

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

CRUISE REPORT

FRS EXPLORER

June 4--July 4 1974

OBJECTIVES:

1. To survey the abundance and distribution of 0-group gadoids in midwater in the northern North Sea.
2. To collect material for studies of the food of 0-group gadoids.
3. To bring back live 0-group fish for use in the aquarium.
4. To make observations on the organic environment.

NARRATIVE:

Explorer sailed from Aberdeen at noon on June 6 and commenced trawling on the evening of the same day. During the following 11 days the central and eastern survey stations were completed. A short call was made at Aberdeen on June 19, when live fish were put ashore. The ship sailed again at noon on June 20 and proceeded to work the stations round the Orkneys and Shetlands before finishing the survey, in the Moray Firth, on June 25. The remainder of the cruise was devoted to working at a station to the east of the Shetlands, fishing at different depths and times of day in an endeavour to learn more about diel variation in vertical distribution and feeding activity in young gadoids. Explorer docked at Aberdeen at 2030 hours on July 2nd.

RESULTS:

Objective 1. Standard trawl hauls (20 minutes fishing near the seabed, 20 minutes in midwater and 20 minutes near the surface) were made in 59 statistical rectangles. As in the 1973 survey, the Netzsonde equipment was unreliable so, to avoid damaging the net, it was sometimes necessary to keep the net well clear of the bottom during the first part of a haul.

Catches/hour of cod, haddock, whiting and saithe were generally higher than in the previous surveys of 1969-73. Of particular interest was a catch containing 9000 haddock and 3500 cod taken in rectangle G14. The geographical distributions of cod, haddock and saithe were broadly similar to those found in other years. Whiting catches showed an atypical pattern, however. In earlier surveys whiting were generally found to be most abundant to the south of lat $59^{\circ}30'N$ and to the west of long $01^{\circ}00'E$. In 1974 the largest numbers of whiting were caught to the north of $59^{\circ}00'N$. It is of interest that significant numbers of haddock and whiting were taken to the west of the Orkneys and Fair Isle, a region seldom sampled in earlier surveys,

Objective 2. A large quantity of formalin preserved material was brought back to the Laboratory for analysis of stomach content. A noteworthy feature of the 1974 results in the number of hauls containing 5 or 6 species of gadoids in quantities large enough to enable a comparison of their diets to be made.

Objective 3. Four or five hundred live 0-group cod haddock and whiting were brought back to the Laboratory. In addition some adult haddock,

whiting and gurnards were caught on hand lines and taken ashore for experimental work.

Objective 4. Gulf III samples were taken at 59 stations and chlorophyll a and organic carbon monitored at selected stations. As has been the practice for the last few years, all the Scyphomedusae taken in the trawl were counted and/or measured. Aurelia aurita were less numerous than in 1973 and 1972. The distribution of Cyanea capillata corresponded well with the distribution of young gadoids.

Addendum: The opportunity arose from time to time to fish with hand lines at night. Using this method of capture, 412 whiting were tagged, 390 in the Moray Firth off Helmsdale, 21 on the Little Halibut Bank and 1 in Aberdeen Bay. Eight sightings of cetaceans were made during the cruise.

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