

CRUISE REPORTCONFIDENTIALF.R.S. "SCOTIA"May-June, 1951.

"Scotia" sailed from Aberdeen at 2130 hours on the 16th May. Two accumulated temperature stations were worked en route to Stornoway where a call was made to land Mr. Budge. The vessel sailed again immediately and the Butt of Lewis-Faroe Bank section was started at 1900 hours on the 18th. This section was carried out uneventfully and completed by 1500 hours on the 20th May. By this time weather conditions had deteriorated and only those Faroe plateau stations could be worked which were in the lee of the islands. Five of these were completed before work had to stop completely. On the 23rd two more stations were completed under difficult conditions before the weather stopped work until the 27th May. The Faroe survey was then continued and completed by the 30th. A start was then made on the Enniberg section under deteriorating weather conditions. Four stations were successfully done before a bad kink in the midships hydrographic wire necessitated cutting off the first 200 metres of the wire and the abandonment of the rest of the section. The Nolso-Flugga section was carried out under ideal conditions and completed in less than thirty hours. "Scotia" then steamed for Aberdeen, occupying three stations for accumulated temperature, etc. on the way, and docked there at 1300 hours on the 3rd June.

HYDROGRAPHY

Temperature and salinity samples were taken at the recommended depths at all stations and oxygen, total phosphate and free phosphate samples at the stations specified in the station list. On the Butt of Lewis-Faroe section surface temperatures south of Faroe Bank varied between 9°C and 9.6°C; north of the bank lower surface temperatures of 8.4°-9°C were reported. At the stations on the section south of 60°12'N bottom temperatures higher than 7.7°C were found even at depths of 1000M. From 60°12'N to 66°35'N bottom temperatures were around 0°C whilst north of this bottom temperatures were again quite high.

On the Faroe plateau temperatures showed little or no variation with depth at those stations in the vicinity of the islands; around the periphery of the shelf bottom temperatures were from 0.8°- 1.5°C lower than the surface ones at the same station. Surface temperatures at Faroe varied from 6.63°- 8.82°C, the lowest temperatures being reported from the vicinity of the islands and the highest ones from the edge of the shelf to the south and west of the islands. On the Nosol-Flugga section surface temperatures were low at the Faroe end of the section but east of this varied from 8.6°-9.6°C. Negative temperatures were reported from all depths below 600 m on this section.

Chemical analysis revealed that the free phosphate content, throughout the area of the cruise, was lower, and the dissolved oxygen content higher, (with the exception of surface values at the Butt of Lewis stations), than in the corresponding cruise in 1950. Within the Faroe area there was evidence of an inverse relationship between oxygen and phosphate values, the lowest phosphate and highest oxygen content being found north of the islands; and the lowest oxygen and highest phosphate values to the south of the islands.

PLANKTON

Dense phyto-plankton populations were observed at B15d, A17a, XX17a, WW18d and XX23a. The dominant constituents of these were Chaetoceros socialis and C. decipiens, Thalassiosira gravida and Coscinodiscus concinnus. Over the rest of the area the phytoplankton content of the samples was small in contrast to the conditions observed at this time in 1950.

Macroplankton collections generally were chiefly composed of Calanus finmarchius. Rich collections of this species were taken on the southern part of the Butt of Lewis section and on the eastern and western edges of the Faroe shelf./

shelf. North of Faroe Bank, close to the islands around Faroe and on the Nolso-Flugga section this species was less abundant. Limacina was a common constituent of these collections. It was taken at all the North Sea stations, at most of those on the Butt of Lewis section and at Faroe to the north of the islands. Calanus hyperboreus was also unusually prevalent, occurring in fair numbers at all stations on the Butt of Lewis section north of 60°N, to the east of Faroe and in the middle of the Faroe-Flugga section. S. elegans was widely distributed over the area and occurred in some abundance off Noup Head and north of the Faroes. S. maxima was the most abundant of the other chaetognaths and was rather similarly distributed to C. hyperboreus. Sarsia, Hybocodon and small specimens of Aurelia were conspicuous features of the plankton on the Faroe shelf and Oikopleura at those stations to the east of the islands. Haddock larvae were taken at the Butt of Lewis, Muckle Flugga and in fair numbers at several of the stations around Faroe - particularly to the north of the islands.

An attempt was made to tow-net at high speed by pulling the open end of the net forward inside the net and fastening it to the ring to act as a valve. By this means catches of considerable size were made at speeds up to eight knots without damage to the net. It was clear however that at such speeds only sub-surface hauls can be carried out without the provision of some sort of depressor.

TRAWLING

Throughout the cruise trawl catches were poor in all species of fish. Haddock made up the bulk of the commercial species in all catches; lemon soles were only taken other than as single specimens at one station in the Myling Head area and Cod and Whiting were extremely scarce. 1+ Haddock were poorly represented in the catches from Faroe, the greatest number of 50 per hour's fishing coming from Fuglo Bank. Commercial vessels were still lying during some of the daylight hours and were also experiencing poor fishing. A few were making tentative hauls in daylight, apparently expecting the onset of daylight fishing in the near future. "Scotia's" catches were undoubtedly greater during the hours of darkness. Advantage was taken of the period of bad weather to shoot Mr. Craig's experimental trawl in the lee of the islands. Judging by the spread of the warps and their angle to the vertical the net was fishing satisfactorily but no fish were taken.

ALAN SAVILLE.

7th June, 1951

CIRCULATION

Mr. W. Russell	Dr. F. Devold	Dr. J. B. Tait	Mr. Saville
Capt. C. H. Champness	Dr. H. Thomsen	Dr. J. H. Fraser	Mr. Davidson
Mr. M. Graham	Mr. F. S. Russell	Dr. A. Ritchie	Mr. Lawrie
Dr. C. E. Lucas	Mr. E. Ford	Dr. E. B. Rac	Mr. Tulloch
Dr. J. N. Carruthers	Mr. K. M. Rae	Mr. B. B. Parrish	Mr. Seaton
Dr. H. Blegvad	Dr. G. Reay	Capt. E. A. Bruce	Spare 5.
Dr. A. V. Taning	Dr. H. Wood	C.O. "Explorer"	