

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

1988 RESEARCH VESSEL PROGRAMME

REPORT: RV CLIONE: CRUISE 2b

STAFF:

M R Vince
M Greer-Walker
W A Dawson
S Warnes
C L Whiting
S Coello (UCIW)

DURATION:

Left Lowestoft 1215 h 7 February
Arrived Lowestoft 0720 h 17 February
All times are Greenwich Mean Time

LOCALITY:

Western English Channel

AIMS:

1. To determine selectivity of square mesh codends for mackerel using midwater trawl (EBA1).
2. To obtain samples of mackerel for stock assessment purposes (W A Dawson).
3. To obtain samples of mackerel for fecundity estimation (M Greer-Walker, S Coello). (DDB2).

NARRATIVE:

The passage from Lowestoft to the western English Channel was not completed until 12 February; five days after sailing. Gale force winds forced Clione to anchor briefly off Deal for a few hours on 8 February. A short respite allowed the ship to reach an anchorage in St Helens bay Isle of Wight before a prolonged period of severe south westerly winds arrived. An echo survey was carried out between 11 and 12 February. The area covered was between Portland Bill and Start Point. Heavy concentrations were located about 12 miles SSE of Start Point. The shoals were confirmed to contain mackerel by feathering. The first tow with the Engel trawl was aborted when it was found necessary to lengthen the headline transducer cable.

Three hauls were completed before anchoring in Tor Bay at 0010 h 13 February where Clione remained sheltering from yet another gale until the following morning. Fishing recommenced at 1000 h 14 February and continued until 2100 h the next day. The return passage to Lowestoft was made in fine weather.

RESULTS:

Aim 1

The primary objective of this cruise was not achieved for a number of reasons; the main one being the inclement weather. The technical difficulties encountered and suggested remedies for future work of this nature are the subject of a separate report. However the results and experience gained should prove useful.

A total of 12 valid hauls were made with the 300 mesh Engel trawl. Five of these were completed with the standard 33 mm mesh cod-end, and the same number with the 70 mm square mesh. The remaining two were made with the 80 mm square mesh cod-end. Only eight hauls resulted in significant quantities of mackerel. The greatest weight of this species for a single tow to be brought on board was 2.5 metric tonnes. Samples of mackerel were obtained from feathers on the first and the last days fishing and totalled 79 and 67 kilograms respectively.

The total length distributions, percentage at length and mean lengths for the 33 mm, 70 mm mesh cod-ends, and feathers are shown in the table. The differences are considered to be more a reflection of the relative efficiency of the gear than a sampled population difference. Samples of mackerel and horse mackerel were measured for maximum girth and total length for comparison with mesh size selection.

Mesh measurements were carried out using an ICES spring loaded gauge. A difference of 1 to 2 mm. was found between the top and the bottom panels of all three cod-ends. The overall mean mesh sizes of the 33 mm diamond, 70 mm square and 80 mm square mesh cod-ends were 32.9, 68.3 and 81.0.

Aim 2

A sample of 150 mackerel otoliths were collected and processed during the cruise. Many of these were included in the fecundity estimate samples. (Aim 3a, Greer-Walker.)

Aim 3

- a. The ovaries from 141 mackerel of 1, 2 and 3 year olds were preserved in formalin for subsequent histological analysis. This is part of a programme to investigate the contribution of first time spawners to total egg production. A further 90 ovaries were collected to complete representation throughout the length range. This material will be used together with other monthly samples to study oocyte development throughout the year. (Greer-Walker.)
- b. A sample of 217 female mackerel within the length range 25-37 cms were collected to compare feeding and maturation between young mackerel of the south west of England and the west of Ireland. (S Coello.)

Miscellaneous

1. A sample of 95 pilchard were otolithed and examined for sex and maturity.
2. A sample of sprats were frozen for Dr P Johnson.
3. One bass was frozen for G Pickett.
4. A mixture of pelagic species were frozen for the fish identification course.

NH

WACKEREL SQ MESH TRIALS CLIONE 2b/88

GEAR	TRAWL 33mm CODEND		TRAWL 70mm SQMESH		FEATHERS	
WEIGHT kg	1,223.1 ^X		3,120.1		146.7	
	NUMBERS	PERCENT	NUMBERS	PERCENT	NUMBERS	PERCENT
19.5	2.0	.0	1.0	.0		
20.5	308.0	3.1	82.0	.3	3.0	.4
21.5	166.0	1.7	232.0	1.0	.0	.0
22.5	82.0	.8	76.0	.3	.0	.0
23.5	86.0	.9	1.0	.0	1.0	.1
24.5	473.0	4.7	539.0	2.3	4.0	.5
25.5	1,504.0	15.1	2,527.0	10.8	10.0	1.3
26.5	2,605.0	26.1	4,799.0	20.5	27.0	3.5
27.5	1,938.0	19.4	6,183.0	26.4	67.0	8.7
28.5	1,502.0	15.0	4,124.0	17.6	104.0	13.6
29.5	557.0	5.6	2,389.0	10.2	101.0	13.2
30.5	549.0	5.5	682.0	2.9	124.0	16.2
31.5	225.0	2.3	509.0	2.2	105.0	13.7
32.5	101.0	1.0	552.0	2.4	94.0	12.3
33.5	9.0	.1	282.0	1.2	62.0	8.1
34.5	7.0	.1	164.0	.7	36.0	4.7
35.5	.0	.0	77.0	.3	17.0	2.2
36.5	3.0	.0	55.0	.2	7.0	.9
37.5		.0	11.0	.0	2.0	.3
38.5		.0	11.0	.0	1.0	.1
39.5		.0	.0	.0	.0	.0
40.5		.0	11.0	.0	.0	.0
41.5		.0			.0	.0
42.5					1.0	.1
TOTAL	10,117.0		23,307.0		766.0	
MEAN	26.0		27.8		30.6	

N.B. X Indicates not all total catch landed

5. A few small bags of sprat were frozen for fish food.
6. Several mackerel ovaries were collected for Dr Walesby (Dundee Unit).
7. The paper records from the sounder and headline transducer were retained for future reference.

M R Vince
29 February 1968

SEEN IN DRAFT: Captain J French Master
Peter Mackay Skipper

INITIALLED: D J G

DISTRIBUTION:

Basic List +
M R Vince
M Greer-Walker
W A Dawson
S Warnes
C L Whiting
S Coello (UCMU)