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IN CONFIDENCE - NOT TO BE QUOTED WITHOUT REFERENCE TO THE LABORATORY

Cruise Report

RS Explorer

2 March - 9 April 1975

Objectives

1. To perform an acoustic survey of the blue whiting stocks west of the British Isles in conjunction with FRS Cirolana.
2. To carry out fishing with pelagic trawl as required to identify echo traces and provide samples for biological investigation.
3. To assist WFA and TRS by passing information on blue whiting concentrations to the Arctic Privateer.
4. To use a Continuous Plankton Recorder for IMER, Edinburgh, for investigation of blue whiting egg and larva distribution.

NARRATIVE

Explorer sailed from Aberdeen on the evening of 22 March and proceeded directly to rendezvous with FRS Cirolana at 57°25'N, 09°50'W for intercalibration. A joint survey was then carried out over a total track of 40 miles at the end of which Cirolana departed for Grimsby and Explorer commenced the survey proper. The acoustic survey was conducted as shown on the attached track chart until the afternoon of 28 March when Explorer was forced to stop for temporary engine repairs. The survey was continued during the evening, but on 29 March Explorer proceeded to anchor in sheltered waters off Stornoway to complete the repairs. During the period at anchor, acoustic calibration of the echosounder and integrator was carried out.

On 30 March engine trials were performed, and since the weather so far had been too bad to allow any fishing, an opportunity was taken to shoot the pelagic trawl to check the gear and the netsonde equipment. Explorer then proceeded to Stornoway to change personnel, J Richards being landed to join the Arctic Privateer and Macdonald taking his place.

Explorer left Stornoway on the morning of 1 April to continue the survey, and the grid was completed at 61°00'N, 06°00'W on 5 April. It was then decided to go south to join the Arctic Privateer, which by this time was taking good catches west of Barra Head, to survey the surrounding area and fish in a region of known high concentration. On the way, Explorer stopped south of Rosemary Bank to fish a reasonably dense trace, and remained there until the evening of 6 April. The weather then deteriorated to such an extent that Explorer had to run for shelter and the plan to join the Arctic Privateer had to be abandoned. Since there was no prospect of the weather improving it was decided to return to Aberdeen, and after a rough passage Explorer docked on the morning of 9 April.

Results

1. Acoustic Survey
Despite the bad weather, the acoustic survey was carried out satisfactorily. Assuming a target level of -34dB per kg, the mean density of blue whiting in the area was calculated to be 33 tons/cm², and the total quantity to be 6.3 million tons. These figures are appreciably smaller than those found in April 1974, but

there is considerable evidence to show that blue whiting were still moving into the area in large numbers. In particular, the Arctic Privateer was catching large quantities of fish towards the end of the survey period in the area west of Barra Head where the concentrations had been low at the start of the survey, and during the last day of the survey much higher densities were found when Explorer recrossed the earlier survey tracks.

The areas of densest concentration were similar to those found in April 1974, that is around the Wyville-Thompson ridge, south of Rosemary Bank, and off the edge of the continental shelf west and south of St Kilda. As in previous years, the blue whiting were found mainly at a depth of about 400 metres, and a shallower layer at about 200-metres depth which is thought to be mostly myctophids and pearlsides was also present over much of the area.

2. Fishing

The fishing effort during the cruise was severely affected by bad weather. It had been planned to do at least one haul per day, but up till the call at Stornoway no fishing at all was possible. During the second part of the cruise, hauls were made when the fish density was reasonable, but bad weather again prevented the fishing effort which was planned for the last two days of the cruise. The majority of the fish caught were ripe, but only a very small proportion were spent, indicating that spawning was slightly later than usual.

3. Co-operation with Arctic Privateer

Communication was maintained with the Arctic Privateer throughout the cruise, but because of the late start of the Explorer survey and the apparent late arrival of the blue whiting in the area, it was not possible to provide much useful data. The Arctic Privateer eventually found a very good fishing area just off the continental shelf west of Barra Head following advice from Mr Richards which was based on previous years experience.

4. Continuous Plankton Recorder

A continuous Plankton Recorder was towed during the second part of the survey for IMER, Edinburgh. The samples obtained were sent to IMER for detailed investigation.

S T Forbes
24 June 1975

SEEN IN DRAFT BY CAPT. D RATTRAY.

