

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

1974 RESEARCH VESSEL PROGRAMME

REPORT R V CORELLA CRUISE 5

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

STAFF

D S Tungate  
J H Nichols  
J W Horwood  
P Walker

DURATION

Left Lowestoft 1530 h 2 April  
Arrived Lowestoft 0920 h 10 April

LOCALITY

Southern North Sea

AIMS

1. To sample a grid of stations using a 75 cm plankton sampler
2. To collect stomachs of fish caught on the plaice spawning grounds of the Southern Bight using a young Gadoid Trawl fitted with a headline transducer.
3. To investigate the vertical distribution of plaice larvae.
4. To measure escape of fish larvae and other zooplankton using paired 50 cm plankton samplers.
5. To collect live copepods for Mrs B Thompson
6. To collect live plaice for Mr P Scholes
7. To test an experimental bottom sampler
8. To test an experimental unencased 75 cm plankton sampler
9. To collect samples of dabs for Mr Htun Han for histological studies
10. To collect phytoplankton for Dr Dodge of Birbeck College, London

NARRATIVE

CORELLA sailed from Lowestoft at 1530 h GMT 2 April and commenced sampling a grid of plankton stations at a position 52° 33'N, 02° 22'E. The grid of stations was completed by 1300 h 4 April and an area in which there were plaice larvae was chosen for the vertical distribution experiments.

The vertical distribution sampler was rigged and fished; but the nets failed to open due to an electrical fault that could not be rectified. The paired 50 cm unencased plankton samplers were then rigged for the escape experiments and this work was completed successfully by midday 5 April. The remainder of the day was used to test two types of bottom plankton samplers. Trawling commenced on the morning of 6 April using a young gadoid midwater trawl. Two hauls with this trawl produced very few fish, although good traces were seen on the echo sounder. Halfway through the third haul the

trawl became very unstable with one otter board on the surface. The gear was hauled and the rig of the net examined but nothing was found to explain its instability. The trawl was shot again and the condition was repeated, so it was decided to change over to the Granton trawl.

CORELLA steamed in to Texel during the night of 6 April to change over the doors in calm water and rig the Granton trawl. Fishing commenced again at 1200 h 7 April and continued until 1600 h 9 April.

After collecting live copepods during the night CORELLA steamed for Lowestoft and docked at 0920 h 10 April. All aims except No 3 were successfully completed.

## RESULTS

- AIM 1 A total of 36 plankton stations were sampled using the new 75cm unencased sampler. Plaice larvae were not very abundant, but reasonable numbers were found 70 miles NW of Texel and this area was chosen for the plankton gear experiments and the trawling.
- AIM 2 The young gadoid midwater trawl did not prove to be a very satisfactory sampling gear catching only  $\frac{1}{3}$  of a basket of sprats in each of the two valid hauls. On the third haul it became completely unstable, so it was decided to change over to the Granton bottom trawl fitted with cod-end covers. A total of 16 satisfactory hauls were made with this gear.
- AIM 3 The vertical distribution of plaice larvae experiments had to be abandoned owing to a malfunction in the electrical system.
- AIM 4 A total of 18 hauls were made using twin 50cm unencased plankton samplers fitted with 12.6 and 20.3 cm nosecones to measure the escape of fish larvae and zooplankton from plankton samplers.
- AIM 5 Live copepods were collected at 53° 47'N; 03° 06'E and transported to the Laboratory.
- AIM 6 Ten live plaice were transported to the laboratory for Mr Scholes.
- AIM 7 Two types of experimental bottom plankton samplers designed to sample the plaice larvae that had taken to the bottom were tested and the results were promising.
- AIM 8 The 75cm unencased experimental plankton sampler was used as a routine sampler on the plankton grid and a total of 36 tows were made with it. It was stable when towed at 5 knots without an external fin and when fitted with a 44.5cm nosecone and a 0.270mm meshed net, gave a filtration efficiency of 96.8%.
- AIM 9 Dab samples were collected for Mr Htun Han for histological studies
- AIM 10 Phytoplankton was collected at the Smiths Knoll Lightvessel for Dr Dodge of Birkbeck College, London.

A stratified sample of sprats were preserved for Mr T Hume. Several Twaité Shads were caught in the Granton trawl and this information has been passed to Mr Blacker.

D S Tungate  
1 May 1974

Seen in Draft J E B  
C N S  
INITIALLED A J L  
DISTRIBUTION D S Tungate  
Basic List J H Nichols  
J W Horwood  
P Walker