

MR BARRIE

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MINISTRY OF AGRICULTURE, FISHERIES AND FOOD
FISHERIES LABORATORY, LOWESTOFT, SUFFOLK, ENGLAND

1974 RESEARCH VESSEL PROGRAMME

REPORT: RV CIROLANA: CRUISE 5A/1974

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

STAFF

- A Jamieson
- J Nichols
- R J Turner
- C S Garrod
- S Stevens
- R A Bray (B.M.)
- P J Smith (NERC)
- J Bronze (Sandwich Student)

DURATION

Left Grimsby 1800 h, 23 May

Arrived Stormoway 1800 h, 9 June

All times Greenwich Mean Time

LOCALITY

Denmark Strait

Iceland - Faroes Channel

AIMS

1. To collect cod tissues and larvae for biochemical and genetical analyses of stocks.
2. To investigate deep trawling in the Iceland-Faroes Channel.
3. To collect cod erythrocytes for Dr Dando, MBA, Plymouth.
4. To collect fish specimens and fish sera for the Departments of Radiography and Histology, Nuffield Institute of Comparative Medicine.
5. To collect fish parasites.

NARRATIVE

23 May: CIROLANA departed from Grimsby at 1900 h on passage for Iceland.

28 May: Arriving in Reykjavik harbour at 0900 h, members of the scientific staff visited the Icelandic Marine Fisheries Laboratory in the forenoon and Icelandic scientists visited CIROLANA in the afternoon. Departure from Reykjavik was at 1600 h to commence trawling on Eldey Bank off Reykjanes. Cod were caught, bled, dissected, otolithed, measured and scored for maturation stages.

29 May: More cod were sampled by trawling, west of Svortuloft (Snowy) and

again on Latragrunn, west of Bjargtanger (Stolberg) before proceeding towards East Greenland.

- 30 May: Trawling on Anton Dohrn Bank yielded more cod for tissue sampling.
- 31 May: CIROLANA dodged a northerly force 9 gale.
- 1 June: Ice limited access to selected fishing banks at Angmagssalik. Alternative trawling positions on the Rollerskate Bank yielded very few cod. It was necessary to adjust course to avoid the packice.
- 2 June: Ice prevented access to Fylkir Bank. A course was set for Iceland.
- 3 June: Plankton sampling all along the 12 mile limit at West Iceland continued by day and night.
- 4 June: Plankton sampling and sorting continued until 2330 h.
- 5 June: At 0430 h, CIROLANA proceeded towards the Iceland-Faroes Channel in deteriorating weather.
- 6 June: Deep trawling commenced at 1830 h. At the first station the trawl came fast after 40 minutes towing and two baskets of basket star crinoids formed the greatest part of that haul. At the second station the trawl was fouled within 60 minutes by grey-ooze and boulders.
- 7 June: Five more deep stations were trawled to complete the intended work in the so-called Rosegarden, although much net mending was required between each haul. CIROLANA set course for North Rona with all major items of gear intact at 2230 h.
- 8 June: A search for mackerel for research project 5.1.4 in the North Rona area produced some traces but no mackerel was caught.
- 9 June: No mackerel was caught. CIROLANA proceeded to Stornoway arriving there at 1800 h.

RESULTS

1. Dissections of 283 cod provided 2081 tissue specimens for biochemical and genetical assays of cod stocks between East Greenland and Iceland. The stored specimens included erythrocytes, blood sera, white muscles, heart muscles, livers and otoliths for age analyses. Length, sex and reproductive stage was recorded for each dissected cod.

The numbers of cod in reproductive stages are outlined in the following table:

	<u>Immature</u>	<u>Ripe</u>	<u>Post spawners</u>
Iceland Eldey Bank	0	8	17
" Kolluall	21	6	29
" Latragrunn	14	0	36
E. Greenland Dohrn Bank	38	11	95
" " Angmagssalik	2	3	3
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Percentage composition of total	27%	10%	63%

The bulk of cod spawning in the area had diminished a month before our arrival and some British trawlers were now catching post spawners in deep water north

of North Cape.

In attempts to find and preserve cod larvae at Iceland, 50 plankton stations were worked along the west coast following a course close to and parallel with the 12 mile limit. The live plankton was sorted on board to distinguish the teleost larvae which were positively identified under a stereoscopic zoom microscope. The current year brood of cod larvae were concentrated between 64°50'N and 65°15'N. Presumably they had drifted there from the Eldey Bank spawning at a rate of 2 nautical miles per day over the preceding four weeks.

The numbers of cod larvae were significantly fewer than in comparable plankton samples taken on AEGIR in 1961. Incidentally, the same plankton sample comparison showed an abundance of redfish larvae at a position near to Iceland where AEGIR found no redfish larvae in 1961.

Larvae were placed singly in small tubes and immersed in liquid nitrogen. Totals stored were as follows:

<u>Gadus morhua</u>	42
<u>Sebastes marinus</u>	20
<u>Sebastes mentella</u>	20
<u>Mallotus villosus</u>	20
<u>Trisopterus esmarkii</u>	20
<u>Melanogrammus aeglefinus</u>	16
<u>Pollachius virens</u>	11
<u>Merlangius merlangus</u>	8

2. Deep trawling at six positions between Iceland and Faroe at depths between 410 m to 860 m produced fish in small quantities. Weights and measurements were recorded for over 20 fish species caught. Specimens were preserved for the British Museum and for other outside organisations.

The state of the sea bottom caused much net damage.

3. 100 cod erythrocyte specimens were processed and preserved for Dr Dando's enzyme research at M.B.A., Plymouth.

4. Specimens and tissues were collected as requested for the Nuffield Institute of Comparative Medicine.

Specimens of fish species were frozen whole for radiography. (Miss Darling)

Sera specimens were secured for comparative enzymology. (Dr Hay)

5. Mr Bray of the B.M. searched for fish parasites at all trawl stations. He collected parasites from the alimentary tract, urinary bladder, bile-duct, gills, mesenteries, skin and liver from 46 specimens of 25 species of fish.

MISCELLANEOUS

An attempt was made at the end of the cruise to find mackerel for Mr Smith's isozyme studies. A grid, surveyed between North Rona and the North Minch, showed some traces but no mackerel was caught.

A seabird census log was kept by Mr Smith throughout the cruise. Spot counts

at 90 stations were recorded for the Seabird Group, University of Aberdeen.

A Jamieson
13 June 1974

SEEN IN DRAFT: THF

GWA

INITIALLED: AJL

DISTRIBUTION:

Basic List

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