

R1/2

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FRV *Scotia*

Cruise 11/90

11SR90

Report

13-26 October 1990

Personnel

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Objectives

1. To conduct a plankton survey off the Scottish north and west coasts (area VIa) as part of the ICES international herring larval surveys.
2. To collect surface temperature and salinity data over the survey area.
3. To collect sea water samples at specific sites for radiocaesium assay.
4. To collect live zooplankton for experimental work at the Laboratory.

Narrative

Cruise tracks for the two surveys are given in Figures 1a and 2a respectively. *Scotia* left Aberdeen at 1130 on 13 October and made passage north to the survey area, calibrating flowmeters en route and starting the station grid sampling at 1630. Over the next eight days, ending 21 October, first the north coast stations, then those west of the Hebrides and finally the Minches stations were all sampled. Only 13 hours were lost to bad weather and some additional stations were sampled to extend the survey area, particularly in the Minches. Having thus completed the prime objective in good time, and with regard to the first survey results, a second survey of the northern sector was started extending from northwest of Lewis eastward to Orkney. Samples of sea water for radiocaesium were collected from the Pentland Firth and off Cape Wrath. The second survey was completed by 0800 on 25 October and the ship returned to Aberdeen. Live zooplankton was collected off Aberdeen and the ship docked at 0900 on 26 October.

Results

The preliminary results of the herring larval surveys are illustrated in Figures 1b and 2b. A continuous record of surface temperature and salinity was obtained by thermosalinograph. Herring larvae were widely distributed during both surveys, only eight of 204 samples had none present.

The herring larval distribution on the first survey showed a series of "patches" of larvae throughout the area. The largest of these were found close to the north coast and west of the Hebrides. A series of small "patches" of larvae occurred in the Minches. In the densest "patches" the larvae were very small, at times with yolk sacs, indicating recent hatching on the spawning grounds. Larger larvae were found less abundantly and generally at more offshore positions. The results of the second survey again showed "patches" of high abundance of herring larvae although these were less extensive than those found during the first survey. The distributions revealed by these surveys show herring larvae as widely spread but with the major concentrations in coastal waters and abundance thinning out towards the shelf edge. Comparison between surveys suggests that larvae are quite rapidly transported out of the survey area. Later analysis of the temperature and salinity data and larval size analysis will enhance understanding of these preliminary results and contribute to the ICES herring larval survey database.

S Hay

31 October 1990.

Seen in draft: N McInnes



