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In Confidence: Not to be quoted without reference to the Laboratory

CRUISE REPORT

FRV "CLUPEA"

14 March - 8 April 1977

## Objectives

- 1) To carry out pelagic and bottom trawling in the area of Ballantrae Bank to obtain samples of herring.
- 2) To collect herring gonads for rearing experiments.
- 3) To carry out intensive surveys over Ballantrae Bank and around Corsewall Point to estimate the production of herring larvae.
- 4) To carry out surveys over the whole Clyde area to estimate drift, growth and mortality of herring larvae.
- 5) To make observations on the position of scallop dredgers perciting in the area of known herring spawning grounds.

## Narrative

After an extremely rough passage from Shetland "Clupea" arrived in Troon in the evening of Friday 11 March. The first larval survey of the Ballantrae Bank area was carried out on 14 March. The middle part of the Bank was surveyed on 15 March prior to midwater trawling for herring samples. Owing to problems with the gear caused by the after trawl door surfacing during towing no fish were caught even though a number of traces were seen on the echosounder. On 16 March, after completion of a survey of Ballantrae Bank, a further attempt was made to fish with the midwater trawl, the rigging of the net, length of sweeps etc having been checked the previous night. During this haul, made in deeper water, the gear towed without the after door surfacing but it was obviously not performing properly as the after warp was considerably higher than the forward one. On 17/18 March gale force S - SW winds prevented any work being carried out.

On 21 March a further survey of Ballantrae Bank was carried out. On 22 March a haul was made along the edge of Ballantrae Bank using a bottom trawl and about 3 baskets of fish, mostly sprats and small whiting were caught. About of a basket of herring were taken of which all the larger herring were in spawning condition. A survey of the area around Corsewall Point was then completed before "Clupea" headed for the Bennan Head grounds to carry out another trawl haul. On this occasion only about 1 basket of fish were caught but about on the herring in spawning condition. On 23 March a further survey of Ballantrae Bank was completed before "Clupea" headed for Greenock for the crew's long weekend break.

"Clupea" sailed from Greenock at 1500 hrs on 29 March but was unable to carry out any work during the rest of that week because of persistent gale force westerly winds.

On 4 April "Clupea" again surveyed the Ballantrae Bank area but was unable to complete the survey because of deteriorating weather conditions. On 5 April a bottom trawl haul was made along the edge of Ballantrae Bank and although almost 2 baskets of herring were caught very few were in spawning condition. The rest of the day was spent surveying the Corsewall Point and Ballantrae Bank area. On 6 April strong westerly winds prevented "Clupea" operating on Ballantrae Bank so the opportunity was taken to survey the area around the South of Arran where ripe fish had been found earlier in the cruise. On 7 April the final survey of Ballantrae Bank was carried out before "Clupea" headed for Troon where the scientific gear was offloaded on 8 April.

## Results

Trawling - During the cruise three successful hauls were made using a bottom trawl, and several unsuccessful attempts were made to use a midwater trawl. Herring were caught in all three hauls with the bottom trawl. On 22 March the majority of the large herring caught were ripe and running but by 5 April the large herring were mostly recovering spents. The catches at Ballantrae Bank both continued a considerable admixture of small immature herring.

Larval surveys - In all seven surveys of Ballantrae Bank, two around Corsewall Point and one off the South of Arran were carried out but on none of the surveys were more than a few herring larvae observed. This leaves one uncertain whether the spawning stock is at such a low level that it is not producing detectable numbers of larvae or whether the main hatching had been missed due to the timing of the cruise and the repeated loss of working time due to bad weather. The presence of catchable quantities of ripe fish as late as 22 March would indicate that at least some of the spawning was too late for hatching to have occurred before the end of the cruise.

On none of the occasions when "Clupea" was operating on Ballantrae Bank were any scallop dredgers seen.

David W McKay 20 April 1977

Seen in draft - A Mair