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CRUISE REPORT

F.R.S. "SCOTIA"

15th June - 6th July 1960.

"Scotia" sailed from Aberdeen at 0700 hours on 15th June and commenced work immediately on the North Sea portion of the programme, which was considered to have the highest priority. In view of the limited time available it had been agreed that the programme should be amended to provide 5 daylight hauls in each group of 8 positions, and also to give the maximum environmental coverage. This plan was adhered to, although weather conditions were rarely good. Force 6 to 7 winds in the Fair Isle region, combined with a badly torn trawl provided an excellent opportunity to carry out the Westray Firth Seal Survey. No working time was lost by this and "Scotia" called at Lerwick to take water on the 22nd June. In spite of heavy fog which hampered operations considerably in this region, "Scotia" left on the 23rd June and station 31 was completed by the evening of 25th June. It was obviously impossible to undertake any daytime trawling west of Shetland and complete the North Sea work. Therefore an echosounder survey of the west of Shetland herring grounds was carried out on passage from Station 31 to Station 41. At this station the brake bed attachments of the trawl winch fractured and no further trawling was possible. The environmental work was completed satisfactorily before "Scotia" docked at Aberdeen on the 27th June. The winch was removed immediately for repairs and a change over of staff took place.

A very severe gale caused delay and the ship sailed at 1700 on 30th June, to carry out the Productivity programme, with Mr. Steele as scientist in charge. This work was finished successfully and "Scotia" returned to Aberdeen on 5th July. The trawl winch was installed at once and the ship left for Leith, on the next tide, to carry out the Nephrops survey in the Firth of Forth. The four hauls were completed and "Scotia" docked at Leith at 1230 hours on 6th July.

Hydrography

Sampling was carried out in accordance with the programme. Surface temperatures, which ranged from 10.4°C in the south-west to 13.1°C in the north-east, were considerably lower than would be expected from the results obtained by Discovery II in the same area during May this year.

Bottom temperatures, which varied from 6.3°C in the south-west to 10.6°C in the Moray Firth, were about average but the colder water below 7°C was much more extensive than usual.

Plankton

Sampling during the first part of the cruise indicated that Calanus and euphausiids were most abundant to the north and north-east of Shetland and also, associated with S. elegans, in the section to the east of Fair Isle. Limacina was dominant in catches to the east of Shetland and near Fair Isle.

An attempt was made to take a large sample of phytoplankton but, as usual at this time of year, it proved futile. Unfortunately a full day could not be spared for this one job.

Productivity

Detailed sampling in a small area west of Fladen was carried out twice. The first survey was made on the 1st and 2nd and repeated on the 3rd and 4th July. Gulf III hauls were made every half hour. The plastic pipeline, pump fed from an inlet below the water line, proved a successful means of collecting water samples at the same time as the plankton hauls. Salinity, phosphate, nitrate, chlorophyll, leptonel, and C¹⁴ samples were taken in this way.

Trawling

With the exception of three trawls missed due to the winch breakdown, the amended North Sea programme of 21 hauls was completed successfully. A badly torn trawl and a parted warp provided considerable extra work for the Fishing Mates and crew, and it was only due to their efforts that the gear was retrieved and no working time lost. Catches in general were small, although flatfish, cod and haddock were present in all hauls. A few whiting were taken in almost all hauls and when in fair quantity were associated with very large catches of G. esmarkii. Herring were practically absent throughout the cruise.

Echosounding

Very few traces were obtained and the only worthwhile marks appeared north of Shetland, east of Fair Isle and in the Moray Firth. This agrees with commercial reports from the area.

Norway Lobsters

The routine survey was carried out at the end of the cruise and very few Nephrops were taken. In addition, during this period, several standard hauls were made for phytoplankton culture work.

R. G. G. LAWRIE

13th July, 1960.

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