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

1979 RESEARCH VESSEL PROGRAMME

REPORT: RV CIROLANA: CRUISE 7

STAFF

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M G Pawson
B C Mumford
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S Stevens
M Dyer (Luton College)

DURATION

Left Grimsby 1730h, 10 July
Arrived Grimsby 0700h, 28 July

LOCALITY

Northern North Sea
Faroe Bank

AIMS

1. To describe the distribution of gadoids within the Norway pout fishery area using a semi-pelagic high-headline trawl.
2. To obtain biological samples of all gadoids taken during the survey, and blood and tissue samples of a variety of species, especially Faroe haddock.
3. To investigate benthic communities and substrate types within the survey area using u/w cameras.
4. To collect specimens for fish identification and whole/gutted weight relationship determination.
5. To attempt to catch juvenile ('0' group) blue whiting with a pelagic trawl in the Faroe-Shetland Channel.

NARRATIVE

CIROLANA sailed from Grimsby and steamed directly to the first station on the Norway Pout Survey Grid (Figure 1). Fishing commenced at 0900h on 11 July. The grid was completed at station 70 at 2200h on 22 July having made 64 valid tows. The ship then returned to the position of Station 22 and fished 6 tows in the same position at 4 hour intervals. This work was completed at 1000h on 24 July and CIROLANA then made passage to Faroe Bank making 4 tows *en route* with the 1600 Engel trawl in an endeavour to catch 0-group blue whiting. Five tows were then made on Faroe Bank with the Granton trawl to catch haddock for blood samples. This objective was completed by 0500h 26 July and the ship commenced steaming for Grimsby where she arrived at 0700h 28 July. Fine weather and calm seas were enjoyed throughout the voyage and there were no delays to the work programme due to weather conditions.

RESULTS

Aim 1. 64 stations were successfully completed on the Norway pout survey grid fishing 1 hour tows with the Semi-pelagic trawl. Headline height, as measured by headline transducer, was approximately 5m. Towing speed was 4 kts and 90m combined bridles were used. Very little difficulty was experienced working at these positions and gear damage was minimal. At each station the weight caught was recorded for all species and samples of Norway pout, cod, haddock, whiting, blue whiting and herring were measured. Otolith samples of the main gadoid species were collected as follows:

Species	Roundfish sampling area			
	1	2	3	Total
Cod	82	92	52	226
Haddock	66	43	39	148
Whiting	64	36	57	157
Norway pout	102	38	50	190
Blue whiting	99			99
				<u>820</u>

Catch composition data and length composition data were input to magnetic disc file on the ship's computer (HP cartridge 79 + security copy on cartridge 78). This and the subsequent computer analysis of the data was made possible by the availability of the FSM 1 Groundfish Survey suite of programs. An initial analysis of catch-rates by 20m depth strata showed Norway pout catch-rates increasing with increasing depth to a maximum in the 120-139m stratum and then declining at greater depths. A similar trend was observed for haddock but for this species the maximum catch-rates were in the 80-99m stratum. For whiting the relationship with depth was not so clear.

Survey stations were worked throughout the 24 hour period. An initial comparison of day (shooting time between 0500 and 1959h) and night (2000-0459h) hauls indicated that Norway pout catch-rates were 25% higher by day whereas the reverse was observed for haddock. Whiting catch-rates were 50% higher by day.

In addition to the survey hauls one station was occupied for 24 hours and 6 hauls were made at 4h intervals. At this station the highest catch-rates were during the night. There was no evidence of the length compositions of Norway pout, haddock or whiting changing diurnally at this station.

Summary length compositions were prepared for Norway pout, haddock, whiting and cod for the total survey, for each of roundfish sampling areas 1, 2 and 3, and for each depth stratum.

Aim 2. Blood samples for immunogenetic studies were obtained as follows:

Northern North Sea	Mackerel	70 fish
	Haddock	70 "
Faroe Bank	Haddock Sample 1	70 "
	Sample 2	100 "

Otoliths were taken from all fish from which blood samples were obtained.

Aim 3. The Mk 5 underwater camera was used on the majority of tows with the Semi-pelagic trawl in the North Sea and on the Granton trawl on Faroe Bank to obtain photographs of the substrate and the benthic fauna. On both trawls the camera was mounted centrally on the headline beneath the kite. Four additional floats

were added to the headline on the Semi-pelagic trawl when the camera was attached. A check with the headline transducer indicated that the headline height of the Semi-pelagic trawl was unaffected by the attachment of the camera. Photographs were not obtained at a number of stations due to camera failure.

Aim 4. Assorted fish specimens were collected and deep frozen for use in Mr Blacker's fish identification courses.

Aim 5. Four tows were made with the 1600 mesh Engel trawl over deep water between the Shetlands and Faroe Bank. Small numbers of 0-group blue whiting were caught. While bottom fishing on Faroe Bank blue whiting, including 0-group fish, were caught and these covered the entire length range from 8-44 cm. Samples were measured and an otolith sample from 160 fish was taken. Norway pout were also measured and otolithed from catches on Faroe Bank.

Miscellaneous: Small gadoid samples for use as fish food were deep frozen for Fish Cultivation Unit.

Herring samples were preserved frozen for Mr Wood.

Fish hearts from a number of species were collected for Dr Greer Walker.

The surface thermograph was run throughout the cruise.

The shipboard computer functioned without fault for the duration of the cruise.

Gear damage: The following spare parts were used to repair the Semi-pelagic trawl:-

1 belly
3 wings

B W Jones
3 August 1979

Seen in draft: THF
WJS

INITIALED: AJL

DISTRIBUTION

Basic List

B W Jones

A Jamieson

J G Pope

M G Pawson

B C Mumford

J Dann

R J Turner

S Stevens

M Dyer (Luton College)

Norwegian Fishery Authorities via Fisheries Attache at Norwegian Embassy

Figure 1 Industrial fisheries project "Norway pout" stations
R.V. CIROLANA CRUISE 7 1979

