In confidence: Not to be quoted without reference to the Laboratory.

R.1/5 9SR63

## CRUISE REPORT

# F.R.S. 'S C O T I A'

## September 12th-30th, 1963.

Objective:

Herring larval survey.

'Scotia' sailed from Aberdeen in the morning of 12/9/63 to start the survey from the southern end. As the second leg was being completed the wind started to increase and with a south-westerly gale forecast it was decided to work the sheltered stations along the Buchan coast and the south side of the Moray Firth. The weather, and the forecast, became worse and 'Scotia' sheltered in Dornoch Firth from 0100 hours on 14/9/63 to 1200 hours on 15/9/63 when moderating weather gave some hope of continuing the survey in the Moray Firth. The swell was still too great, however, for offshore stations and 'Scotia' worked up the coast to Sinclair Bay and anchored there overnight. A fresh start was made at 0800 hours on 16/9/63 and in a spell of good weather the whole of the northern part of the survey east of Orkney, up to Shetland and down the west side of Orkney was completed. As 'Scotia' came through the Pentland Firth at midday on 19/9/63 the weather worsened and the vessel dodged across the mouth of the Moray Firth till 2200 hours on the same day, when it was possible to work again. Seventeen more stations of the southern part of the survey were completed before 'Scotia' came into Aberdeen at 0200 hours on 21/9/63 for water.

'Scotia' sailed again at 1600 hours on 22/9/63 and completed another two legs of the survey before the wind increased again from the south-west. The sheltered stations on the south side of the Moray Firth were repeated before anchoring in Dornoch Firth at 2300 hours on 23/9/63. Following an improvement in the weather 'Scotia' left Dornoch Firth at 0800 hours on 25/9/63 to attempt the Moray Firth stations but again had to seek shelter after 9 stations in Inganess Bay at 0640 hours on 26/9/63. The vessel started dragging her anchors; consequently it was necessary to heave up and to dodge in the lee of the islands in a Force 10 gale till the weather moderated and work could begin again at 0830 hours on 28/9/63. The survey was completed, except for one station, and many of the stations in the southern part of the survey were repeated before 'Scotia' docked in Aberdeen at 1300 hours on 30/9/63.

#### Plankton

Herring larvae of small size were found in quantity off the Buchan coast between 57° and 57°30'N out to 1°W, and in lesser numbers to the east of that area. Small numbers (up to 10) of larger larvae were seen in many samples around Orkney and along the south side of the Moray Firth.

## Hydrography

Surface temperatures ranged between 10.7° and 12.9°C increasing from north to south. Bottom temperatures were more variable, ranging from 7.6° to 12.0°C. There was little difference between surface and bottom temperatures over most of the area. On the most easterly stations differences of up to 4.6°C were found.

Current indicators were released to the south-east of Orkney and in the Turbot Bank area.

#### Echosounding

No large traces were found and only a few small marks.

GEORGE McPHERSON 9th October, 1963