

CRUISE REPORT

F.R.S. "SCOTIA"

10th-21st February, 1964

The objectives of this cruise were

- a) to make further observations on diurnal variations in catches;
- b) to obtain further mesh selection data for Ulstron cod-ends of plaited and twisted twine construction;
- c) to compare catches made using 5 fathoms sweeps with catches using 50 fathoms sweeps.

"Scotia" sailed from Aberdeen at 10.00 on 10th February. On passage to Orkney drift indicators and markers were released at the four stations specified in the programme.

Trawling began on 11th at Auskerry on the east of Orkney, and continued there in good weather until 14th when "Scotia" sailed for Shetland. During the passage from Orkney to Shetland three hydrographic stations were done in the vicinity of Foula. On completing these stations "Scotia" sailed for Lerwick for water on 15th.

On 16th trawling was resumed on the west side of Shetland at Scalloway Deep, and continued here in fine conditions until 20th when the ship returned to Aberdeen docking at 18.30 hours on Friday, 21st February.

Trawling

Thirty-six hauls were done during this cruise, sixteen at Auskerry and twenty in Scalloway Deep. Fishing in the main was reasonable although catches dropped off considerably on the last days in each area.

Haddock was the main commercial species caught and the bulk of the catch at Auskerry lay in the range 20-28 cm (modal length 23 cm) and at Scalloway the majority caught were between 23 and 29 cm (modal length 26 cm). Whiting were scarce at Auskerry, but catches of this species improved at Scalloway. Common dab were numerous in both areas.

Light meter readings were taken several times during the cruise. In all cases bottom light readings were below 0.1 lux in surface daylight conditions.

Results

- a) Day and night effects Analyses of the data show no significant differences between daylight and darkness catches for any species. In most other experiments flatfish catches at night have been consistently higher than in daylight, but on this occasion the bottom light intensity was always below 0.1 lux, and so the surface distinction between daylight and darkness does not hold.
- b) Ulstron mesh selection It was possible to obtain reasonable data only for haddock, using the plaited Ulstron cod-end. The results summarised below are all based on six hauls each with the exception of the short sweeps in darkness average which is based on four hauls.

|              | Day | Dark | Average |
|--------------|-----|------|---------|
| Long sweeps  | 3.4 | 3.2  | 3.3     |
| Short sweeps | 3.6 | 3.6  | 3.6     |
| Average      | 3.5 | 3.4  | 3.4     |

- c) 5 fm sweeps and 50 fm sweeps As the cod-ends were changed during the cruise only the cod-end plus cover catches have been analysed. In all cases the trawl rigged with 50 fm sweeps caught more than that rigged with 5 fm sweeps. The ratios of catching power of 50 fm sweeps to 5 fm sweeps for various species for this experiment are

|                     |       |
|---------------------|-------|
| Haddock             | 1.8:1 |
| Whiting             | 3.5:1 |
| L. Sole and Plaice  | 2.9:1 |
| C. Dab and L.R. Dab | 2.8:1 |

W. B. Hall  
16th March, 1964