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CRUISE REPORT

F.R.S. "SCOTIA"

1st to 17th November, 1955

Leaving Aberdeen on 1st November, "Scotia" made passage to the Butt of Lewis ground. Work there had to be abandoned at the first station in gale conditions, and with the forecast of severe gales all round "Scotia" sheltered in Breasléit Bay, Lewis, overnight on 2-3 November. The Butt to Faroe Bank section was resumed on 3 November. In mid-section gale conditions necessitated interruption of operations for six hours. The section to Faroe Bank was completed by 5 November. Operations at this stage being some 56 hours behind schedule and the Iceland region forecast continuing severe it was decided to forego the extension of this section north-westward in favour of the Enniberg and Faroe to Shetland sections. "Scotia" lay in Trængisvaag, Faroe, overnight on 5-6 November. In wind force 6 from the east, the Iceland region weather forecast still including severe gales from the east, the Faroe to Shetland section was commenced on 6 November and in gradually improving weather conditions was completed late on 7 November. Gale conditions in the Flugga region again interrupted work for 24 hours during which "Scotia" sheltered in Ronas Voe, Shetland.

The section on latitude 61°01'N was completed on 9-10 November and "Scotia" put into Bergen where contacts were made with colleagues in the University and the Fisheries laboratories. The section on latitude 60°01'N was overtaken on 14-15 November and the remainder of the cruise programme on the two days following, "Scotia" berthing in Aberdeen in the evening of 17 November.

HYDROGRAPHY

The upper 200 metre water layer on the Butt of Lewis to Faroe Bank section, to the Wyville Thomson Ridge, registered temperatures between 10°C and 11°C, and from the Wyville Thomson Ridge to Faroe, between 9°C and 10°C. These temperatures were thus about 1°C above the normal for the season. The 9°C isotherm plumbed to nearly 600 metres on the continental slope north-west of the Butt of Lewis from about 250 metres between the Faroe Bank slope and the Wyville Thomson Ridge. The deep waters on the latter part of the section registered the customary sub-zero temperatures below about 700 to 800 metres, probably signifying bottom Norwegian Sea water.

Between Faroe and Shetland, from temperatures of almost 9°C near the Faroe Islands, declination in the uppermost 200 metre layer to below 8.5°C was apparent to about the middle of the section. Thereafter the bulk of the upper water, no doubt oceanic in character, exceeded 9°C in temperature to maximum registrations of 10°C to 10.37°C off the continental edge and over the shelf west of Shetland. The zero isotherm evidently lay abnormally deep at about 700 metres (uncorrected for depth until salinities become available) significant probably of a powerful oceanic current coursing through the Channel north-eastward into the Norwegian Sea.

On the continental shelf along latitude 61°01'N from Shetland to Norway conditions were remarkably homothermal at 10°C to 10.30°C on the western half of the section, and between about 9.6°C and 10°C on the eastern half. In the Norwegian trench minimum temperature of under 7°C was recorded in the deepest part (ca. 340 metres). Similar conditions obtained on the section on latitude 60°01'N from Norway to Shetland but with less inferior temperature (8.4°C) in the deep Norwegian trench.

Despite somewhat difficult conditions, near bottom current measurements were made at four positions on latitude 61°01'N eastward of Shetland. These show the practicability of the devices adopted for operating a current meter just off bottom, independent of the ship. Improvement in timing the operation of the meter is however desirable.

PLANKTON

Routine plankton sampling as scheduled on the cruise programme was carried out at all stations occupied. Calanus was most abundant in the region of Faroe and again within the northern North Sea near Norway. The species was associated with equally dense populations of Euphausiids, mainly Meganyctiphanes norvegica. Sulcoleolaria biloba was very common over the greater part of the region surveyed. Large populations of Arachnactes were found in the Faroe Bank neighbourhood.

Large numbers of dead Salpa fusiformis were taken west of Orkney, live specimens being found only between Shetland and Norway where also substantial hauls of "glass eels" were made.

At the deep stations on the Faroe-Shetland Channel sections some myctophids were captured and two specimens of Argyropelecus.

TRAWLING

The first trawl off the Butt of Lewis yielded 41 haddock ranging from 11 to 37 cms., 169 gurnards, 5 S. acanthius, and one plaice, but no small mesh catch. On the Faroe Bank 50 haddock (16-69 cms) formed the main bulk of a catch including gurnard, cod, dabs and one lemon sole.

A larger haul of haddock (400 specimens including small mesh) was made off Nolso, Faroe, along with some cod, sebastes and dabs.

The Flugge trawl was very poor, yielding only a few haddock and gurnard. In the outer Morey Firth a similarly poor catch, including some whittings was made, but on the Buchan Deep ground over 400 whiting and 200 haddock were captured along with specimens of other species.

J. B. TAIT
28th November, 1955.

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