

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

FRV "EXPLORER"
CRUISE 7/78
REPORT
JUNE 20 - JULY 12, 1978

Personnel:

J Hislop	SSO (in charge)
A Newton	HSO
A Robb	HSO (June 26 - July 12)
S Hay	SO
S McMinn	ASO

Objectives:

- 1) Participation in an international survey of pelagic 0-group gadoids in the North Sea.
- 2) Studies on the timing of recruitment of gadoids to the demersal phase.
- 3) Collection of live fish for the aquarium.

Narrative

Because of an accident to one of the engineer officers, and the impossibility of finding a replacement for him, sailing was postponed until 1100 hours on June 22nd, when "Explorer" left port short-handed. The following day, trials were made in Shetland waters with the standard young fish trawl (IYGPT), a much larger "delagio" trawl and a small Isaacs-Kidd midwater trawl. During the period June 23-25, the working day was restricted to 12 hours, to reduce the strain on the remaining watchkeeping engineers.

On Monday, June 26, a relief engineer together with a member of the scientific staff, joined the ship at Lerwick and at 1600 hours that day "Explorer" steamed towards the Viking Bank to begin the survey. Between June 27 and July 2, 24 stations were worked, along the edge of the Norwegian Deeps and off the Danish coast. A 24 hour mid-trip call was made at Christiansand (Norway) on July 3/4.

On leaving port, "Explorer" proceeded towards the trawling stations situated off the east coast of Scotland. Three days of strong to gale force northerly winds hampered operations but during July 5-8 a further seven stations were worked in the Moray Firth and to the east of the Orkneys. On July 9 the weather improved, and the stations to the west and north of the Orkneys were completed. In addition to the standard hauls, three 'surface' hauls were made on July 10 to collect live 0+ gadoids for the aquarium. "Explorer" then moved south, working two more stations before a fault in the steering gear made it necessary for the ship to dock at Aberdeen at 1900 hours on July 11.

Results

Objective 1.

(a) Gadoid fish. "Explorer" completed all but one of the stations that had been allocated to Scotland. Because of the way in which these stations were distributed within the survey area, it is not possible to draw any general conclusions about the abundance of young gadoids in 1978 from "Explorer's" catches on their own.

An interesting feature of the 1978 results was the relatively large catches of 0-group haddock taken round the Orkneys. Catch rates in this area equalled those reported by other vessels working in the "normal" area of high haddock density, east of the Shetlands. Catches of whiting were also relatively high in the Orkney area, as well as at the stations near the Danish coast. A possible explanation is that young gadoids originating from a north or west coast spawning area were moving or being moved into the North Sea. Catches of cod were rather small, the largest hauls being made near the Norwegian Deeps and off the Danish coast. Relatively small numbers of Norway pout were caught, but this can be largely explained by the fact that most of "Explorer's" stations lay outwith the main centre of distribution of this species.

A sample of 0-group cod was deep-frozen for the Lowestoft Laboratory.

(b) Other species. As in previous cruises of this type, the principal by-catch species were sprats and sandeels. A catch of 4000 young herring was made in the Moray Firth (rectangle 44E6). 0-group flatfish were rather scarce, some witches being caught in the Orkney area and long rough dabs near the Viking and Fisher Banks.

(c) Macrozooplankton. Scyphomedusae were abundant in 1978. Aurelia aurita was the most numerous species particularly in the Moray Firth. Cyanea capillata was most abundant west of Norway and northwest of Orkney. Cyanea lamarckii was very numerous off Denmark being abundant also around Scotland. Meganyctiphanes norvegica was the most abundant euphausiid species particularly at those stations between 2° and 4° east. Large numbers of the hydromedusan Eutonina indicans were found only west of Denmark. Stauropora mertensi was also common off Denmark and east of Scotland. The ctenophore Pleurobrachia pileus was numerous around Scotland and west of Denmark.

Objective 2.

The delagic trawl was damaged at the beginning of the cruise and this factor plus a shortage of time, meant that it was not possible to make hauls on the sea bed to study recruitment of gadoids to the demersal phase.

Objective 3.

Approximately 200 live 0-group haddock and whiting were established in the aquarium.

Other: Four samples of surface water, collected along the edge of the Norwegian Deeps, were brought back for the Woods Hole Laboratory.

J R G Hislop
6 September 1978

Seen in draft: W Watt

