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1975 RESEARCH VESSEL PROGRAMME

REPORT: RV CLIONE: CRUISE 16

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

STAFF

G P Arnold
P Scholes
J Nichols
P Walker
K Medler (18-26 November only)

DURATION

Left Lowestoft 1615 h 12 November; 2010 h 18 November

Arrived Lowestoft 0955 17 November; 1400 h 2 November.

All times are Greenwich Mean Time.

LOCALITY

Southern North Sea.

AIMS

1. To continue with RV CORELLA studies on plaice migration with two objectives, (i) to collect further data on the relation between the catch of plaice taken by midwater trawl and tidal direction, (ii) to determine where the midwater catches of plaice are greatest.
2. To collect a sample of live copepods for Mrs Thompson.

NARRATIVE

CLIONE left Lowestoft at 1615 h 12 November and dodged out to Smith's Knoll where she lay overnight. Work started the following morning and continued uninterrupted in calm weather until 1940 h 14 November. Tows of 3 h duration with the 800 mesh Engel midwater trawl were made on consecutive northerly and southerly tides first inside Smith's Knoll, then outside the bank and thirdly to the west of the Lemn Bank. CLIONE anchored on the northerly end of Smith's Knoll for the night of 14 November and steamed out the following morning to a station midway between the Well Bank and Broken Bank. A northerly tow was completed successfully but deteriorating weather compelled the next haul to be ended after only 2½ hours. With the forecast of an imminent gale CLIONE sailed for Gorleston Roads where she arrived at 0230 h 16 November. CLIONE lay at anchor until 0800 h 17 November when with conditions deteriorating still further and northerly winds of 40-50 knots it was decided to enter port. CLIONE docked at 0955 h.

CLIONE sailed again at 2010 h 18 November with Mr Medler and the JONSIS A current meter rig on board and anchored for the night in Gorleston Roads. CLIONE steamed off the following morning to a position approximately 6½ miles southwest of the Smith's Knoll Lightvessel, where the trawl was shot at 0640 h at the start of a southerly tide. Two pairs

of hauls were completed in company with RV CORELLA between the Smith's Knoll and Outer Gabbard Lightvessels. A fifth haul was made along longitude 2°05'E on a southerly tide ending close to the Outer Gabbard Lightvessel but the northerly haul of this pair was not attempted because of bad weather. CLIONE steamed to Gorleston Roads for shelter where she arrived at 1710 h 20 November. With the weather moderating CLIONE weighed anchor at 0036 h the following morning and steamed to Flamborough Head. The JONSIS A station was reached at 1320 h on 21 November and the current meter rig was laid by 1400 h. CLIONE steamed directly back to the Indefatigable Bank arriving there at 0015 h 22 November. It had been planned to complete two hauls along the east of this bank but the swell was too great to shoot the trawl at the appropriate time. With the forecast of an imminent gale it was decided therefore to abandon this plan and steam south to Smith's Knoll. The trawl was shot again at 0815 h 22 November in marginal conditions, but this southerly tow was abandoned at 0953 h to answer a Mayday call for a military aircraft ditched about 10 miles to the northeast. The crew of the aircraft was however picked up by RAF rescue helicopter by 1020 h and CLIONE steamed south to the Outer Gabbard Lightvessel to resume midwater trawling on the next northerly tide. The trawl was shot at 1430 h on longitude 2°05'E and fishing continued uninterrupted until 0030 h on 24 November when CLIONE again sought shelter in Gorleston Roads. The weather moderated during the morning and fishing commenced again at 1600 h, continuing until 0230 h 26 November by which time six more hauls had been completed. Work was finished at 1045 h after a plankton station had been worked at Smith's Knoll.

RESULTS

24 complete 3 h tows were made during the cruise and 49 plaice were caught in midwater; 14 of these fish were caught on northerly tides and 35 on southerly tides. All the plaice caught were measured, sexed, staged for maturation and photographed for subsequent measurements of surface area. Nine plaice were frozen and brought back to the laboratory for flume experiments; the remainder were otolithed at sea. Catches of dabs were also measured and sexed.

1. Area of abundance

Eight hauls made north of Smith's Knoll yielded only two plaice, one each on a northerly and southerly tide. The majority of the plaice were caught in the Western Deep Water in the area bounded by latitudes 52°N and 52°30'N and longitudes 2°05'E and 2°15'E.

2. Plaice catch and direction of tide

The 47 plaice caught south of Smith's Knoll were distributed between northerly and southerly tides as follows:

	Tide			
	Northerly (N)		Southerly (S)	
	h	catch	h	catch
Catch/h	24	13	27	34
Ratio N:S	0.54		1.26	
	1:2.33			

All 14 fish that were taken in midwater on northerly tides were caught at night, suggesting that these fish had a diurnal as opposed to semi-diurnal tidal pattern of vertical migration.

When the fish caught on this cruise are added to the results obtained in 1974 and by CORELLA 17/75 the following picture emerges:

	Tide			
	Northerly (N)		Southerly (S)	
	h	catch	h	catch
CORELLA 16/74	21	2	21	22
CORELLA 17/74	18	16	19	49
CLIONE 18/74	13	11	12	36
CORELLA 17/75	18	1	21	15
CLIONE 16/75	24	13	27	34
Totals	94	43	100	156
Catch/h	0.46		1.56	
Catch rates N:S	1:3.4			

3. Maturity

Male plaice ranged from 28 to 44 cm in length and, with the exception of one immature fish, were all in maturity stage VI. Female plaice ranged from 24 to 68 cm in length; the majority were in maturation stage III with several in stage IV.

4. Gear

High winds still made handling the doors of the Engel trawl difficult and the provision of light-weight high tensile steel chains would help considerably.

Other activities

5. The JONSIS A current meter rig was successfully relaid.

6. A sample of live plankton was brought back to the laboratory for Mrs Thompson.

7. A 57 cm running male bass Dicentrarchus labrax was caught at station 13 (52°01'n 02°05.7'E).

8. A sample of frozen anchovies was brought back to the laboratory for Dr Greer Walker.

9. Frozen sprat and whiting were brought back to the laboratory as fish food for Dr Purdom.

G P Arnold
(Naturalist-in-Charge)

28 November 1975

SEEN IN DRAFT : JRF

GFL

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