

S.16

Cruise Report

F.R.S. "SCOTIA"

March 1957

General

"Scotia" sailed at 4 a.m. on Thursday, March 7th, and started the most southerly line of stations in gradual worsening weather but completed the work as far as 3°E before lying to and dodging on the night of Friday the 8th. The weather showed no signs of improving and by Sunday we decided to go to Stavanger for shelter. Opportunity was taken to visit the Norwegian Canning School and the attached chemical and bacteriological laboratories. "Scotia" left Stavanger early Tuesday morning and completed 5 days continuous work before gales intervened and made it necessary to seek shelter at Bergen on the evening of Saturday the 16th, some 36 hours before we intended to call. Stores, water, etc. were taken at Bergen on the Monday and through the courtesy of Dr. Rollefson we were shown over the laboratories. Leaving Bergen on the morning of Tuesday the 19th, we attempted the line of stations at 60°20'N but rough seas made it inadvisable to attempt continuing sampling and we sheltered for a further 2 days. This gave us a chance to investigate and repair the governor mechanism of the echosounder which had been running erratically. Leaving again on the 21st, stations 70 and 83 were worked on the way to the 61°01'N line which was completed on the 22nd and 23rd except for the last station north-west of Flugga. Further gales again made it necessary to seek shelter and passage to Lerwick was made on the 25th. Leaving Lerwick on Wednesday the 27th 2 further lines of stations were worked before reaching Aberdeen on the 29th as scheduled.

Hydrography

There was little evidence of layering of the water except over the Norwegian Deeps. Near the Aberdeen coast temperatures were below 6° but over most of the west of the northern North Sea were between 6° and 7° with a tongue of warmer water east of the Fair Isle and Moray Firth areas between 7° and 8°C. The bottom temperatures of the Norwegian Deep were similar to those of the west of the northern North Sea but surface temperatures were much lower, 5° at 58°30'N, 4.5° at 59°N, 3° at 59°30'N and 4.4° at 61°N. There was a gradual rise westwards along the 61°01'N line reaching 8.4° at Shetland but nowhere west of the Norwegian Deeps was there a thermocline.

Plankton

Phytoplankton. The spring outburst of phytoplankton was only evident over the Norwegian Deeps (i.e. where the thermocline was most marked). Here the dominant species were: Thalassiothrix longissima and Coscinodiscus concinnus, which were fairly abundant. Elsewhere phytoplankton was very poor indeed showing that in 1957 the spring outburst has been delayed and is particularly late.

Zooplankton. Calanus was very abundant only over the Norwegian Deeps between 58°30' and 59°N (i.e. south of the phytoplankton patch). Elsewhere Calanus was rather meagre. Pseudocalanus and other small copepods were common to the north-west of the phytoplankton patch and also in the warmer water east of Fair Isle and the Moray Firth. A band of dense Thysanoessa inermis, with the siphonophore Sulculeolaria, was found along the edge of the warm tongue in water of more than 7°. Elsewhere zooplankton was meagre.

Fish eggs were only abundant east of the Pentland Firth but were fairly generally distributed elsewhere in small numbers in the western part of the area investigated. They were scarce on the eastern side. On the western end of the 61°01'N line eggs were fairly common and there were large numbers of young saithe west of 2°E.

Trawling

Representative hauls were taken except in C13c where the whole codend was lost and in D13c and D19c when the trawl was badly split. Some good catches of haddock and whiting were obtained, the peak sizes for haddock being 24-28 cm and whiting 23-25 cm. Chicken halibut were taken in G17a and G19d. Very few herring were taken in the trawl and all were brought back to the laboratory.

Echosounding

During the first few days, and again after repairing a faulty governor, the echosounder was run continuously whilst steaming but showed very few herring traces. The most marked were in Bluemull Sound between Yell and Unst. Some good bottom traces of demersal fish were seen in C14a (57°46'N 1°25'W) where seine-net boats were working.

J. H. FRASER.

12th April, 1957.