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RV *Heincke*

Cruise 0195H

REPORT

26 June - 19 July 1995

Half Landing

Cork: 11-12 July 1995

Personnel

C D Hall	SSO (in charge)
Ms M Bell	SO
I Gibb	SO
Mrs J McMillan	ASO
J Hunter	PTO
M Bailey	Research Assistant
Ms A Ingvarsdottir	PhD Student
J Lansley	Visitor

Objectives

1. To carry out a survey for mackerel and horse mackerel eggs on the western stocks of these species.

2. To determine the vertical distribution of mackerel and horse mackerel larvae and the dispersal.

3. To sample adult mackerel and horse mackerel to obtain ovary samples for estimation of atresia.

4. To estimate respiration and egg production rates in calanus species.

5. To monitor temperature and salinity in the sampling area.

Out turn days per project: EBA - 19.5, C514 - 4.5

Narrative

Heincke sailed from Aberdeen at 1215 hours on 26 June. Two tows were made in the afternoon to test the dual Methot and OCEAN samplers and to obtain data to verify the analysis software.

Sampling, using a combination of Gulf 3, OCEAN and dual Methot samplers, and demersal trawl continued unhampered during the entire first half of the cruise, assisted by exceptionally calm water. Four flowmeter calibration tows were made for the Gulf 3 during this period. Failure of the OCEAN sampler during the first few days necessitated a return to standard Gulf 3 sampling. Repairs were eventually effected and several trials carried out, but it was decided to retain the Gulf 3 sampler during the egg survey and revert to the OCEAN during the larval work later in the cruise. At selected stations, a vertical net was deployed to sample calanus species.

The overall sampling strategy as well as the half-landing port had to be changed on 29 June after being advised that the vessel could only enter La Rochelle during 11-12 July and it would not be possible to change the dates due to administrative difficulties. The half-landing was changed to Cork on the same dates. It was proposed to carry out one west-east transect within the Porcupine

Bank area for larval sampling, immediately before the half-landing, and to complete this part of the survey after leaving Cork.

During the half-landing, Martin Bailey was forced to return to Aberdeen on medical grounds. To ensure that he travelled safely, and since the flight was not direct, Jon Lansley accompanied him on the journey.

Heincke sailed from Cork at 1000 hours on 12 July, bound for the Porcupine Bank area. The vessel immediately ran into severe weather. On arriving at the first planned survey site, south-westerly gales stopped all work. The vessel maintained station until it was possible to deploy the Gulf 3 sampler. Working west along the first transect, Gulf 3 and OCEAN/dual Methot stations were completed. Poor weather again forced a move to the next northerly transect. Conditions improved thereafter, but the time lost meant that it was not possible to cover the entire planned area.

The last dual Methot station was completed in the evening on 16 July, after which *Heincke* sailed for Aberdeen, docking there at 2400 hours on 18 July. Scientific gear was off-loaded the following day.

During the cruise, on-board evaluation of the plankton samples enabled the edges of the spawning distribution to be determined on some transects and very good area coverage was achieved.

Cruise track and stations worked are shown on the attached charts.

Results

Fish eggs were picked out from the samples collected at all 122 stations and were screened for the presence of mackerel and horse mackerel eggs.

Adult samples were caught during five trawl hauls. Mackerel were very scarce with horse mackerel predominating. Out of a total ovary sample requirement of 90 per species, four samples were collected for mackerel and 85 for horse mackerel. A further 27 mackerel ovary samples were obtained by hand-lining. The size range of mackerel was 25-41 cm with main sample modes ranging from 27-29 cm. The mackerel were aged at sea, with ages ranging from 1-10 years. The size range of horse mackerel was 11-38 cm with main sample modes spread over the entire length range. Otoliths from 27 (trawl caught) and 76 (hand-line) mackerel and 165 (trawl) horse mackerel were taken.

The dual Methot net was used on 26 stations, of which 22 were in the Porcupine Bank area. Initial length measurements were made on larval samples taken from each east-west transect.

Nineteen vertical hauls were made, after which respiration and egg production experiments were conducted on stage 5 and 6 Copepodite. Calanus were removed from each sample for chemical analysis, the remnant being fixed in formaldehyde.

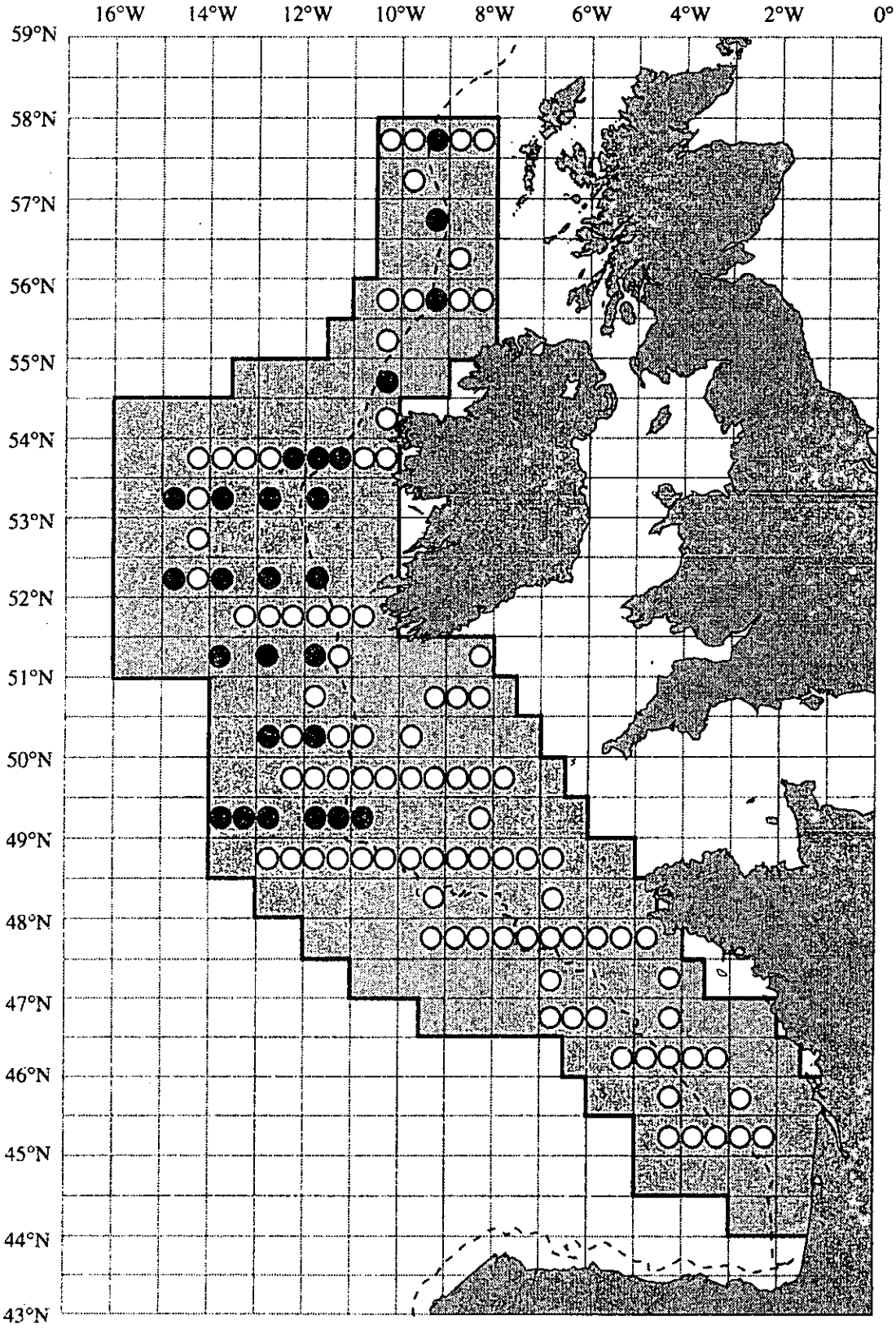
Data on sea surface temperature and salinity were monitored continuously on the vessel. Temperature, salinity and chlorophyll profiles were obtained at all plankton stations using a Chelsea CTD logger attached to the Gulf 3 sampler. During OCEAN sampler tows, an AQUAPACK logger recorded CTD, fluorescence, attenuation, light and dissolved oxygen levels. The CTD measurements were analysed after each tow and the mean temperatures at 5 m and 20 m extracted.

All samples and data were stored for subsequent analysis.

C D Hall
14 August 1995

Seen in draft: G Hoppner (Captain)

Heincke 26/2/95 – 19/7/95
Sample stations



○ Gulf III station

● Methot net/ocean sampler station

Heincke 26/2/95 – 19/7/95
Cruise track