CONFIDENTIAL: Not to be quoted without reference to the Laboratory.

S.16 5SP58

CRUISE REPORT

F.R.V. "S C O T I A"

30th May-24th June 1958

Narrative

"Scotia" left Aberdeen at noon on Friday, 30th May, and headed for the Pentland Firth where the standard sampling programme with grab and Agassiz trawl was worked between 0400 and 0600 hours on 31st. The ship then steamed to the first station of the Butt-Faroe line, which was occupied at 1430 hours on the same day. The weather was steadily deteriorating and before the second station was reached it was decided to return to shelter in Broad Bay. On Sunday, 1st June, a call was made at Stornoway so that a member of the crew could receive medical attention. He was able to resume duties after treatment and, in improving weather, work was begun on the hydroline at 1330 hours on Monday, 2nd June. The extended Butt-Faroe line of 20 stations was completed in excellent weather 48 hours later, a halt having been called on Faroe Bank for halibut tagging. The ship then headed for the Faroe plateau and the main trawling programme was begun on the morning of 5th June. Grounds off the west and north coasts were worked, and during this time trouble was caused by a defective fuel pump. When, in addition to this, medical attention was again required, it was decided to call at Klaaksvig, where the ship was berthed on 7th and 8th June. Trawling was resumed on 9th June when grounds on the east side - off Fuglo Head and near the entrance to Arni Fjord, were worked. In the latter area halibut catches were particularly good and work was concentrated here for the next five days. On Sunday, 15th June, the ship took water at Trangisvaag, and on the following day began work on grounds off Nolso. On the seventh haul the gear fouled an underwater obstacle and the net was too badly damaged to repair. Since by this time the halibut tagging target had been considerably exceeded it was decided to spend the remaining time at Faroe on a trial of the nylon trawl. The condition of the trawl winch had been causing anxiety but fortunately it remained serviceable until the trawling was finished. On Wednesday, 18th June, work was begun on the Faroe-Flugga hydrographic line and this was completed at 1715 hours on the following day. Weather conditions had been deteriorating and by the time "Scotia" entered Lerwick on the morning of 20th June, strong winds were blowing. As arranged, Mr. Steele and Mr. Baird joined the ship at Lerwick, and Mr. Martin returned to Aberdeen. By Sunday, 22nd June, the winds had decreased and the ship sailed at 1100 hours. Work on the Fladen ground, including productivity and bottom sampling was begun at 0300 hours on the following day and was completed 30 hours later in exceptionally good weather. In this area also the mark VI underwater camera was tested, and on the passage to Aberdeen the Eckman current meter was successfully operated. The ship docked at Aberdeen on Tuesday, 24th June, at 2000 hours.

Results

Hydro-plankton Both standard Faroe-Shetland lines were completed, with additional stations beyond Faroe Bank and additional hydro samples at 250 m. on the slope stations. For the plankton Dr. Fraser reports that Calanus was abundant at the Faroe end of both lines. Over deep water between the shelf and Faroe Bank there was an oceanic fauna, with salps, and here Calanus was almost absent. Near the Shetland edge of the shelf salps were extremely abundant for this time of the year, particularly in the lower layers (900 m.-250 m.) and swarms of Themisto were found at the surface. The diatoms Chaetoceros debilis and Nitzschia seriata were found in Calanus areas, and Rhizosolenia in salp areas.

Trawling Altogether 48 one hour hauls were made with "Scotia's" 30' trawl, and since the objective was tagging, the small mesh cover was not used. Hauls were made on Faroe Bank; on the west side, off Mygganes and in Saxon Bay; at the north coast, off Kadlur; and on the east side, off Nolso, at the entrance to Arni Fjord, and off Fuglo.

Halibut were present in almost all hauls, but were least abundant in the west and north, where they averaged six specimens per hour, compared with 17 per hour on the east side. The biggest catches were made in a small area off Arni Fjord, about 40 fathoms deep and only a few square miles in extent. This was obviously a well stocked nursery ground and in one haul 46 halibut were tagged - mostly below 31 cm. long, of the 2+ age group. Further south, off Nolso, catches were also good but a higher proportion of 3+ fish (39-48 cm.) were present. Altogether 638 halibut were tagged, the plastic button tag being used for smaller specimens and the metal opercular tag for fish over 40 cm. long. With few exceptions the fish seemed to take well to the tag and swam away in good condition.

All redfish caught were carefully examined and identified as Sebastes viviparous. They ranged in size from 17-29 cm. and there was a marked difference in size between the sexes, all fish over 24 cm. being female. A spawning female of 25 cm. was caught. In all except two cases the stomach was everted through the mouth, even when the hauls were from shallow water.

Cod were present in all hauls. Over 400 stomachs were examined and the contents noted. The most common food was crustacea, particularly Hyas coarctatus and Galathea sp. Most hauls gave good samples of haddock and lemon soles, and representative samples of scales were taken. Otoliths were collected from all catfish (34 specimens) and stomach contents were examined. The food was chiefly Chlamys opercularis. A catch of megrim from Faroe Bank was preserved entire, and samples of flatfish heads from all areas were preserved for study of parasites.

The nylon trawl was towed for 35 min. after which it came fast with damage to the net. However, the catch was exceptionally good - 7 baskets of fish (1½ flats, 1 haddock, 1 cod, 1½ monk, ½ cat and 1½ rough). The net was given slightly more warp and towed rather slower (65 instead of 70 revs.) than the normal heavier gear.

Other work The mark VI underwater camera was used in 80 fathoms. A total of 120 exposures was made in four groups of thirty. The negatives are not yet available, but the general handling of the camera at sea was satisfactory.

A successful reading was obtained with the Eckman current meter. In its present frame it would be difficult to use this gear in anything but calm weather.

The echosounder was run as frequently as possible, and traces taken back to the laboratory.

A. D. McINTYRE
3rd July, 1958.

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SUMMARY CRUISE REPORT

F.R.V. "S C O T I A"

30th May-24th June 1958

Narrative

"Scotia" left Aberdeen at noon on Friday, 30th May, and after working the standard sampling stations in the Pentland Firth, occupied the first station of the Butt-Faroe hydro line at 1430 hours on the following day. Before the second station was reached strong winds made it necessary to return to shelter in Broad Bay. On 1st June a visit was paid to Stornoway so that a member of the crew could receive medical attention. He was able to resume duties after treatment and in improving weather work was begun on the hydro line at 1330 hours on Monday, 2nd June. The extended Butt-Faroe line of 20 stations was completed 48 hours later, and on the morning of 5th June the trawling programme on the Faroe shelf was begun. After working grounds off the west and north coasts, medical attention was again required, and since in addition a fuel pump was causing trouble, it was decided to call at Klaaksvig, where the ship was berthed on 7th and 8th June. Trawling was resumed on 9th June. Grounds on the east side, off Fuglo, were worked, and operations were continued here until Sunday, 15th June, when the ship took water at Trangisvaag. On the following day trawling was begun on Nolso grounds, and the ship remained in this area until the trawl was badly damaged. Then, since the halibut tagging target had been considerably exceeded, the work at Faroe was concluded with a trial of the nylon trawl. The first station of the Faroe-Flugga hydro line was occupied on the morning of Wednesday, 18th June, and the line was completed in strengthening winds on the following day. The ship entered Lerwick on the morning of the 20th, where Mr. Steele and Mr. Baird joined, and Mr. Martin returned to Aberdeen. By Sunday, 22nd June, the strong winds which had been blowing for 48 hours decreased and the ship sailed at 1100 hours. Work on the Fladen ground was begun at 0300 hours on the following day and completed 30 hours later in exceptionally good weather. After testing the mark VI underwater camera and the Eckman current meter "Scotia" docked at Aberdeen at 2000 hours on Tuesday, 24th June.

Results

Both standard Faroe-Shetland hydro lines were completed with additional stations beyond Faroe Bank and additional samples at 250 m. on slope stations. In the plankton nets Calanus was abundant at the Faroe ends of both lines, and near the Shetland edge of the shelf salps were particularly abundant for the time of the year.

Forty-eight one hour hauls were made with "Scotia's" 30' trawl without small mesh cover. Halibut were present in most hauls, but were least abundant on the west and north sides, where they averaged six specimens per hour, compared with 17 per hour on the east. A small, well stocked nursery ground was located in shallow water off Arni Fjord where as many as 46 halibut per hour were taken. These were mostly the 2+ group, less than 31 cm. long. Further south off Nolso catches were also good, but there was a higher proportion of 3+ fish (39-48 cm.). Altogether 638 halibut were tagged and most of the fish were liberated in good condition.

All redfish were carefully examined and identified as Sebastes viviparous. They ranged in size from 17 to 29 cm. but there was a marked sex difference, all fish over 24 cm. being female. Good samples of cod, haddock, lemon sole and catfish were taken, and dealt with in detail according to standing instructions.

The mark VI underwater camera was used in 80 fathoms. A total of 120 exposures was made in four groups of thirty. The negatives are not yet available, but the general handling of the camera at sea was satisfactory. The echosounder was run as continuously as possible and traces brought back to the laboratory.

A. D. McINTYRE
3rd July, 1958.