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CRUISE REPORT

F.R.S. "SCOTIA"

February, 1953.

After a delay of 24 hours occasioned by bad weather, "SCOTIA" sailed from Aberdeen on Friday, 6th February, at 3 p.m. and occupied the Buchan Deep station at 8 p.m. Three more stations were worked en route to the Butt of Lewis where it was decided (9 p.m. on the 7th) to retire to Broad Bay and await the passing of an on-coming gale. Anchor was raised at 7 p.m. on Monday, 9th, but only six more stations beyond the Butt of Lewis could be completed before "SCOTIA" moved into a region where a gale was in operation. After an overnight passage to the Faroes, work on the survey in Faroese waters commenced at 7.30 p.m. on the 11th. Thereafter a spell of moderate weather made it possible to work 18 trawl stations, till Saturday, 14th, where "SCOTIA" put into Klakksvik for water. Gales delayed departure from this anchorage till 12.30 p.m. on Tuesday, 17th. The hydrographic line to Flugga was begun in uncertain weather and only three stations could be completed when a N.W. gale compelled "SCOTIA" to make a passage to the Shetlands. Anchor was dropped in Balta Sound from 6 p.m. on the 18th till 10 a.m. on the 19th. A second attempt was made to complete the hydrographic line from Flugga to Faroes, but 12 hours later after four more stations had been done, further work was abandoned. "SCOTIA" thereupon sought shelter in Gruting Voe from 12 noon on the 20th till 2 p.m. on the 22nd, and docked in Aberdeen at 9 a.m. on Monday, 23rd February.

**HYDROGRAPHY:** The seven stations that were sampled on the line from the Butt of Lewis to the Wyville-Thomson Ridge showed a predominant oceanic influence from the surface (9°C) to the bottom 1000 m (7.6°C). Between the surface and 400 m. the water column had hardly a difference of 0.1°C, and from 500 m. to 100 m. a change in temperature of 1.5°C only was observed. Temperatures on the Faroe plateau showed column uniformity but there were significant differences between the surface temperatures of inshore water (5.9°C), water on the margin of the plateau to the east (6.8°C) and on the west (7.3°C). The main penetration of Atlantic flow water across the Faroe-Shetland Channel occurred at 61°01'N 1°36'W (24 miles N.W. of Flugga) where a surface temperature of 8.44°C was recorded. Stations flanking this one to the west and east had surface temperatures of 7.5°C and 7.0°C respectively. At 61°14'N 2°40'W (about 60 miles N.W. from Flugga) temperatures of 7.2°C at the surface and 5°C at 400 m; 1.2°C at 600 m. and -0.7°C at 1050 m; showed that the boundary between Atlantic and boreal waters lay at about 500 m. depth.

Of the chemical stations five were sampled for dissolved oxygen, free and total phosphate and for organic matter in solution, and nine others for oxygen and free phosphate only. Results of these samplings are awaited.

**PLANKTON:** Seventy-nine collections for plankton were made with the various nets. In general the catches were sparse. Dominant species in the Butt of Lewis-Faroe line were Euphausiids, Chelophyes appendiculata, Galetta australis, Sagitta elegans, together with fish eggs in small numbers. Hauls on the Faroe plateau contained meagre collections of Calanus, Euphausiids and fish eggs. Faroe to Flugga hauls had Siphonophores and fish eggs predominating. Four interrupted oblique hauls were done with a 1 m. silk net, each of an hour's duration. These yielded denser collections of zooplankton than did the normal hauls and one in particular at YY22b (Sando Bank) yielded a very dense collection of fish eggs, probably saithe.

**TRAWLING:** The trawl was shot 13 times, and the catches in general were very poor, particularly in deep water. The best catch consisting principally of 159 haddock from 22 to 48 cm. occurred at XX22b (Nolso Bank) in water 43 fms. deep and with a bottom temperature of 5.9°C which happened to be the lowest bottom temperature on the plateau. In the trawl at XX24C, in 49 fms. of water and with a bottom temperature of 6.0°C, 121 haddock from 22 to 36 cm. comprised the bulk of the catch. The remaining 11 trawls, made mostly in deeper water (90 fms.), averaged 17 fish in the cod end. Small mesh catches were also meagre, Gadus esmarkii being the best represented species, with haddock of 14-20 cm. next.

Of the species examined for sex and maturity only the 4 male saithe (94-105 cm.) caught on Sando Bank were ripe and running. No other species had reached this degree of maturity. Haddock up to 26 cm. proved to be immature, while those over 26 cm. were maturing; hence no ovaries were kept for fecundity determinations. Lemon soles, which were poorly represented in all the catches, varied in maturity from  $\frac{1}{4}$  to  $\frac{1}{2}$ . The capture of a Chirolophus galerita (10 cm) and a Scelrocragon boreas (8 cm.) in the trawls is worthy of mention.

**GENERAL:** No whales or dolphins were sighted during this cruise, but on Friday, 13th February, a "grindedrap" (whale killing) took place at Thorshavn. The number of whales involved is believed to be over 100.

R. B. BURNS  
2 March, 1953

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