R.V. CORELLA

Report of cruise 15/1969

Staff:

R J Wood
W G Parnell
A M Watson
T J Storeton-West
G J Howlett

Duration:

29 September-11 October

Aims:

1. To carry out a tin townet survey for herring larvae in the Whitby/Dogger area.

2. To repeat the eastern half of the ICES Shetland grid in order to assess (a) the magnitude of the late hatching of herring larvae to the east of the Shetland Islands (b) the direction of larval drift from the area.

3. To make further observations on the vertical distribution of herring larvae both by day and night over as wide a range of sea-bed depth as possible, using the Lowestoft multiple plankton sampler fitted with a changing mechanism.

4. To obtain further data on the escape of herring larvae through nylon filters of various sizes using a standard net with a cover.

Narrative

CORELLA sailed from Lowestoft at 1345 hours, 29 September and set course northwards. Stations using the Lowestoft multiple sampler fitted with a changing mechanism were commenced near the Outer Dowsing Light Vessel at 2047 hours the same day, but at the second station off Whitby, worked during the early hours of 30 September, the net struck the sea bed and the changing unit sustained some damage while both the nose cone and depressor were lost. Later that morning CORELLA lay hove to for 3 hours near the N.E. Bank while repairs to the multiple sampler were carried out. Winds were gale force between S.W. and N.W. for most of 30 September and 1 October so CORELLA made passage northwards at reduced speed, no work being possible on either day because of the adverse weather conditions. CORELLA again lay hove to for 3 hours during the evening of 1 October while the twin 20 inch townets were prepared for use on the Shetland grid. The Shetland herring larval grid was commenced off Bressay at 0715 hours, 2 October in somewhat better weather and 6 stations were completed before a further gale, this time from the S.E., forced CORELLA to seek shelter in the lee of the island of Fetlar that evening. The wind was still gale force from the west next morning, 3 October, but it was then possible to work 3 sheltered inshore stations and also calibrate the twin 20 inch townets in free flow. A slight moderation in the weather during the afternoon enabled the grid to be continued to the north of the Shetlands in very marginal conditions that evening, but a marked improvement next morning resulted in the Shetland grid being completed by 1715 hours, 4 October.

CORELLA next proceeded to a position just west of Fair Isle while the multiple sampler with a spare changing mechanism fitted, was rigged and tested. Hauls with this sampler were made at Fair Isle during the night of 4 October

and next day, while on passage southwards, over both the Aberdeen Bank and N.E. Bank.

The Whitby herring larval grid was commenced at 1003 hours, 6 October in very good weather conditions and a total of 23 stations completed before work on the grid was broken off next evening while hauls were made in a patch of herring larvae off Filey with the multiple plankton sampler. These were continued next morning, 8 October, and in addition 2 hauls with the 30 inch net fitted with a cover were made. Work on the Whitby grid was recommenced at 1454 hours that day and the last station completed at 0156 hours, 10 October near to the Outer Dowsing Light Vessel. The greater part of 10 October was spent working both the multiple plankton sampler and the 30 inch net fitted with a cover in a patch of young herring larvae in the vicinity of the Outer Dowsing. The last haul of the cruise was completed at 1730 hours, 10 October and course set for Lowestoft, where CORELLA docked at 0930 hours, 11 October.

RESULTS

1. Herring larvae were present at a number of the Shetland stations but they did not seem to be particularly abundant.

2. An extensive belt of herring larvae was found stretching from off Whitby to the Dowsing, but very few larvae were taken at stations worked further than 25 miles from the English coast. Samples collected further eastwards appeared in the main to contain only phytoplankton.

3. Samples collected with the multiple sampler fitted with a changing mechanism showed that herring larvae were generally widely distributed throughout the depth range investigated although usually there appeared to also be an optimum depth. The precise nature of the vertical migrations of the herring larvae will not be clear until a detailed examination of the catches has been made.

4. Samples taken off Filey with the 30 inch sampler fitted with a cover showed that few if any of the herring larvae passed through the 60 meshes per inch filter but that there was some escape through a 40 meshes per inch net. These were in the main herring larvae some weeks old. At the Dowsing however it appeared that only one or two larvae passed through filters ranging in size from 60 to 30 meshes per inch. Here many of the larvae were quite small and probably only a week or two old.

5. Sufficient material was collected on this cruise with the twin 20 inch townets for a precise comparison to now be made between both the number and size of herring larvae taken in through 14 and 8 inch nose cones. It will also be possible to compare the sizes of larvae caught by 20 inch and 30 inch samplers in the two main larval concentrations.

Miscellaneous

Bottom temperatures and bathythermograph records were taken at a number of stations.

Plankton was collected and brought back alive to Lowestoft for both Dr Reynolds and Miss Hudson.

R J Wood
10 October 1969

Seen in draft: WC, CS.

Initialled: AJL

Distribution:

Basic list plus the following:-
R J Wood
W G Parnell
A M Watson
T J Storeton-West
G J Howlett