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

1970 RESEARCH VESSEL PROGRAMME

REPORT: RV CLIONE: CRUISE 10

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

STAFF:

A R Margetts
J P Bridger
I L Davies
W L Huggins
J Rous
S Devadason (Part-time)
P Gedge (Part-time)

DURATION:

Left Lowestoft 2030 hours 17 July

Arrived Lowestoft 1115 hours 6 August

All times are British Standard Time

LOCALITY:

Shetland and off NE England

AIMS:

1. To use the ARL scanner to observe shoals of especially herring fished by the pelagic trawl of RV CORELLA

2. To gain experience of the use of the scanner in a thermocline area

3. If convenient, to observe by scanner and by sonar the fishing action of drift nets

4. Observation by scanner of the action of the Dutch herring trawl and reaction of spawning herring to it

5. To film operations for Civil Service Commission film

NARRATIVE:

CLIONE left Lowestoft at 2030 hours 17 July and proceeded northwards. A coarse grid echo and sonar search for pelagic fish shoals was made off the Yorkshire and Northumberland coasts and in the Montrose Bank - Aberdeen Bank area en route to Shetland. There a pelagic fish shoal survey was started with CORELLA at 0500 hours 20 July. The only substantial trace found was to the westward off St Magnus Bay, very probably of sandeels. As weather prospects on the west side of the islands were poor on 21 July both ships made sonar trials on a rigged target before CLIONE went into Lerwick at 1700 hours to fit the scanner dome and put to sea again at

2000 hours. A further search off north east Shetland on 22 July revealed only a few fish traces and those were over the rocks mostly inshore, so both ships set out in a heavy swell to where thr purse-seiners were working 20-30 miles west of Muckle Flugga and Foula. Amongst these ships on 22-23 July only very occasional solid traces were found in daylight near the seabed although some of the ships were making good catches both in daylight and darkness. In good weather with ground swell, sector scanner observations were made on CORELLA's 800 mesh pelagic trawl on 23-25 July to make measurements and to familiarise operators with what they might expect to see and interpret under a variety of trawling conditions. A wreck off Foula was inspected for the Admiralty Hydrographer before moving to the east side of the islands again to make a further echo-search, bathythermograph observations, and scanner target effectiveness measurements with a seabed float array (the "caterpillar") on 26 July. After inspecting another wreck off Fetlar, CLIONE berthed at Lerwick at 1645 hours 27 July. There the dome was taken off for inspection, found to be intact, and replaced.

At Lerwick Mr Gedge joined the ship on 27 July and Mr Devadason left on 28 July.

CLIONE left Lerwick at 0530 hours 29 July to work where Scottish purse-seiners were doing well in a night-time fishery for herring to the north-west of Ramna Stacks. In daylight we found only a few traces near the seabed and in darkness amongst the purse seiners we found only small echo sounder traces and made no sonar contacts. However, night-time trawling in that fishery would have been impossible. So both ships set off for the ground to the north-west of Orkney but bad weather led to a change of plan on 30 July. Reports of the north-east England herring fisheries were encouraging so the dome was taken off in Kirkwall Bay between 1815 and 1915 hours and course set southward. Dome repairs were effected on the steam and echo-search before it was replaced in Tees Dock on 31 July where the ship berthed at 2245 hours and left at 2345 hours.

From 4 August sector scanner observations were made on CORELLA's 1200 mesh pelagic haul in the Whitby - Blyth area where a variety of small shoals but no big herring shoals were found. Occasionally fish were seen near the net. Two wrecks were surveyed for the Hydrographer. On 4 August, observations were made on CORELLA's bottom herring trawl. The target "caterpillar" excercise was extended to include depths of 9 and 20 fathoms. CLIONE berthed at Tees Dock at 0800 hours 5 August, de-domed, and left again at 1100 hours. Bathythermograph observations were made off Whitby.

CLIONE berthed at Lowestoft at 1115 hours, 6 August.

RESULTS:

1. On the occasions when fish were seen in daylight near the top of the pelagic trawl net many of them (species unknown) definitely took avoiding action and cleared the headline. But the numbers of this type of observation were unfortunately very restricted both by the absence of the right type of shoals and by the sheer difficulty of getting the net, fish and observing ship into convenient relative

positions. With long bridles and big net gape it was possible to view the otter board, bridle and net regions simultaneously only when the net was very shallow and close in front of the scanner. When high dip angles had to be used only a small part of the trawl could be seen at one time, interpretation of net mouth ropes became tricky and interference patterns were a nuisance.

2. An extensive series of pictures and measurements was obtained of both the 800 mesh and 1200 mesh Engel pelagic trawls fished at a variety of depths and speeds.

3. The Dutch bottom herring trawl proved to be a very poor target even at only 26 fathoms, probably because of the absence of floats and the extensive use of combination wire.

4. In the areas worked, bathythermograph observations showed a fairly steep temperature gradient in the upper waters and a sharp change with depth to uniform temperature but no true thermocline.

5. Four of the wrecks on Admiralty Hydrographer's prescribed list were effectively found and surveyed.

SEEN IN DRAFT: J E M Balfour (Master) A R Margetts

A H Button (Fishing Skipper) 10.8.70

INITIALLED: HAC

DISTRIBUTION

Basic List

A R Margetts
J P Bridger
I L Davies
W L Huggins
J Rous
S Davadason (Part-time)
P Gedge (Part-time)
HIB Shetland (Lerwick)
FO Shetland
Ships Agent Lerwick