Dr. Wood

Confidential: Not to be quoted without reference to the Laboratory.

S.16 CRUISE REPORT 3 S.R.57

F.R.S. "SCOTIA"

April, 1957.

Narrative

The ship sailed from Aberdeen on the morning of the 10th April to work in the area of the herring fishery along the edge of the Norwegian Deeps. Due to bad weather the first station was not started until the morning of the 12th but thereafter there were no significant delays.

A grid of stations was worked from 59°N to 60°30'N and included areas with dense concentrations of drifters and trawlers. These ships appeared to lie in a north-south strip and corresponded to the area where echo traces were found.

"Scotia" went to Stavanger on the 18th and left on the 20th when the grid was repeated. On this occasion the echo traces had spread westward and were more diffuse.

On completing the grid "Scotia" went to Fladen when a day was spent on experimental work and then after further gear trials the ship returned to Aberdeen, docking on the morning of the 28th.

Fishing

By courtesy of Messrs. Pye Marine, Mr. R. Woodgate was present during the first half of the cruise to demonstrate the use of the Pye Fishfinder during these trials. His presence was greatly appreciated. Thanks are also due to the MAFF Laboratory of Lowestoft for the loan of a hand winch holding the cable for the "Fishfinder" oscillator. The midwater trawl was shot on the seven best echosounder traces recorded, although none of these was dense. The "Fishfinder" oscillator was attached directly to the headline of the net confirming that its gape was about 4 fathoms. On one occasion a few echoes were seen on the C.R.T. of fish entering the net and passing below it. Never more than a few herring were caught in midwater, although on 4 of the hauls, when the net was put to the bottom, it took fair quantities of whitefish. Unfortunately the lack of wire capacity on the winch did not allow putting the gear to the bottom in the area along the 100 fathom line where Polish and German trawlers were herring trawling.

A young fish trawl, made in nylon with a ½" mesh codend, was used to sample right from the bottom in 140 fathoms to the surface. It was operated from the tow net wire. A few interesting specimens were obtained.

At various towing speeds measurements were made on the drag and angle of descent of one of the trawl warps towing freely over the stern.

Productivity

The stations worked over the Norwegian Deeps were in a 10-mile lattice. The westward movement of less saline water appeared to have started when the first grid was worked but no details can be given until the salinities are available.

High chlorophyll values show that production was occurring in this area and the phosphate data should provide evidence of its rate.

Estimates of C^{14} uptake were made on six occasions using fixed illumination in the ship's laboratory. On two further occasions, once over the Deeps and once on Fladen, comparisons were made of this method with samples returned to the sea and suspended from a dahn.

J. H. STEELE
W. DICKSON

10th May, 1957.