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

1982 RESEARCH VESSEL PROGRAMME

REPORT: RV CLIONE : CRUISE 7

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

STAFF:

B M Thompson
T W Boon
S J Lovewell
S P Milligan
P Hudson
B F Riches - to 26 May
C W Shand - from 26 May

DURATION:

Left Barry 1800 h 20 May
Arrived Douglas, IOM 0900 h 29 May
Left Douglas, IOM 0900 h 30 May
Arrived Lowestoft 1900 h 7 June
(All times are Greenwich Mean Time)

LOCALITY:

Irish Sea

AIMS:

1. To carry out a plankton survey using the new MAFF Guildline 76 cm high speed sampler, to determine the distribution and abundance of Nephrops larvae.
2. To carry out a trawl survey using the Boris 600 mesh fish/prawn trawl, to determine the distribution of adult Nephrops, and to take samples for fecundity and maturity studies.
3. To survey in selected areas with the DAFS underwater television equipment towed close to the bottom, to estimate the abundance of adult Nephrops.
4. To take sub-surface sea water samples for salinity phosphate, nitrate, nitrite and silicate analysis at each plankton station and to monitor continuously sub-surface sea water for chlorophyll "a" fluorescence.
5. To take sub-surface sea water samples at selected plankton stations for ¹³⁷Caesium analysis by AEP 1.
6. To collect and deep freeze the stomach contents from selected fish species for predation studies (D Symonds).
7. To lay a moored current meter station at the Nab Tower site for AEP 3.

NARRATIVE:

RV CLIONE left Barry at 1800 h 20 May. The MAFF/guildline plankton sampler (76 cm MG82) was calibrated on 21 May in the vicinity of the first station of the plankton grid. Sampling of the plankton grid was begun at 1238 h on the same day and continued until 0230 h 26 May with only two breaks for repairs to the Guildline system on 21 May from 1450-1830 h and on 22 May from 1050-1530 h.

Scientific staff were exchanged at Douglas at 0730 h 26 May and the plankton grid resumed at 0919 h. Sampling of the grid was completed at 2130 h on the same day.

CLIONE then steamed to trawling grounds 15 n miles SW of the Calf of Man. A survey of Nephrops using the DAPS underwater television camera sledge was made on these grounds between 0800 h and 2330 h 27 May.

Six hauls were made with the Boris box fish/prawn trawl in this area between 0600 h and 2120 h 28 May.

CLIONE docked at Douglas at 0944 h 29 May to take on stores and water, leaving at 0900 h 30 May.

Plankton sampling was resumed at 1132 h 30 May and continued until 1200 h 31 May with a break of $3\frac{1}{2}$ h for major repairs to the plankton sampler and Guildline system. A TV survey of Nephrops on the trawling grounds 20-25 n miles west of the Isle of Man was carried out between 1345 h and 2230 h 31 May. Another six hauls were made with the Boris Box trawl in this area on 1 June and sampling of the plankton grid was resumed at 2300 h on the same day.

Plankton sampling continued until 2000 h 3 June when an attempt was made to carry out a TV survey of Nephrops in the area of highest larval density. When a suitably flat area of sea bed had been found 15 n miles NNE of Dublin Bay, the TV showed a sand, shell and gravel bottom with no signs of Nephrops burrows. Plankton sampling was resumed at 2300 h and a series of ten replicate hauls were completed at the station showing the highest density of Nephrops larvae. Sampling of the grid and further calibration of the plankton sampler was completed at 0830 h 5 June after one break of 5 hrs for repairs to the Guildline system.

Course was set for the Nab Tower site and a moored current meter station was laid for AEP 3 at 2106 h 6 June. CLIONE then steamed at maximum speed for Lowestoft and docked at 1900 h.

RESULTS:

1. The new 76 cm MG82 plankton sampler worked well, although some adjustments to the Guildline CTD system were necessary.

Despite dense fog and problems with the ships engine which necessitated steaming at reduced speed, complete coverage of the 85 stations of the plankton grid was achieved on Part 1 of the cruise.

A second coverage of the 65 stations on the western part of the grid were completed during Part 2. (figs 1 and 2).

Two stations were sampled to the east of the Isle of Man at the beginning of Part 2 to provide plankton for analysis by AEP 1.

High numbers of Stage I, II and III Nephrops larvae were found over most of the western grid. Peak production occurred at Stations 15 n miles east and 30 n miles north east of Dublin Bay (fig 3) as found on the two previous surveys (CORELLA 5/82 and CLIONE 6/82).

2. Catches of Nephrops in the trawl hauls completed to the SW of the Isle of Man ranged from 0.4-4.2 kg per hour tow and were lower than in comparable hauls made from CORELLA in October 1981. Catches in the hauls completed to the west of the Isle of Man ranged from 1.4-10.2 kg per hour tow and were higher than in comparable hauls completed in October 1981.

Carapace length measurements were made from each haul and the few berried females which were found were returned frozen to the laboratory for fecundity studies.

3. The DAFS TV camera sledge was towed at 6 stations varying in depth from 45 m to 92 m. Three trawl hauls corresponded to 5 of these stations to provide a comparison between the size composition of Nephrops from photographs and from the trawl. The sixth station was in the area of highest larval density 15 n miles NNE of Dublin Bay, but showed a composition of bottom sediments completely unsuitable for Nephrops habitation.

A total of 575 still photographs were taken of Nephrops and 20 hrs of video tapes recorded.

4. 182 sub-surface salinity samples were taken over the plankton grid and 151 samples of sub-surface sea water for subsequent nitrate and phosphate analysis and 151 samples for silicate analysis.

5. Surface temperature and chlorophyll "a" fluorescence were monitored continuously throughout the survey using the pumped sea water supply.

6. 54 water samples were taken at selected stations for cyanobacterial analysis at the Marine Science Laboratory, Menai Bridge.

7. 40 water samples were taken at selected stations for analysis by AEP 1 for ¹³⁷Cesium.

8. 261 stomachs or whole fish were taken for predation studies.

9. 4, 80 cm + spurdogs were frozen whole for analysis by AEP 2.

10. A moored current meter station was deployed at the Nab tower site for AEP 3.

B M Thompson

11 June 1982

SEEN IN DRAFT:

B A C
R G

INITIALLED:

D J G

DISTRIBUTION:

Basic List +

Brenda Thompson

T Boon

S Lovewell

S Milligan

P Hudson

C W Shand DAFS

J H Nichols





