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CRUISE REPORT.F.R.V. "SCOTIA".May, 1950.

Between the dates 9th May - 6th June "Scotia" carried out the normal hydrographic sections, Butt of Lewis-Faroe Bank, Enniberg - 63°30'N 06°35'W, and Svino-Shetland. In addition an intensive trawling and plankton survey was done on the Faroe plateau, and a line of stations from Fair Isle to Butt of Lewis was carried out.

HYDROGRAPHY;

From Butt of Lewis to 59°45'N surface temperatures averaged about 11°C. with a temperature discontinuity of 1°C. in the 0-10 metre stratum. North of 59°45'N, on this section, surface temperatures were between 9°C. and 10°C. Bottom temperatures were high from Butt of Lewis to 60°20'N. On the Svino-Shetland section surface temperatures ranged from 8.7-9.2°C., the higher temperatures being recorded on the southern end of the line. Negative temperatures were recorded at depths greater than 600 metres. Surface temperatures, on the Enniberg section, ranged from 8.3 to 8.8°C., except at the first and last stations where 7.90°C. was recorded at the surface. North of 63°06'N the 7° and lower isotherms inclined steeply towards the surface.

Within the Faroe plateau surface temperatures were markedly higher on the outer periphery than in the immediate vicinity of the islands. They ranged from 8.0-8.9°C. in the former case and from 7.2-7.7°C. in the latter. No marked temperature discontinuity with depth was in evidence at any of these stations. On the three hydrographical sections oxygen and phosphate values were higher than those recorded in March. The highest phosphate and lowest oxygen values were recorded North of Faroe Bank, at the north end of the Enniberg line and the southern end of the Svino-Flugga section.

PLANKTON:

A dense phytoplankton population was present from Fair Isle westwards to Butt of Lewis and from there north to Faroe Bank. Within the Faroe plateau a considerable phytoplankton population was also in evidence with the greatest density to the east and south of the islands. The dominant constituents of these populations were Nitzschia seriata, Thalassiosira gravida and Lauderia borealis.

Calanus was the dominant constituent of the macro-plankton occurring in greatest numbers at Fair Isle, to the north of Faroe Bank, and, within the Faroe plateau, in the off-shore waters to the east and south of the islands. Cosmetira occurred in considerable numbers from Butt of Lewis northwards to 60°00'N and eastwards to Fair Isle. At Faroe, haddock eggs were still present at scattered points but in very small numbers compared with the previous month. Fish larvae occurred in large numbers at many of the stations but full identification of these has not yet been carried out.

TRAWLING./

TRAWLING:

Trawl catches generally were poor over the whole area. Ripe haddock formed an inconsiderable proportion of the catches, the majority of the adult haddock taken being spent. 1+ haddock were taken in considerable numbers north of Kadlur, on Sando Bank and west of Nolso Bank. They had a modal size of only 14 cms. Two-year haddock made up the bulk of the catch of this species. They occurred in greatest density at Myling Head and on Sando Bank. One large catch of Lemon Soles was taken at Myggenaes. Cod were also taken in greatest numbers at this station.

ALAN SAVILLE.

19th June, 1950.

CIRCULATION:

Mr. W. Russell.
Capt. C. H. Champness.
Mr. M. Graham.
Dr. C. E. Lucas.
Dr. J. N. Carruthers.
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CRUISE REPORTF.R.V. "SCOTIA"9th May - 4th June, 1950.NARRATIVE:

"SCOTIA" sailed from Aberdeen at 7 p.m. on the 9th May. The trawl was shot and hauled in Aberdeen Bay for the benefit of the film unit, the ship then proceeding to the first station in the Buchan Deep. At this station the echo-sounder was found to be defective. A sounding was taken with the lead and the station completed before sailing to Peterhead to have the echo-sounder repaired. This was ostensibly done on the following day but the instrument was unreliable throughout the remainder of the cruise and needed constant attention from the ship's personnel. "SCOTIA" sailed again at 6 p.m. on the 10th. Bathythermograph readings were taken every ten miles from Noup Head to Butt of Lewis.

The Butt of Lewis-Faroe Bank section was completed uneventfully by midnight of the 13th and the stations of the Faroe grid commenced immediately. Work progressed favourably till the 17th May when a false sounding resulted in the Nansen-Petersen bottle striking the bottom. A broken air-valve was the only damage but no spare being available, it was decided to dock at Klakksvik, a delay necessitated in any case by the need to replenish the water supplies. Whilst in Klakksvik it was discovered that the after stay on the midships Kemp davit was sheared through at the head. It was removed completely and the davit stayed with rope for the remainder of the cruise. While water was being taken, the local machine shop made three new air-valves for the P.N. bottles.

The remainder of the Faroe survey was completed by the 21st May and the Svino-Flugga section started. This section was carried out in a heavy swell which made work difficult as the ship was by then very light. For this reason the trawl at Muckle-Flugga had to be omitted. This section was completed by the 23rd and "SCOTIA" then proceeded to Lerwick to coal. The ship was held up in Lerwick until noon of the 26th May.

A passage was then made back to Faroe but on reaching there, work was stopped till the 29th by bad weather. The hydrographic section north of Enniberg was carried out on the 29th and 30th though deterioration in weather conditions made it necessary to omit some of the plankton work on the northern end of this section. Thereafter poor weather conditions hampered the completion of the second Faroe survey and only a portion of it was done before "SCOTIA" sailed for Aberdeen docking there at 4 p.m. on the 4th June.

HYDROGRAPHY:

Temperatures and salinity samples were taken at the recommended depths at all stations and oxygen and phosphate samples at those stations specified in the station list. At the two North Sea stations, surface temperatures were 8.3° C. with little variation with depth. On the line of stations from Noup Head to Butt of Lewis, surface temperatures were markedly higher varying from 9.7° - 10.25°C. with the greatest temperature discontinuity - about 1°C. - in the 0 - 10 metre stratum. On the southern
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end of the Butt of Lewis - Faroe Bank section surface temperatures were still higher averaging about 11°C. with in general a temperature discontinuity of 1°C. in the 0 - 10 metre stratum. Temperatures lower than 8°C were recorded only at depths greater than 1,000 metres. North of 59°45'W. surface temperatures varied between 9° - 10°C but bottom temperatures continued to be high to 60°20'W. North of this, negative temperatures were recorded in the deepest strata.

Surface temperatures were, in general, markedly higher on the outer periphery of the Faroe plateau than in the immediate vicinity of the islands. They ranged from 8.0° - 8.9°C. in the former case and from 7.2 - 7.7°C. in the latter. Bottom temperatures showed no such regularity of distribution but varied randomly from 7.0 - 7.9°C. No marked temperature discontinuity with depth existed at any of these stations.

On the Svino-Shetland section the stations within the Faroe plateau were similar in temperature structure to those belonging to the Faroe grid. Beyond the plateau, surface temperatures were markedly higher ranging from 8.7° - 9.2°C. with the higher temperatures being recorded at the southern end of the line. Negative temperatures were recorded only at depths exceeding 600 metres. Surface temperatures on the Enniberg section ranged from 8.3 - 8.8°C. except on the first and last stations where 7.9°C. was recorded at the surface. North of 63°06'N. the 7° and lower isotherms inclined steeply towards the surface. Negative temperatures were recorded at depths below 700 metres north of this point.

On the three hydrographical sections, oxygen and phosphate values were higher than those recorded in March of this year. The highest phosphate values were associated with lower oxygen values and vice versa. The highest phosphate values were recorded north of Faroe Bank at the northern end of the Enniberg line and southern end of the Svino-Flugga section. Within the Faroe plateau, the lowest phosphate content occurred on the eastern side of the islands.

PLANKTON:

A dense phyto-plankton population was present from the Fair Isle region westwards to Butt of Lewis and from there north to Faroe Bank. North of Faroe Bank and on the Svino-Flugga line, phyto-plankton density was considerably less. Within the Faroe plateau a considerable phyto-plankton population was in evidence over the whole area with a tendency for the greatest density to occur to the east and south of the islands. The dominant constituents of these phyto-plankton populations were Nitzschia seriata, Thalassiosira gravida and Lauderia borealis.

Calanus was the dominant constituent of the macro-plankton over the whole area surveyed. It occurred in greatest numbers at Fair Isle; on the Butt of Lewis section north of Faroe Bank; in the middle of the Svino-Shetland section; and, within the Faroe plateau, in the off-shore waters to the east and south of the islands.

Cosmetira occurred in considerable numbers from Butt of Lewis northwards to 60°00' N. and eastwards to Fair Isle. Sarsia was a noticeable constituent of many of the collections from Faroe - particularly to the north of the islands. Clione limacina and Diacria trispinosa were present at VV20b, Sagitta Lyra at VV22c and a specimen of Arygropolecus from a deep haul in WW18d. At Faroe, haddock eggs were still present at scattered points but
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in very small numbers compared with the previous month. Fish larvae occurred in large numbers at many of the stations but full identification of these has not yet been carried out.

TRAWLING:

Trawls were carried out at the first two stations of the Butt of Lewis - Faroe Bank section. These yielded poor catches of which the bulk was composed of haddock. At both stations a few ripe haddock occurred but the majority were spent fish. The Faroe Bank trawl station also yielded a poor catch mostly composed of 1+ haddock. The commercial fishery at Faroe, judging from reports received from fishermen seemed to be in a stage of transition from night to day fishing. Accordingly it was decided to carry out trawling on the Faroe plateau as was most convenient for completion of the programme, without reference to the time of day. Catches there were also very poor. 1+ haddock were taken in appreciable numbers only at three stations, north of Kadlur on Sando Bank and between Nolso Bank and the islands. These fish had a modal size of only 14 cms. The bulk of the rest of the haddock catch was composed of 2+ fish. These occurred in greatest density at two stations north of Myling Head and on Sando Bank. Only eight ripe fish, of which the majority were males were taken at Faroe. Lemon Soles occurred in small numbers at most of the Faroe trawling stations. By far the largest catch of these, consisting of seventy-two fish, was made west of Myggenaes. This station also yielded the largest catch of cod.

ALAN SAVILLE.

14th June, 1950.