

R1/4

7

## CRUISE REPORT

FRS "EXPLORER"

9 April - 1 May 1970

## NARRATIVE:

"Explorer" left Aberdeen at 1400 hours on 9 April. After two trawl hauls on Dutch Bank and two around Papa Bank, a course was set for the first hydrographic station west of the Flannan Is. which was reached at 1400 hrs on 11 April. After a single trawl haul on the edge of the Continental Shelf the line of stations was worked without a break until the first trawl on Rockall Bank at 0730 hrs on 13 April. The trawling and plankton survey continued smoothly until 0400 hrs on 20 April when bad weather stopped work until 1000 hrs. After two more trawls and several plankton stations a course was set for Stornoway where the ship docked at 1000 hrs on 22 April.

Owing to a duodenal ulcer, Mr Headley was unavailable for work from 14 April onwards and the programme continued with three members of the scientific staff only. In Stornoway Mr Headley was replaced by Mr Newberry.

The ship left Stornoway at 0930 hrs on 24 April. After working two plankton stations at the northern end of the Minch, a line of stations was worked down the Minch to Stanton Banks, where two trawl hauls were made. The plankton survey around the Outer Hebrides was subsequently interrupted only for two trawl hauls on the edge of the Continental Shelf off St Kilda. At 2015 hrs on 28 April a gale blew up and, after sheltering for the night in the lee of the Butt of Lewis, the trawl was shot in the Minch at 1000 hrs on 29 April. A final trawl haul was made on the edge of the Continental Shelf at around 1800 hrs, and the last stations of the plankton survey were completed at 0900 hrs on 30 April. The ship docked in Aberdeen at 0900 hrs on 1 May.

## TRAWLING SURVEY

Using the SARO II industrial fish trawl, a total of 37 one-hour hauls were made: two on Dutch Bank, two on Papa Bank, four on the Continental Shelf west of the Outer Hebrides, two on the Stanton Banks, one in the North Minch and 26 on Rockall Bank.

In the Orkney area and at Stanton Bank, haddock predominated and only small catches of Norway pout were made. On the Continental Shelf two hauls north of the latitude of St Kilda yielded small quantities of blue whiting, whereas two hauls at around 57°30'N in 320 m contained 180 and 62 baskets of blue whiting respectively. The former, which was associated with a patchy, but clearly defined bottom trace, is the largest pure catch of blue whiting ever made on the industrial fish surveys.

On Rockall Bank, hauls in less than 250 m contained principally haddock with smaller numbers of Argentina sphyraena (maximum ca 15 baskets/hour). Hauls in deeper water (370-450 m) contained the anticipated large numbers of blue whiting (maximum 85 baskets), with smaller quantities of Gadiculus (maximum ca 50 baskets). Argentina silus was also represented in small numbers, with a maximum of one basket/hour.

Comparing the catching rates on hauls duplicated in April 1969 and 1970, there is no clear evidence that the numbers of either blue whiting or Gadiculus were different in the two years. At Rockall, blue whiting were caught in the largest numbers at the north eastern corner of the bank, whereas Gadiculus was commonest on the western and south eastern edges. The modal length of blue whiting lay between 27 and 29 cm. No 1+ group fish were caught.

Blue whiting were at a variety of maturity stages and gonads from a few fish of doubtful maturity (either ~~quarter~~ quarter-ripe or recovered spents) were preserved for histological examination. As in 1969 many female Gadiculus were ripe, whereas the males were at an earlier stage of maturity.

No hauls contained ripe-running specimens of both sexes of any fish, so it was not possible to hatch any artificially fertilised eggs.

Besides the commonest species, other prominent fish included up to 11 baskets of Chimaera montrosa and  $7\frac{1}{2}$  baskets of Scorpaena dactylopterus. Unusual catches were 30 Epigonus telescopus, three Centrophorus calceus and 18 Seymnorhinus licha.

Samples of ovaries were taken from blue whiting, Norway pout, Argentina silus and A. sphyraena, and stomach contents from blue whiting. Samples of A. silus, Scorpaena, Chimaera and blue whiting were also deep frozen for analysis by Torry Research Station.

#### HYDROGRAPHY

A line of nine stations was worked across Rockall Bank using the P.N. and a single cast of four reversing bottles.

#### EGG AND LARVAL SURVEYS

Throughout the cruise samples were taken with a Gulf III sampler, a WP3 net, and a standard net.

On the first half of the cruise a total of 26 Gulf III, 25 WP3 and 20 standard net samples were taken over Rockall Bank and Rockall Channel. After leaving Stornoway, a further 53 Gulf III, 17 WP3 net and 8 standard net samples were taken off the Scottish west coast. During the latter part of the survey, however, the flowmeter strops broke so that no flow readings could be taken and the standard net became irreparably torn.

At Rockall Bank, both the eggs and larvae of blue whiting were extremely scarce; the only concentrations were of up to 100-500 eggs/haul on the eastern and western edges of the bank, and over deep water off the Continental Shelf. The scarcity of larvae indicates that spawning must have been considerably later than in 1969.

On the second part of the cruise, Gadoid larvae tentatively identified as those of Norway pout were widespread in generally small numbers.

Small concentrations of up to 50 per haul were found to the west and south of the outer Hebrides, but very few were caught north of  $58^{\circ}\text{N}$  or in the Minches.

R S BAILEY  
28.5.70