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the Laboratory.

## CRUISE REPORT

FRS "EXPLORER"

14 JULY-11 AUGUST 1972

## OBJECTIVES

- (1) To survey the abundance and distribution of 0-group gadoids in mid-water between latitudes  $57^{\circ}$  and  $61^{\circ}$  N and longitudes  $03^{\circ}$  W and  $04^{\circ}$  E.
- (2) Trials of the Aberdeen fish counting equipment.
- (3) To take routine samples of the organic and inorganic environments.

## NARRATIVE

"Explorer" sailed from Aberdeen at 1830 hours on 14 July and began trawling off Aberdeen later the same evening. She worked eastwards at first, then in a northerly direction as far as lat.  $61^{\circ}$  N. On 28 July a call was made at Lerwick for water and mail, the ship sailing again on the morning of the next day. A number of stations were then worked to the west of the Shetlands before the ship recommenced trawling in the North Sea in the vicinity of Fair Isle. On 3 August "Explorer" put in at Invergordon to enable a fishing mate to attend an interview at Edinburgh. On 5 August the fishing mate was taken aboard at Peterhead, together with a crew member returning from leave and a sick crew member was put ashore. Further stations were then worked between the Fladen ground and the Devil's Hole. The cruise ended at Aberdeen at 1100 hours on 10 August.

## RESULTS

## OBJECTIVE 1

110 valid hauls were made with the Aberdeen young fish pelagic trawl. The Furuno netzonde equipment functioned well on most occasions. The majority of the hauls were at depths of 10-30 fathoms.

0+ cod were not plentiful in the catches, the largest numbers being taken some 90 miles to the east of Aberdeen and on the north-west edge of the Great Fisher Bank. However, it may be that the timing of the cruise was too late to catch representative numbers of young cod in mid-water this year.

0+ haddock were present, in rather small numbers, in almost all areas and were found to be most abundant in statistical rectangles 17, 18, D, E.

0+ whiting were taken in considerably larger numbers than cod and haddock. They were relatively scarce to the east of  $02^{\circ}$  E but were fairly uniformly distributed elsewhere.

0+ Norway pout were the most abundant of the gadoids taken during the cruise. The distribution of this species was extremely 'patchy', but the fish were, in general, more abundant to the north of 57°30'N and to the east of 01°W.

0+ saithe and blue whiting were extremely uncommon, only one specimen of the former and five of the latter being caught during the entire cruise. A number of immature sandeels were caught. These fish were most abundant off the east coast of Scotland and in the vicinity of Bressay Shoal.

Dogfish (Squalus acanthias) were taken in most of the hauls made between 57° and 61°N and 01°W and 04°E.

#### OBJECTIVE 2

Extensive trials were made with the Aberdeen fish counting equipment. The counter ran with a high degree of reliability and it was found to be easy to operate whilst the ship was trawling. A total of 89 successful runs was made whilst trawling was in progress and in addition the equipment was operated for a further 111 hours whilst "Explorer" was steaming at 8½ knots. Analysis of the results is at an early stage but the preliminary findings look encouraging.

#### OBJECTIVE 3

Hydrographical and chemical data were collected at 51 stations. A Gulf III haul was made in each statistical rectangle, and samples of plankton obtained with the THM net, were deep frozen for determination of their heavy metal content. Medusae taken in the trawl catches were counted and samples were measured. Relative to 1971, both Cyanea capillata and C. lamarckii showed a more southerly and westerly area of maximum abundance. The distribution of Aurelia aurita was similar in the two years, as were the distributions of the "oceanic" macroplanktonic organisms.

#### GENERAL

Approximately 100 young gadoids (mostly whiting) were brought back alive for use in aquarium experiments. Deep frozen samples of fish and medusae were obtained for the determination of weight-length relationships.

J R G Hislop  
12 September 1972