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CRUISE REPORT

FRS "EXPLORER"

June 7-July 9, 1969ObjectivesPart 1 Hydrographic survey in a region north-east of Shetland.

- Part 2
- (a) Sule Skerry to Munken, Faroe. New hydrographic section.
 - (b) Faroe routine trawl survey.
 - (c) Faroe Bank - Butt of Lewis, standard hydrographic section.

Part 3 Pelagic trawling for blue whiting.Part 1 (7-16 June)

"Explorer" left Aberdeen on Saturday, 7 June 1969, at 0800 hours. A hydrographic section was made between 62°00'N, 2°00'E at the edge of the Northern Shelf bordering the Norwegian Deep, and 60°56'N, 00°40'W, off Muckle Flugga, Shetland commencing on 8 June. Simultaneously, a total of 16 parachute drogues were released at six positions, each drogue being tracked for at least 13 hours. Additional hydrographic stations were worked near the drogues by conventional methods and using the recording temperature-salinity-depth probe. These observations supplemented earlier ones made in this area.

Preliminary trials were made of an automated chemical analysis system incorporating channel switching and automatic calibration. The small space available in the inner laboratory proved a major handicap in dealing with minor teething troubles.

A full set of samples was taken with the Modified Plankton Indicator for the SMBA Oceanographic Laboratory, Edinburgh.

The echosounder was in continuous operation and fully annotated.

Part 2 (17 June-2 July)

Changes in ship's and scientific personnel were made at Lerwick, delayed somewhat by a cancelled flight due to fog.

- (a) The Sule Skerry-Munken new hydrographic section was begun on June 18 and completed in 24 hours. Winds were moderate but an unusually large broken swell made working conditions difficult.
- (b) In improving conditions, a start was made on June 19 to the trawling survey which was completed on July 1. A summary of the catches is given in the Table at the end of the report.
 - (i) Trawl catches south and west of Sydero were dominated by saithe and cod with small haddock making up the bulk of the small mesh catch.
 - (ii) Very few fish were found from hauls in West Bay.
 - (iii) Catches over Faroe Bank consisted of cod, saithe and haddock. A good catch of large cod was taken in the final haul.
 - (iv) On northern grounds, haddock and lemon sole were the dominant species. In this area in particular, hauls made in the evening yielded larger catches than those made in daylight.

- (v) Small haddock were prominent in catches on Sando Bank.
- (c) The Faroe Bank - Butt of Lewis hydrographic section was worked in fine weather on June 22 and 23.

Plankton (Part 2, (a) and (c))

Samples at the southern end of the Sule Skerry - Munken line, on the shelf, were generally poor; the largest samples being composed almost exclusively of Cosmetira pilosella.

On the Faroe Bank - Butt of Lewis line, north of the Butt of Lewis, salps had penetrated on to the shelf and there were also the usual mixed water species such as Cosmetira pilosella, Lensia conoidea, Sagitta serratodentata, and Sagitta elegans.

Samples obtained from oceanic waters during the cruise were bulky due to the presence of large numbers of Salpa fusiformis, especially at stations off the continental shelf. Samples from these stations were also rich in chaetognaths, notably Sagitta maxima and Eukrohnia hamata and the planktonic polychaete Tomopteris helgolandica. Of the euphausiids, the furcilia stages of Meganyctiphanes norvegica and post larvae of Thysanoessa longicaudata were the most common, but some of the more exotic species were collected at the deeper stations.

M. poutassou larvae were sampled in small numbers at some stations between latitudes 60° and 61° N.

30 samples were collected for the SMBA Oceanographic Laboratory Edinburgh using the modified plankton indicator.

Part 3 (4-9 July)

After changing over scientific staff, the ship left Stornoway at 0940 hours on 4 July. In the force 8 wind, shooting the pelagic trawl was not possible, and a northerly course was set for the area north-east of Shetland where fish traces were most intense on the first part of the cruise.

The following day, three hauls were made, but only the last with the Netzonde in use. On this first attempt the transducer cable parted and to allow time for repairs a short echo-survey was carried out to locate fishable traces.

On 6 July the Netzonde was used successfully in moderate traces but few fish were caught. During the night the ship steamed over the shelf to search for "blue whiting" traces in deep water. None were found, however, and trawling was continued next day off Muckle Flugga. After a number of poor hauls, the ship steamed south to the area off Lerwick where commercial boats were known to be catching herring. No clear traces were located by noon on 8 July, at which time the "Explorer" received an appeal for aid from the "Sir William Hardy", which had fouled her propeller with a net west of Shetland. The "Explorer" took her in tow to Scalloway about 2000 hours and then set a course for Aberdeen, finally docking at 2100 hours on 9 July.

During the 3½ days available for work, seven hauls were made with the pelagic trawl. No fish were caught in three hauls, less than ten fish in four, and a single haul made using the Netzonde to tow through traces at night yielded ½ basket of mackerel. Despite the disappointing catches, the results with the Netzonde nevertheless suggest that the net fishes satisfactorily. The vertical spread of the net mouth varied between four and six fathoms and the depth could be controlled with accuracy by changing the warp length or engine revs. To facilitate future pelagic trawling, a series of calibrations between depth, warp length and engine revs was made during a nine hour tow that yielded four fish.

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5.9.69

FRS "EXPLORER" ROUTINE TRAWLING - FAROE - JUNE 1969

CATCH SUMMARY - Baskets per hour

| Area | Station No. | Cod | Saithe | Haddock | L.Sole | Mixed | Small Mesh | Time (BST) of Shooting | |
|-------------------------|-------------|--------------------------------------------------------------|----------------|----------------|----------------|--------------------------------|----------------|------------------------|------|
| <u>S & W Sydero</u> | | | | | | | | | |
| | 5 | 5 | | | | 1 | 2 | 0850 | |
| | 4 | 2 | 20 | | | Ling 10 | $\frac{1}{2}$ | 2 1320 | |
| | 7 | (This position 7 hauls, 4 unsuccessful - net torn to shreds) | | | | | | | |
| | 40 | 1 | $\frac{1}{2}$ | | | Sebastes $\frac{3}{4}$ | $\frac{1}{2}$ | $\frac{1}{4}$ 1500 | |
| | 8 | 6 | | $\frac{1}{2}$ | $\frac{1}{2}$ | Whiting 2 | $\frac{1}{2}$ | $1\frac{1}{2}$ 1605 | |
| | 41 | 2 | $\frac{1}{2}$ | | $\frac{1}{2}$ | | $\frac{1}{4}$ | 1925 | |
| <u>Sydero Bank</u> | | | | | | | | | |
| | 10 | $2\frac{1}{2}$ | 3 | | | Small Halibut $\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{1}{8}$ 0845 | |
| <u>Faroe Bank</u> | | | | | | | | | |
| | 2d | $1\frac{1}{2}$ | 3 | 1 | | | $\frac{1}{2}$ | $2\frac{1}{2}$ 0850 | |
| | 2c | 3 | 2 | 1 | | | | $1\frac{1}{2}$ 1215 | |
| | 2b | 1 | 5 | | | | $\frac{1}{2}$ | $\frac{3}{4}$ 1425 | |
| | 1 | $1\frac{1}{2}$ | 2 | $\frac{1}{2}$ | | | 2 | 1 1830 | |
| | 2 | 9 | $2\frac{1}{2}$ | | | | $\frac{1}{2}$ | $1\frac{1}{4}$ 2205 | |
| <u>Sando Bank</u> | | | | | | | | | |
| | 13c | 2 | $4\frac{1}{2}$ | | | | | 1 1200 | |
| | 13d | $\frac{1}{2}$ | 3 | | | | $\frac{3}{4}$ | $2\frac{1}{2}$ 1515 | |
| | 13b | 2 | 3 | $\frac{1}{2}$ | | | $1\frac{1}{2}$ | 3 1800 | |
| | 13a | 3 | 3 | | | | $1\frac{1}{2}$ | 4 2058 | |
| <u>West Bay</u> | | | | | | | | | |
| | 35 | | | | | | 1 | $\frac{1}{3}$ 0855 | |
| | 34 | 2 | | 1 | 1 | | $\frac{1}{2}$ | $1\frac{1}{2}$ 1935 | |
| | 33 | 4 | | $\frac{3}{4}$ | $\frac{1}{2}$ | | $\frac{1}{2}$ | $1\frac{1}{2}$ 2225 | |
| | 39 | 3 | 2 | | | | $\frac{1}{4}$ | 1 0845 | |
| <u>N W Faroe</u> | | | | | | | | | |
| | 29 | 5 | $9\frac{1}{2}$ | | | | | nil 1950 | |
| | 27 | 15 | | 3 | $2\frac{1}{2}$ | | $\frac{3}{4}$ | 1 2250 | |
| | 30 | $2\frac{1}{4}$ | | $4\frac{1}{2}$ | $\frac{1}{4}$ | | | $1\frac{3}{4}$ 0840 | |
| | 26 | 2 | | | | | $\frac{3}{4}$ | 1 1055 | |
| | 24 | very few fish | | | | | | | 1325 |
| <u>N E Faroe</u> | | | | | | | | | |
| | 20 | | $\frac{3}{4}$ | | | | 2 | 1 1655 | |
| | 21 | 1 | | 3 | | | $\frac{1}{2}$ | 2 1945 | |
| | 22 | $\frac{1}{2}$ | | 3 | $\frac{1}{4}$ | | | $1\frac{1}{4}$ 2135 | |
| | 17 | very few fish | | | | | | | 0845 |
| | 46 | 4 | | $\frac{3}{4}$ | $\frac{1}{2}$ | | | $\frac{1}{2}$ 1030 | |
| | 15 | 1 | | $\frac{3}{4}$ | | | $\frac{1}{2}$ | $\frac{1}{2}$ 1645 | |
| | 47 | 9 | | | $4\frac{3}{4}$ | Angler 2 | | $\frac{1}{2}$ 2120 | |
| | 16 | 15 | | $5\frac{1}{4}$ | $2\frac{1}{2}$ | Skate 1 | 1 | $1\frac{3}{4}$ 2325 | |