

R.1/5

In confidence: Not to be quoted without reference to the Laboratory. 5
3SR66

CRUISE REPORT

F.R.S. "SCOTIA"

30th April - 14th May, 1966

Narrative

After loading scientific gear on the 29th April, the ship sailed at 0945 hrs on the 30th. Work commenced at 1015 hrs the same day, and stations were worked while steaming east towards the Skaggerak.

The survey continued uninterrupted by weather until, when the ship was near the south end of Shetland, the weather quickly deteriorated, forcing the ship to dodge northwards. Weather improved the next day allowing the 61°04' line to be surveyed. "Scotia" then worked back towards Shetland in worsening weather conditions and put into Lerwick at midday on the 9th May. The ship sailed again the following morning, but very bad weather conditions prevented any resumption of work and "Scotia" had to take shelter in North Sound Orkney.

A loss of forty eight hours made it necessary to omit two lines of stations and only a limited number of stations were worked before the ship had to return to Aberdeen at 2200 hrs on the 14th May, to enable special preparations to be made for the following cruise.

Hydrography

All water samples, except at one station, were taken from the pumped supply. These included salinity, phosphate, nitrate and silicate samples.

The recording thermograph was run continuously throughout the survey. Isotherms ran east-west, except in Norwegian coastal waters. The 6°C isotherm ran from Aberdeen to the Skaggerak and the 8°C isotherm from Shetland to 4°E, with the mass of northern North Sea water at around 7°C.

Current indicators were released at the standard stations.

Productivity and Plankton

Gulf III, 1 m Silk 26, Standard, sedimentation and Multi-Depth Indicator samples were taken.

An area of high chlorophyll a ($> 2 \text{ mg/m}^3$) extended from east of Shetland to the Coral Bank area. To the east of this, i.e. in the Baltic outflow area, values of $< 1 \text{ mg/m}^3$ and in some instances of $< 0.5 \text{ mg/m}^3$ were recorded. Similar values were recorded in the north-western North Sea.

The zooplankton standing crop was high ($> 20 \text{ g biomass/100 m}^3$) over almost the entire area surveyed. One of the most interesting exceptions was an area of $< 20 \text{ g biomass/100 m}^3$ associated with the water of above 8.5°C.

A set of enrichment cultures was started in an unsuccessful attempt to obtain live Anabaena.

Trawling

As no trawlable concentrations of herring were observed on the echo-sounder records, no attempts were made to obtain herring samples.

Echosounding

No particular pattern emerged from the plotting of "tick" and "plume" type traces, both occurring scattered over most of the area surveyed. This would be consistent with the presence of stocks of older fish on the Shetland grounds and the general area of the Baltic outflow, together with recruit herring on the Buchan grounds.

N. T. NICOLL
1st June, 1966