

Provisional: Not to be quoted without reference to the writer

R. V. CLIONE

Report on Cruise 9, 1968

Staff: A. R. Margetts      Duration: 23 August -  
         G. P. Arnold                          3 September 1968  
         I. L. Davies  
         L. Emerson  
         N. D. Pearson  
         D. Ofori-Adu

Note: This cruise was worked in close association with R. V. CORELLA. See also Report for CORELLA Cruise 12/1968.

Aims:

1. To study the reactions of pelagic fish to a pelagic trawler and trawl with the aid of sonar, the 6-transducer trawl sounder equipment (on CORELLA), underwater television and underwater cameras.
2. To make some measurements on a pelagic trawl.
3. To practice sonar technique and trawling on to a target.
4. To collect and bring back live to Lowestoft, some dogfish or other elasmobranch fish, if possible.
5. If opportunity and time permit, to obtain herring sample length measurements.

Narrative

CLIONE left Lowestoft to 0930 hours August 23 and met CORELLA off Aberdeen at 1500 hours August 24. From appraisal of CORELLA's search results and of fishery reports we decided to start work in the Shetland area; the fishery to the south of Aberdeen Bank with big continental trawlers was too intense for our purposes and prospects off the Yorkshire coast were poor.

August 25 and 26 were spent in searching all down the east side of Shetland before promising traces were found off Fair Isle and Sumburgh Head. Fish shoals in this area were worked on from August 27-29 inclusive, but after this they dispersed and other suitable ones could not be found in the area. So we moved south. On August 30 the trawlers had left Aberdeen Bank but we saw only a few light traces there. Helpful information was received from District Inspector, North Shields. We found no useful traces off Farne Islands or near Farne Deep, so proceeded to the Whitby fishery. On August 31 we found shoals of spawning herring near a big fleet of Dutch trawlers. Only one small shoal was found on September 1st and by September 2nd both the fish and the Dutch trawlers appeared to have left the area. Searching terminated at 1000 hours September 2nd and course was set for Lowestoft. CLIONE berthed at Lowestoft at 0645 hours September 3.

Results

Aims 1-3. The few sizeable shoals available were, separately, of immature herring and mackerel at Shetland and spawning herring at Whitby. Smaller pelagic shoals of haddock, whiting and gurnard were abundant at Shetland. Useful shoals

were only in evidence in the early mornings and evenings. The new sonar worked well but the time we were able to spend actually working on shoals once they had been located was too limited for us to be able to make a full appraisal of the potential of the technique planned for this experiment. In the event, we were not able to make many fish-movement observations (that is, with the sonar as distinct from the multi-transducer apparatus on CORELLA) and it is probable that our plan was a little too ambitious. At Shetland the shoals of immature herring gave good hard echoes and the mackerel gave vertically broken echoes. At Whitby, the spawning herring gave very woolly sonar echoes, frequently very difficult to distinguish from bottom echoes or ships' wakes. The best shoal at Shetland was picked up at 2,000 m range as compared with 800 m at Whitby.

Herring and mackerel shoals were interspersed at Shetland and haddock occurred in quantity especially near the surface in the evenings. Pelagic trawling there once caught 25 baskets herring and 6 baskets mackerel and on another occasion 10 baskets haddock (modal length 20 cm). Feathering into shoals caught numerous haddock, gurnards, whiting, coalfish and mackerel. From the few trawl hauls made the best catch was 30 baskets spawning herring with 6 baskets cod at Whitby.

CORELLA's trawl was picked up as a sonar echo. The hull of the trawler and the otter boards gave fairly distinctive traces but the echo from the net with headline floats was not so hard as was expected and was easily confused with surrounding echoes, e.g. of the ship's wake.

Ains 4 and 5. No elasnobranchs were caught in the later part of the cruise so no live fish were delivered at Lowestoft.

Samples of herring and mackerel were measured and the few horse-mackerel caught were frozen and brought in for Mr. Macer.

A. R. Margetts

Seen in draft: M. R. S.  
A. H. B.

Initialled: H. A. C.

Distribution:

Basic list, plus the following:

Mr. Margetts  
Mr. Arnold  
Mr. Davies  
Mr. Emerson  
Mr. Pearson  
Mr. Ofori-Adu