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CRUISE REPORT

F.R.S. "SCOTIA".

6th-28th October 1959.

NARRATIVE

F.R.S. "Scotia" sailed from Aberdeen on 6th October 1600 hrs, proceeding to the area west of Orkneys. Station No. 39 of the roundfish survey was occupied on 7th October 0800 hrs. During the first day of work the new herring trawl was damaged twice, the second time so seriously that it had to be replaced by an ordinary otter trawl, which was used for the remainder of the cruise. Fishing continued till 8th October 0900 hrs, when the net was damaged again. Increasing wind forced the ship to seek shelter in Dunnet Bay, where it remained till 0830 hrs on the following day. With the wind moderating, the work was resumed and all stations (with two exceptions, see "Trawling") west of Orkneys and Shetlands were completed, as well as the northernmost trawling stations east of Shetlands. With reasonable weather work continued till 15th October, only on one occasion interrupted by a fault which developed in the trawling winch and which was dealt with by the ship's engineers. On October 15th 0800 hrs "Scotia" arrived in Lerwick to take in water.

Shortly after the ship's arrival in Lerwick the weather deteriorated to the extent of making work impossible. Winds from strong to gale force constrained "Scotia" to remain in Lerwick till 19th October 0845 hrs. On that time the ship left the harbour, in spite of still unsettled weather, in the attempt to resume work. Having completed only one station, however, "Scotia" had to seek shelter again. Since the northern part of the programme was by then completed, the ship sailed to Moray Firth and anchored in Dornoch Firth (on October 20th, 0900 hrs), which was nearer to the more southerly survey areas. With the wind still unabated the ship left the anchorage on October 21st 0700 hrs, trying to work on two stations within the shelter of the Firth. Work outside the Firth was not possible, however, and after attempting one station shelter was sought again in Sinclair Bay, where the ship anchored on the same day at 2000 hrs.

On the following day at 0800 hrs, another attempt was made to resume work. Having completed two stations in the lee of the shore, "Scotia" sailed east along the herring larval survey line 57°50'N. The work was carried out in bad weather, strong to gale force winds from the westerly direction and heavy-following sea causing damage to some of the plankton equipment. With the line completed, the next line south (along 57° 25'N) was attempted, but had to be abandoned after working only one station. Work was interrupted at 0915 hrs on October 23rd.

After a stormy passage "Scotia" arrived in Aberdeen on October 24th 0730 hrs, to take fuel and water. From that date on the ship remained stormbound in the harbour, winds of force 10 being recorded from all the neighbouring sea areas. By October 28th, with the storm continuing and no prospect of work being possible within the next 36 hours, the remainder of the cruise, which was scheduled to end on October 30th, was abandoned.

In all, 20 out of 43 trawls were made for the roundfish survey, but only 19 out of 65 herring larval stations.

TRAWLING.

Fishing was slack, catches of fish for one hour trawls being no more than three to four baskets of whitefish, more often one to two baskets. Squalus acanthias was caught in considerable numbers at almost all stations west of Orkneys and Shetland and in the Flugga area. At Station 30 (area D20b) 926 dogfish were caught for one hour trawl. Fishing can be considered as fairly

typical for the time of the year. An interesting feature of the catches was the large number of small (20-40 cm) Loligo, found in many of the northern stations. In spite of searching, no ground suitable for trawling was found at stations 34 and 36 of the roundfish survey.

PLANKTON.

The few stations worked to the west of Shetland and Orkney were very rich in crustacean plankton. At YY17b twelve Scombrosox saurus were taken in the surface tow net. This collection contained very large numbers of Calanus and euphausiids. North of Shetland in the coastal waters euphausiids were again very abundant.

The collections taken along the 59°N and 58°N lines were, in contrast, very poor. The only organism present in appreciable numbers was Spiratella (Limacina retroversa). Cyanea were still common throughout the sampled area of the North Sea.

HYDROGRAPHY.

The stations occupied lay on the shelf to the north-west of Scotland and in the North Sea, north of 57°25'N. Surface temperatures ranged from 12.14°C at a station to the south east of Shetland, to 13.49°C at a position west of Orkney where a patch of water had surface temperatures of 13° and above. In the North Sea a small patch of water north of the Fladen registered a surface temperature of 13.13°C. Temperatures within the columns showed near uniformity down to the 40 and 50 m levels, with the lowest bottom temperatures about 17°C north of the Fladen.

Dissolved oxygen values for the surface ranged from 5.7 to 5.9 cc/l, falling to 5.0 to 5.2 cc/l at the bottom where a marked temperature difference was observed.

Depleted phosphate values, ranging from 0.14 to 0.20 µg-at. PO₄-P/l, were found in the central part of the northern North Sea. Elsewhere the values were fairly uniform at 0.42 to 0.46 units.

Drift bottles in batches of 5 were released at 19 stations.

ECHOSOUNDING.

Echosounder was run as continuously as possible, but long intervals of time during the cruise were unsuitable for echosounding observations due to the very rough seas and bad weather. Fish traces have not been encountered in great numbers.

Z. KABATA

12.11.59

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