

In Confidence: Not to be quoted without reference to the Laboratory. 5

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## CRUISE REPORT

F.R.S. EXPLORER

7th - 28th March 1967

Objective: To participate in an international survey of the distribution of abundance of adolescent herring in the North Sea.

### Narrative

EXPLORER sailed from Aberdeen at 1100 hours on the 9th March and proceeded to the first trawling station in the Buchan Deeps. By the time this position was reached the wind had strengthened considerably and the swell was too heavy to shoot the trawl. In view of the forecast of further deterioration in the weather it was decided to seek shelter in the Forth. The next three days were spent at anchor in the Forth, in very bad weather. This set the pattern for the remainder of the cruise in which never more than two consecutive days were workable and a major part of the time was spent dodging in gale or severe gale conditions. As a result only sixteen trawl hauls were done during the cruise.

Daily contact was made by radio with other research ships taking part in the young herring survey. Arrangements were made to do a comparative fishing experiment with the research vessels ANTON DOHRN and CLIONE in rectangle J11 where ANTON DOHRN had located good catches of young herring a few days previously. On hauling the first trawl of this experiment it was found that EXPLORER's trawl was badly torn and only two herring were caught. The other two ships shot again whilst EXPLORER proceeded to mend the damaged net. By the time this was completed the weather had deteriorated enough to preclude shooting again and CLIONE and ANTON DOHRN had also to stop working after their second haul. The cruise finished at Leith where EXPLORER docked in the afternoon of the 27th March.

### Plankton

Of three hauls made off the east coast of Scotland with the Gulf III two samples were very poor in plankton but the third in rectangle C12b showed a large concentration of Thysanoessa inermis. Between 2°E and 4°E the Gulf III hauls were composed largely of small copepods and Sagitta. In rectangles G7c and G6b the Gulf III samples were green due to the presence of large numbers of Thalassiothrix longissima. Tima bairdii was present both in Gulf III and 1 m (26) samples taken south of 54°30'N.

Off the Danish coast copepods were the main constituent of Gulf III samplers with a gradation from dominantly Calanus in the north to Pseudo/Paracalanus in the south.

### Trawling

Herring catches were in all cases small - the largest catches of herring were 233 per hours fishing in rectangle G11, and 200 in G7. Elsewhere no catch exceeding 100 herring was taken. The majority of the herring caught were less than 20 cm long.

Catches of white fish were also rather poor throughout. The largest catch of haddock (which were predominantly less than 23 cm in

length) was 150 taken in rectangle G11. Catches of whiting were also rather small, the largest catch being 280 per hour in rectangle G10. However a considerable number of ovaries for fecundity determination were collected from the various positions fished. Cod catches were also poor, and a high proportion of those caught were not fit for tagging by the time they were taken aboard. In all only 13 cod were tagged and released. A feature of the trawl hauls in rectangles G10 and G11 were catches of over a basket of small mackerel with a modal size of 16 c.m.

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17th April 1967