

MR. SAPE

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

1974 RESEARCH VESSEL PROGRAMME

REPORT: RV CLIONE: CRUISE 10

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

STAFF

M Greer Walker
G P Arnold
C R Hood
I L Davies
P M Hudson

DURATION

Left Lowestoft 1740 hours, 15 July

Arrived Lowestoft 1030 hours, 24 July

All times are Greenwich Mean Time

LOCALITY

Southern North Sea

AIMS

1. To estimate the efficiency of RV CORELLA's Granton trawl using the ARL scanner and transponding acoustic tags.
2. To test the QSM 2400 underwater spectroradiometer.

NARRATIVE

CLIONE sailed from Lowestoft at 1740 hours, 15 July and reached Den Helder, where the dome was fitted at 0725 hours the following day. CLIONE remained in port weatherbound until the morning of 17 July departing at 0500 hours. The rest of the day was spent dodging towards the working area 30 n miles East of Den Helder. Work began with RV CORELLA at 0500 hours, 18 July and continued until 1530 hours, 22 July. The sonar dome was removed in Den Helder at 2300 hours. Trials with the underwater spectroradiometer began the following morning at 0830 hours in the Marsdiep. Measurements of underwater spectral irradiance were made at two stations (52°5', 04°08'; 52°44.5', 03°21') on passage to Lowestoft on 23 July.

RESULTS

1. Twenty one plaice were fitted with acoustic transponding tags and 31 attacks were made on 19 of these fish. Of the 31 attacks, 23 attacks (73%) were made with the fish positioned between the otter boards; 22 attacks were valid for the purpose of the experiment and the results were as follows:

Position of fish	Number of attacks	Fish caught n	%
Between boards	22	11	50
Between boards and wingends	5	2	40
In path of net	17	9	53

When these results are added to those already obtained, the position can be summarised as follows:

Position of fish	Number of attacks	Fish caught n	%	Error limit ± %
Between boards	163	72	44.1	7.8
Between boards and wingends	69	15	21.7	9.9
In path of net	94	57	60.6	10.2

Door to door tickler chains were added to the gear to recover tags that could not be caught with the standard rig. 8 valid attacks were made on 8 fish. In 6 instances the fish was positioned in the path of the net but only 2 were caught. This low recovery rate is probably because the sample is biased towards fish lying in particularly difficult situations but it suggests an increase in efficiency of 25%. On 2 occasions fish moved from between the doors and one occasion in the path of the net to positions outside the influence of the gear. These movements were coincidental with COBELLA passing overhead. This response had not been observed before. A preliminary analysis suggests that this project is completed.

A release cage was used on one occasion and worked satisfactorily obviating the necessity of surveillance during the settling down period.

2. The tests in the Marsdiep showed that the QSM 2400 spectroradiometer and associated equipment was working correctly, but, with a 2 km tide running, the water was so turbid that there was no measurable light below 10 m. At the two offshore stations, however, the instrument was used down to the maximum depth of water and the results were very promising. The oscillations superimposed on the spectral scan by wave action followed very closely those recorded by an integrating selenium cell adjacent to the radiometer. It should therefore be possible to correct the curves drawn by the radiometer to give a true spectral irradiance curve for each depth. Combining these corrected curves with measurements of total irradiance made by a second selenium cell 2 m below the surface should enable spectral attenuation coefficients to be calculated for each station.

THE EQUIPMENT

Acoustic tags: 8 tags were lost of which 6 were abandoned, one lost on hauling and one due to a probable malfunction.

The dome cover: The terylene cover stood up well to the conditions in comparison with the canvas covers and the damage is repairable. The total distance for this cover is 81 n miles.

ARL Scanner: There were no major faults.

M Greer Walker
4 August 1974

SEEN IN DRAFT: JRF (Master); GFL (Flushing Skipper)

INITIALLED: AJL

Distribution: Basic list C R Hood
 E C Mumford I L Davies
 S Stevens P M Hudson
 G P Arnold