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Cruise Report

FRV 'Explorer'

November 7 -- November 29 1977

Objectives:

- 1) To undertake a North Sea pre-recruit demersal fish and environmental survey.
- 2) To work the Jonsis line.

Narrative:

'Explorer' sailed from Greenock at 0830 hours on the 8th November for the North Sea. The passage was delayed on the first evening due to gale force winds and 'Explorer' dodged off the Antrim coast. Weather conditions improved on the morning of the 9th November and the passage recommenced. Weather conditions deteriorated again and 'Explorer' was forced to dodge off Strathy Point on the 10th November. A seaman was taken off at Scrabster due to a close-family bereavement and 'Explorer' continued to dodge off Strathy Point until the late afternoon of the 11th November. After steaming through the Pentland Firth work commenced off Orkney. Only one trawl was possible before weather conditions interrupted work. Passage was made to the Moray Firth to shelter from the westerly gales. Three trawls were completed in the Moray Firth before work again became impossible. 'Explorer' dodged off Helmsdale on the 13th November but steamed to Shapinsay when the wind veered to the north-west. 'Explorer' anchored in Shapinsay from the 14th to the 16th November. During this period the opportunity was taken to practise boat drill. When weather moderated slightly on the 16th November passage was made to Shetland waters. Weather conditions again deteriorated and with no possibility of further work 'Explorer' docked for the mid-cruise break on the afternoon of the 17th November. On leaving Lerwick at 1100 hours on the 19th November only one trawl off the Bard was possible before bad weather again interfered with work. 'Explorer' dodged off Bressay on the 20th and 21st November. Three trawls were possible in the Sumburgh/Fair Isle area on the 22nd November. One more trawl at Bressay Shoal was possible before bad weather once again prevented further operations. Weather conditions started to improve on the 25th November. Four trawls were completed in the area of the Forties oil field on the 25th and 26th November. 'Explorer' steamed to the north and, in near perfect conditions, completed eight trawls in the Fladen area. Two more trawls were undertaken off the Aberdeenshire coast before 'Explorer' docked at 1400 hours on the 29th November.

Due to the bad weather conditions which prevailed for most of the trip it was not possible to undertake the Jonsis line.

Trawling:

Hauls of an hour's duration were made at 23 stations using the 48ft Granton trawl with small mesh cover. A cod-end mesh size of 80 mm was used for all hauls.

Catches varied from 3 to 66 baskets, the average per haul being 12 $\frac{1}{2}$  baskets.

Of the major commercial species, whiting dominated most hauls. Catches ranged from 101 fish to 3770 fish and averaged 882 fish per haul. Haddock catches ranged from one blank haul to 1708 fish and averaged 545 fish per haul. The age

determination of 2961 haddock and whiting was made during the cruise. Haddock catches <sup>consisted</sup> mainly of the 1974, 1976 and 1977 year classes while whiting catches were composed mainly of the 1975, 1976 and 1977 year classes. Cod occurred in very small numbers, - 17 of the 23 hauls contained under 20 fish per haul. The largest haul was taken on Bressay Shoal (55 fish).

Of the industrial species only T. esmarkii was well represented in most hauls. The largest catches of this species were taken on Bressay Shoal (5832 fish), in the vicinity of Fair Isle (3306 fish) and in the Fladen area (2529 fish). T. minutus occurred in very small numbers. In two hauls, off Orkney and on the Bressay Shoal, 62 fish and 30 fish respectively were recorded.

Flatfish were poorly represented in most catches. Long rough dabs, which occurred in every haul, were represented by one catch of 435 fish in the Moray Firth and one of 303 fish off Aberdeen. Common dabs were taken in fairly large numbers in three hauls, - in the Moray Firth (349 fish), off Fair Isle (468 fish) and on Aberdeen Bank (262 fish). Other flatfish recorded were lemon sole, plaice, megrim, witch, brill and turbot. The largest catches of lemon sole were taken in the Moray Firth (42 fish), on Aberdeen Bank (50 fish) and off Aberdeen (42 fish).

The best catches of herring and sprats occurred in the Moray Firth and Orkney areas. In the Orkney area 100 herring were caught, while in the Moray Firth two hauls contained 808 and 88 herring and 482 and 210 sprats.

Other species taken occasionally in large numbers were grey gurnards (875 fish from the Swatchway area) and Squalus acanthias (1820 fish from the Turbot Bank area).

Nephrops occurred in large numbers in only three hauls, - in the Moray Firth (2358 specimens); off Aberdeen (190 specimens) and in the Fladen area (127 specimens). Pandalus catches were confined to the Fladen area where four hauls contained 485, 466, 434 and 334 individuals. One haul of Chlamys opercularis was taken on Aberdeen Bank.

Samples of T. esmarkii, M. poutassou, herring, sprat, mackerel and Pandalus were deep frozen for further examination at the laboratory. All squid were deep frozen to supply food for the aquarium.

#### Parasite studies

Microscopic examination of kidneys of 959 haddock, sampled in each haul for Ichthyohonus hoferi, showed infection in 131. Fish in all but one haul were infected. Samples from the vicinity of Fair Isle were heavily infected (62% and 68%). All plaice (88) were similarly sampled but no infection was observed. Serum samples were taken from 365 haddock and all the plaice. Ouchterlony agar gel diffusion tests were carried out on 335 of them. Samples of serum were frozen for further analysis.

Serum from plaice (5), brill (3), haddock (50), cod (4) and turbot (1) was obtained with a note of individual fish maturity for analysis by Dr Wright.

#### Environmental Sampling

Two stations were undertaken at 59°15'N 0°30'E and 58°15'N 0°30'E. These stations were to complement the results obtained during 'Scotia's' October cruise. Temperature salinity, nitrate, silicate and phosphate samples were taken at various depths. Plankton tows using the high speed Loch Ewe net were also made at these stations.

General

On behalf of the Scientific staff I would like to thank the Captain, Officers and crew of the 'Explorer' for their co-operation in our work and for the friendly atmosphere throughout the cruise.

A S JERMYN  
7 December 1977

Narrative seen in draft and  
approved by Captain Gillon

F.K.V. EXPLORER

7:11:77 - 29:11:77

