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CRUISE REPORT

F.R.S. "SCOTIA"

3rd-23rd September 1966

A mechanical defect, that kept St. Clement's Bridge closed for over an hour, almost prevented "Scotia" from sailing on the afternoon tide of the 3rd September 1966. When two hours later "Scotia" occupied the first station, rapidly deteriorating weather conditions held little prospect for a continuation of the herring larval survey. Ten hours later, to continue work at all, "Scotia" had to switch to working the most sheltered stations within the Moray Firth, and even this came to an end at midnight of the 5th/6th September with the onset of hurricane "Faith" which "Scotia" rode out at anchor in the North Sound (Orkney). Other interruptions in the work continued to occur until the 17th September, when in a period of settled weather four days of continuous work became possible.

The usual mid-cruise break was taken on the 12th at Aberdeen, and the survey came to an end on the 20th September.

On the 22nd and 23rd September, under the charge of Mr. Seaton and Mr. F.G.T. Holliday and with batches of students of Aberdeen University aboard, "Scotia" carried out a special two-day programme of hydrographic and biological sampling in the Dog Hole and Buchan Deep.

Plankton

Of the 106 stations on the grid 93 were sampled the first time round, and 42 of these were sampled a second time using the Gulf III Sampler. In addition 60 samples were taken with the Plankton Indicator on behalf of the SMBA, Edinburgh.

Crustaceous plankton was moderately abundant over the greater part of the area surveyed although the outer Moray Firth and the inshore waters off the Aberdeenshire coast were poor, while two areas of particular abundance lay west and east of Orkney.

Salpa fusiformis was present at Fair Isle, close in to the west coast of Orkney and at sub-area D16a. Sagitta elegans, Arachnactis albida and Pleurobrachia pileus were widely distributed over the eastern part of the survey, though the ctenophores were present in relatively small numbers. To the west of Orkney, however, Pleurobrachia numbers were very much higher and their distribution coincided roughly with the area which contained substantial numbers of herring larvae.

Very few herring larvae were taken in the southern part of the survey but to the west and east of Orkney they were present in fair numbers. Samples obtained when the latter was surveyed a second time, after an interval of several days, suggested that a considerable drift south had taken place.

Hydrography

The warmest water with surface temperatures in excess of 13°C (the maximum being 13.90°C) was found in two patches, one bordering the southern Moray Firth, and the other as a tongue off the Buchan coast. On moving north there was a gradual fall in temperature till just south of Fair Isle the lowest temperature of 11.42°C was recorded.

Salinity isochalines ran roughly from north-west to south-east, with the highest value of 35.26‰ lying south of the Fair Isle gap; the lowest value of 34.15‰ was recorded in the innermost corner of the Moray Firth.

Drift indicators were successfully liberated at the four standard positions laid down in the programme.

Trawling

The Prawn Trawl was used twice in the South Deep of the Moray Firth on the 9th and 15th September. The bulk of the catch in each of the trawls consisted of Nephrops, there being 899 individuals from 15-45 cm in one trawl and 1909 (17-37 cm) in the other. The majority were taken in the large mesh; those that did escape into the small mesh had a size range that had a large overlap with that of the large mesh. Only 7% of the females taken were berried.

Except for long rough dab and whiting which occurred in fair numbers, other round and flat fish taken were very few in number and generally of small sizes. Among these were lemon sole, common dab, witch, plaice, cod, hake, haddock, herring and saithe. The aggregate for long rough dab was 512 individuals from 8-22 cm, and for whiting 665 from 11-29 cm.

R. B. BURNS
2nd November, 1966.