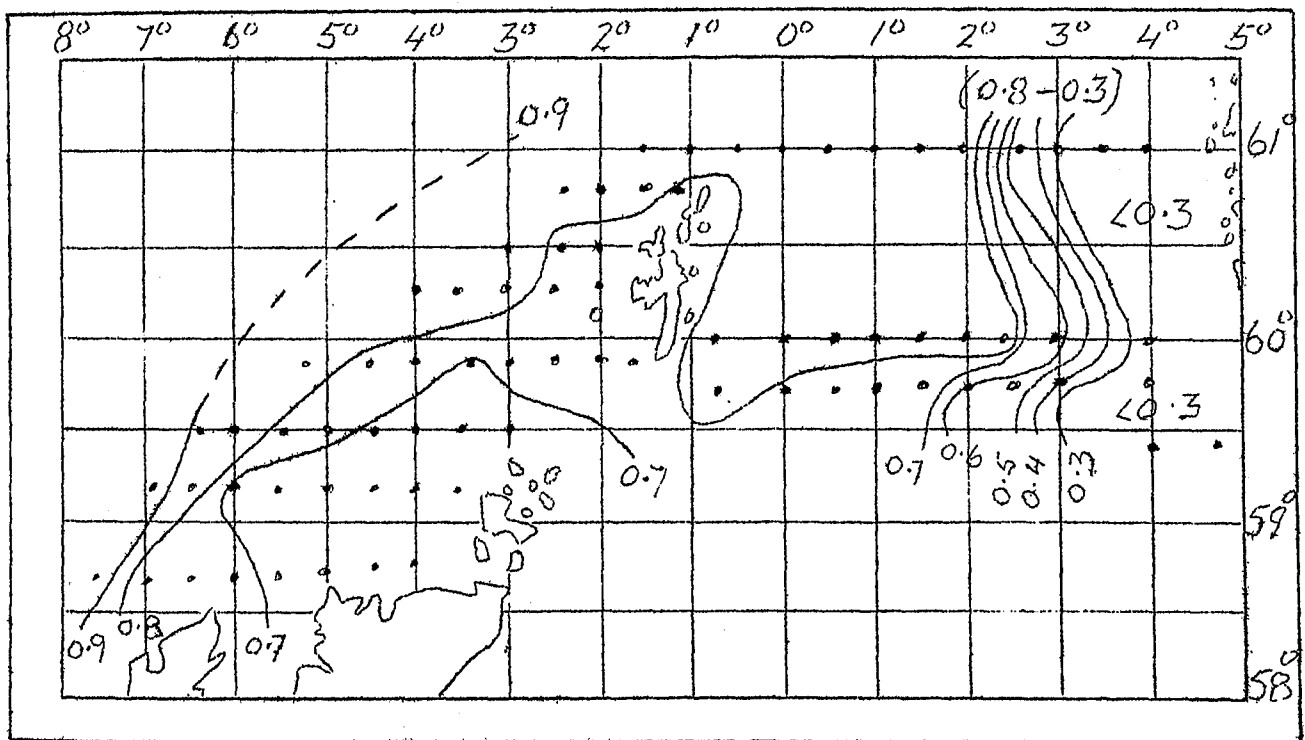
R. B. BURNS  
25th April, 1955.

#### CIRCULATION

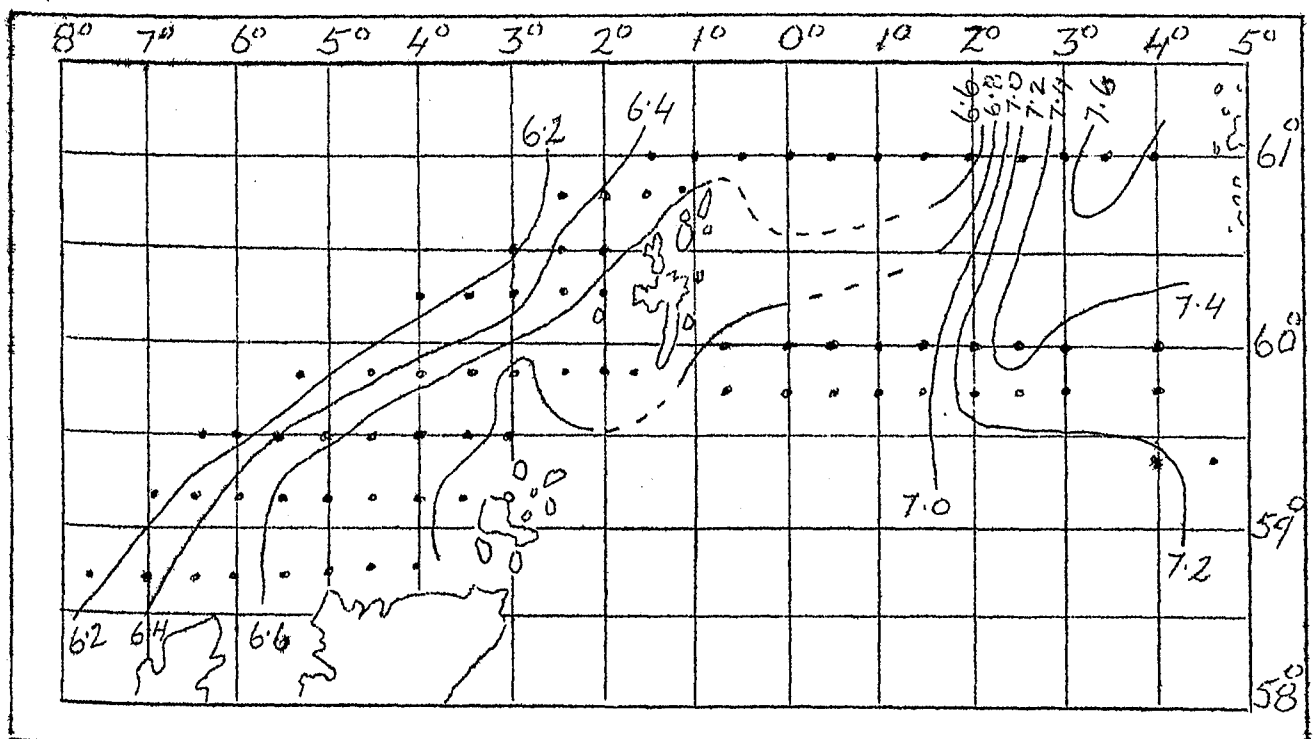
Mr. R. G. Wall	Mr. G. S. Gault
Mr. M. Graham	Dr. Lucas
Dr. J. N. Carruthers	Dr. Wood
Mr. W. K. Rose	Dr. Tait
Captain D. T. MacCallum	Dr. Fraser
Mr. F. S. Russell	Dr. Rae
Mr. K. M. Rae	Mr. Parrish
Dr. G. Reay	Mr. Saville
Dr. E. Leloup	Mr. Steele
Dr. A. Taning	Mr. Connolly 2
Dr. J. Ancellin	Mr. Burns
Prof. A. Bückmann	Mr. Martin
Dr. B. Havinga	Mr. Nicoll
Dr. A. R. Molander	Mr. Grierson
Captain Bruce	Library 2
Captain A. M. Finlayson	File
Mr. Jappy	Spare 4
Mr. T. C. Jones	



Temperature °C. Surface. March/April 1955. "SCOTIA"



Phosphate  $\mu\text{g}/\text{L}$  at  $\text{PO}_4\text{-P/L}$ . Surface. March/April 1955 "SCOTIA"



Dissolved Oxygen.  $\text{cc's}/\text{L}$  Surface. March/April 1955. "SCOTIA"