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1971 RESEARCH VESSEL PROGRAMME

REPORT: RV CIROLANA: CRUISE 7

(PROVISIONAL: Not to be quoted without prior reference to the author)

STAFF:

B W Jones  
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DURATION

Left Grimsby 1400 hours 17 August

Arrived Grimsby 2351 hours 13 September

LOCALITY

Barents Sea - West Spitsbergen

AIMS

1. To participate in the International O-group Survey in the North-east Arctic with Norwegian Ships G O SARS and JOHAN HJORT and the USSR vessels FRITJOF NANSEN and AKADEMIK KNIPOVICH.
2. To work hydrographic sections on the UK part of the survey grid.
3. To make nanoplankton studies.

NARRATIVE

CIROLANA sailed from Grimsby at 1400 hours 17 August and made passage direct to Tromsø arriving at midnight/20-21. After consultations with Norwegian scientists on board G O SARS, CIROLANA left Tromsø at 2300 hours/21 and proceeded to an area north off the northern Norway coast for gear calibration and experimental fishing. The first leg of our part of the International Survey was commenced at 0800/25. The ice edge north of Spitsbergen was reached at 81° 15' N at 1530/2 September. Work was interrupted by bad weather for 24 hours on 28/29 August, and bad weather also stopped trawling on 8/9 September. Adverse weather conditions on the last day of the survey resulted in the survey being terminated 70 miles short of the end of our last section.

CIROLANA docked at Tromsø at 2030/9 and sailed again at 0800/10, docking at Grimsby at 2358/13. Mr Jones left the ship in Tromsø to analyse the results of the survey with the scientists from the other ships.

## RESULTS

1. The International survey was successfully completed except for the last 70 miles of the last section, and trawling was not possible on the previous 180 miles. 62 hauls with the Boothbay Net and 5 hauls with the Engels net were made during the survey. The Simrad integrator was run throughout the survey.

Analysis of the results of all ships showed the 1971 year-class of cod to be a good one but not as abundant as the very good 1970 year-class. The abundance of haddock was average being less than in 1969 or 1970 but better than the poor year-classes of 1965-68. The abundance of redfish, capelin, long rough dab and polar cod were all about average.

2. Six hydrographic sections on our part of the survey, consisting of 35 stations, were successfully completed.

3. A fluorometer monitored chlorophyll 'A' levels throughout the cruise. Samples for spectrophotometric analysis were taken and the total and nanoplankton chlorophyll 'A' levels recorded at 100 stations throughout the Barents Sea. Nanoplankton hauls were made at two stations. Electromicroscope grids were prepared from material obtained from seven stations.

### 4. Miscellaneous.

(a) A total of 120 O-Group cod were preserved in three fixatives for Mr Bye's pineal studies. These included samples from midnight and midday.

(b) About 50 kgs of Blue Whiting were frozen for fish food.

(c) Target strength data from individual targets were obtained from adult Blue Whiting on 30 KHz and 100 KHz equipment and from a mixture of O-Group cod and haddock on 30 KHz equipment.

(d) During the experimental fishing period at the beginning of the cruise a 24 hour fishing cycle was undertaken on a selected scattering layer. Catches proved to be very variable and no apparent diurnal variation in catches was observed. Redfish from the deeper part of the scattering layer were larger in size than those nearer the surface.

(e) During the survey it became apparent that catches of cod and haddock taken in the Boothbay trawl were not as large as might be expected from a comparison with the catches of other ships using pelagic trawls. During the latter part of the cruise we diverted from our track to a region where cod were abundant and comparative trials made. Although the number of hauls was limited by time and weather it was clear that much larger catches of cod and haddock were obtained in the Engels trawl than were taken with the Boothbay. It appears that the larger more active fish are able to escape the small mouth aperture of the Boothbay net although it appeared that smaller fish were caught more representatively.

(f) A free floating dahn buoy was recovered from the sea west of Spitsbergen and was returned to Lowestoft.

(g) Attempts were made to keep O-Group redfish and Greenland halibut alive for Dr Purdom, but they survived only a few days.

B W Jones  
17 September 1971

SEEN IN DRAFT: E A Binnington  
G W Argumont

INITIALLED: AJL

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