

Provisional: not to be quoted without reference to the writer

R.V. CORELLA

Report for Cruise 10/67

Staff:

D. Harding  
D. S. Tungate  
J. Henry  
I. Lloyd  
D. J. Smith

Duration:

1430 hours 8 December to  
0930 hours 17 December  
(All times are G.M.T.)

Aims:

1. To survey the Eastern English Channel including the Bay of the Seine, the Southern Bight and the Borkum spawning areas, for fish eggs and larvae using the Lowestoft multiple plankton sampler (30 in tin tow net). The Flanbrough spawning grounds will also be surveyed if time and weather permits.
2. The extra stations in the Bay of Seine are to cover the herring spawning, the standard stations are for all fish eggs and larvae, competitors for food, food organisms and planktonic predators.
3. To test the data-logging system on a routine planktonic sampling survey using electrically recording flow meter depth gauge and thermometer in the main filter of the net.
4. Hauls with a standard otter trawl fitted with a small mesh cover will be made in the Southern Bight for spawning fish and fish predators of planktonic fish eggs and larvae.
5. Trial hauls with a Boothbay net will be made in each spawning area for fish predators.
6. Live fish will be returned from these hauls for Dr. Purdom.
7. An echo survey will be carried out in each spawning area.
8. Productivity studies will be made daily with the aid of a coulter counter.
9. The Turbidity and the Chlorophyll A content of the surface water will be monitored continuously in each spawning area.
10. Live Calanus will be collected for the University of East Anglia.

Narrative:

CORELLA sailed from Lowestoft at 1430 hours on 8 December and proceeded southward to the English Channel with the intention of using 30 in tin tow net and other sampling gear en route.

Unfortunately the electric underwater unit and flowmeters were defective and most of this journey was spent in repairing these instruments, whilst standard mechanical flowmeters were fitted and calibrated in the 30 in multiple sampler.

Final calibrations using the electric flowmeters were made in the English Channel and sampling commenced at 1800 hours on 9 December. The weather, which had been bad throughout 8 and 9 December, deteriorated and CORELLA dodged into the lee of Beachey Head, recommencing work on

the grid at 1500 hours on 10 December. Bad weather continued and a heavy swell prevented working the grid at full speed and precluded any attempt to sample the very shallow stations.

CORELLA entered the Southern Bight on 11 December and continued along the grid of standard stations. The splice in the electric cable parted on Station 34, and the 30 in tin tow net, complete with accessory samplers and electric recording instruments, was lost in position  $52^{\circ}07\frac{1}{2}'N$   $02^{\circ}45'E$ . The spare 30 in tin tow net was then rigged on the starboard trawl warp and calibrated, and work recommenced. No attempt was made to recover the lost gear, because the trawl carried was not suitably rigged; an attempt at recovery is proposed for January 1968. The grid was discontinued at Station 68 at  $53^{\circ}37\frac{1}{2}'N$   $04^{\circ}15'E$  due to strong north-westerly winds, which later increased to gale force. CORELLA dodged into the coast near Southwold by 2300 hours on 15 December and work recommenced, testing the Boothbay net, on 16 December in the lee provided by the Suffolk coast. Trawling on the Brown Ridges (proposed for 17 December) was not possible, since the warp on the starboard winch was damaged after it jammed in the tow net block.

Continuous measurements of Chlorophyll A and Turbidity were successfully carried out using the Turner fluorometers, and of light transmission using an A.R.L. Hydrophotometer.

Samples for salinity and nutrient salts analysis were taken at all tin tow net stations.

The Coulter Counter worked satisfactorily after initial failure. Eight productivity experiments were set up and six were completed successfully.

The M.S. 24 echo sounder was run throughout the voyage and the charts preserved for analysis of fish traces.

CORELLA returned to Lowestoft on 17 December and docked at 0930 hours.

### Results

1. The survey of the Channel and Southern Bight spawning areas indicated that spawning had just commenced in both areas; very few eggs of any fish were found, and plaice eggs occurred at only nine of the sixty stations sampled. Few herring larvae were found in the Channel.
2. The productivity experiments indicated a low rate of production at this time of the year. The coastal water sediment and detritus interfere, and reduction of counts were observed in several jars.
3. Hydrographic data collected on this cruise has yet to be analysed and instruments calibrated. However, the chlorophyll A and Turbidity record charts indicate that changes of considerable magnitude occurred, particularly in coastal waters.
4. Live Calanus were obtained for the University of East Anglia.
5. The Boothbay net was tested as a possible sampling device for midwater young-fish predators. Some modifications are required to the depressor system to allow this net to fish properly, and a complete liner of small-mesh netting is also desirable.
6. Live fish eggs were not collected, since very few eggs were found in the tow-net samples and it would have taken several days to collect the quantity required.
7. No trawling was done, so no live fish were obtained.

D. Harding  
20.12.67

Seen in draft: Mr. Sutcliffe

Initialled: AJL

Distribution:

Dr. Cole  
Mr. Lee  
Captain Aldiss  
Dr. Cushing  
Mr. Burd  
Mr. Garrod  
Mr. Hill  
Mr. Bolster  
Mr. Cattley  
Dr. Harden Jones  
Mr. Margetts  
Mr. Trout  
Mr. Iles  
Mr. Holden  
Dr. Jamieson  
Dr. Purdom  
Mr. Bridger  
Mr. Mitson  
Mr. Tungate  
Mr. Williams  
Mr. Wood  
Mr. Adams  
Mr. Mills  
Mr. Kay  
General Lab.  
Lab. Registry  
Library (2)  
Mr. Whiting  
Mr. Simpson  
Dr. Reynolds  
Chief Inspector  
All D.Is  
Fisheries Registry  
Captain Craig  
Mr. Revell  
Mr. Sutcliffe  
Skipper Snowling  
The British Trawlers' Federation Ltd.  
Mr. Buchanan Wollaston  
Mr. Baird, D.A.F.S.  
Director, Dublin  
Mr. Glover  
Hydrographic Department  
Dr. Lucas  
Director, N.I.O.  
Dr. Peachey  
Mr. Shelbourne  
White Fish Authority  
Director, IJmuiden

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