

In Confidence: Not to be quoted without reference to the Laboratory

CRUISE REPORT

FRS "Explorer"

13 May - 1 June, 1970

Objectives

1. Maintenance of Collieston current meter mooring.
2. Investigation of currents flowing parallel to the edge of the continental shelf.

Narrative

"Explorer" sailed from Aberdeen at 1900 on 13 May. The current meters at Collieston were lifted and substituted and the ship sailed for the area of the continental shelf north and north east of Shetland. "Flea" stations were worked in appropriate areas and the results sent to the Leith laboratory. The salinograph was run throughout the cruise and regularly annotated.

Current meters were placed at 33 and 124 metres in a depth of water of 143 metres, 21 miles north east of Flugga and again at 27 and 201 metres in a water depth of 220 metres 34 miles from Flugga and in a similar direction.

For the remainder of the cruise full hydrographical sections were worked on and off the shelf and parachute drogues tracked to give hydrographically as comprehensive a cover of the area as possible. This work was only interrupted by a short visit to Lerwick where Dr Steele joined the ship in place of Mr Dooley and Mr Shepherd.

The ship left the area on Sunday 31 May and docked in Aberdeen at 11.30 a.m. on 1 June.

Results

Measurements of temperature and salinity and of current velocity, whether by current meter or parachute drogues, all showed a considerable amount of short period variability. Generally the oceanic water was less saline than normal (35.35‰). The water on the North Sea shelf was somewhat denser than over the deeper water off the shelf which is a very unusual situation. This was probably due to the presence of very saline water of the previous year and a prolonged winter which cooled the stagnant shelf water well below its usual value.

The current system was more complex than usual probably due to this unusual hydrographic situation. However there existed strong ENE flows about the 20 and 25 of May which coincided with south westerly air streams in the north west Atlantic.

There were certain discrepancies between measurements by parachute drogues and current meters and these are being investigated.

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