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MINISTRY OF AGRICULTURE, FISHERIES AND FOOD  
FISHERIES LABORATORY, LOWESTOFT, SUFFOLK, ENGLAND

1983 RESEARCH VESSEL PROGRAMME

REPORT: RV CLIONE: CRUISE 12

(PROVISIONAL: Not to be quoted without prior reference to the author)

STAFF:

P O Johnson (SIC)  
Mrs B M Thompson  
R S Millner  
T J Hulme  
G J Howlett  
S Warnes

DURATION:

4-17 October

LOCALITY:

West central North Sea

AIMS:

1. To carry out a high-speed tow-net survey for herring larvae over the western portion of the central North Sea between the Farne Islands and Humber entrance (FA 37).
2. To carry out mid-water trawling to identify pelagic fish traces and obtain material for biological sampling (FA 13).
3. To obtain herring larvae for genetic studies, these to be fresh frozen in liquid nitrogen (Aberdeen).

NARRATIVE: (All times GMT)

CLIONE left Lowestoft at 0800 h on 4 October and proceeded to the Outer Dowsing area where free flow calibrations were made on the tow-net later in the afternoon. The tow-net grid commenced at 1700 h and was worked in varying and sometimes marginal weather conditions over following days and was eventually completed on 12 October off the Farne Islands. Stations were also carried out using a 1 metre diameter ring-net to obtain herring larvae from the two main spawning areas, off the Yorkshire coast and Longstone. These samples were frozen in liquid nitrogen and despatched ashore by Blyth pilot-boat on 13 October for collection by staff from DAFS Marine Laboratory, Aberdeen.

The weather then deteriorated to such an extent that little further work was possible. A limited echo-survey was undertaken off the Tyne and one mid-water trawl haul made.

Anchorage was made off Skinningrove at 2030 h on 13 October and force 9-10 southerly to south-westerly winds with gusts up to 60-70 knots forced CLIONE to remain there over the next few days. Anchor was raised at 0650 h on 16 October and a homeward passage made in force 8-9 south-westerly wind. CLIONE made overnight anchorage off Corton and docked at Lowestoft 0700 h on 17 October.

## RESULTS:

1. A total of 107 highspeed townet stations were completed and the samples preserved. An area of high phytoplankton density (Rhizosolenia) was encountered over the south-eastern corner of the grid in an area of higher surface temperature (13.5-14.5°C). Larger herring larvae were noted south of 54°N, and yolk-sac stages in an area north-east from Whitby. Larvae were scarce north of the Longstone, and those further south (55°20'N) were beyond the yolk-sac stage.
2. Six hauls were made with a 1 metre ringnet to obtain herring larvae for genetic studies by DAFS Laboratory, Aberdeen. A representative selection was taken from each of the main spawning areas and individually frozen within tubes in liquid nitrogen. In addition a further 25 larvae were individually preserved in alcohol for daily growth ring studies (Mr J Nichols).
3. The MS 44 echo-sounder was run continuously over the grid, and selected portions were recorded on magnetic tape from the Furuno colour sounder. The largest pelagic shoals were mainly found well offshore, particularly 30-40 miles east of the Farne Islands and in deeper water to the west and south of the Dogger Bank. Nearer the coast the traces were generally thin and scattered with few larger shoals. A pelagic trawl haul off the Tyne yielded only a few small sprats, mackerel and a small whiting. Weather conditions prevented any further fishing.
4. Surface temperatures ranged from 10.5-11.0°C north of 55°20'N, with a broad area of 11.0-11.7°C water south to Flamborough Head, and a marked increase in temperature up to 14.0-14.5°C over the south-eastern part of the survey area. A horizontal temperature front was evident about 30 miles east of Flamborough Head.

Strongly stratified water was still in evidence over the north-eastern part of the grid, with the thermocline depth mainly between 25-40 metres, and temperature differences of up to 3.5°C between surface and bottom layers.

P O Johnson  
16 October 1983

SEEN IN DRAFT: G Sinclair (Captain)  
R.C Newrick (Fishing Skipper)

INITIALLED: DJG

## DISTRIBUTION:

Basic list +

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