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February 1

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In Confidence Not to be quoted without reference to the
Laboratory

CRUISE REPORT

FRV CLUPEA

30 April - 7 May 1976

Objectives

1. To obtain plankton samples in the Designated Sea Area (DSA) in the Inner Sound of Raasay.
2. To obtain live shrimps.
3. To do further trials of the deck-recording depth flowmeter.
4. To carry out a survey of the distribution and abundance of Nephrops larvae.

Narrative

Mr Adams joined 'Clupea' at Kyle of Lochalsh early in the afternoon of Friday 30 April and the vessel sailed at 1620 the same day to carry out the plankton survey of the Designated Sea Area. At 2230 'Clupea' returned to Kyle for the weekend, the survey having been successfully completed.

Messrs Cameron and Copland joined on Sunday evening. 'Clupea' sailed at 0625 on Monday 3 May and proceeded to the area off Gairloch where trawling for shrimps continued throughout the day, the vessel then proceeding to Loch Ewe for the night.

At 0650 the following morning 'Clupea' left Loch Ewe and went to Little Loch Broom where the live shrimps were transferred to a cage on the sea bed. This work was completed by 1055 when the first of a series of hauls for larval Nephrops was made and this work continued until 1400 when 'Clupea' proceeded to Ullapool to land Messrs Geddes, Cameron and Copland and to pick up Mr Blair and additional scientific staff.

Departure from Ullapool was delayed by the need to carry out work on some of the scientific instrumentation, but the vessel eventually sailed at 2020 hrs and occupied three stations before anchoring for the night in Loch Kanaird.

Having sailed at 0635 the next morning 'Clupea' occupied eleven stations from west of the Summer Isles across to Loch Bhrollum. Since no Nephrops larvae were obtained in eight vertical hauls (four at each of two stations) in Loch Bhrollum two additional horizontal hauls (yielding one larvae) were made before the vessel proceeded to Broad Bay for the night of 5 - 6 May. 'Clupea' weighed anchor at 0655 on the morning of the 6th and after occupying one further Nephrops station set course for Aberdeen carrying out tests of a new style towed underwater vehicle for RGIT on the way.

'Clupea' dock at Aberdeen at 0630 on Friday 7 June.

Results

Plankton of the Designated Sea Area

The plankton samples obtained in the DSA are being reported on separately.

Collection of live shrimps

Although the grounds fished were not expected to yield large catches of shrimp, their choice was dictated by the need for them to be (i) fairly near to Little Loch Broom and (ii) in an area convenient for the other objectives of the cruise. About 300 live shrimps were placed in the sea-bed cage and although a month later only 10% were still alive this has proved to be an ideal number for the purposes of the experiment.

Trials of the deck-recording depth-flowmeter

Faults which developed in the instrumentation prevented further trials of the actual deck-recording depth-flowmeter, but a new design of towed underwater vehicle capable of use as a depressor and instrument carrier for plankton samplers was successfully tested by RGIT to ascertain depth measurement, cable tension and stability etc. An instrument control package contained in the towed underwater vehicle was not operated.

Distribution and abundance of Nephrops larvae

Numbers of Nephrops larvae in the Little Loch Broom and Loch Broom area ranged from 0 - 3 per m^2 (average 1.25 per m^2); in the area from $58^{\circ} 04' N$ $5^{\circ} 36' W$ to $57^{\circ} 52' N$ $6^{\circ} 04' W$ numbers ranged from 4 - 12 per m^2 (average 7 per m^2) while from west of the latter position to Loch Bhrollum numbers ranged from 0 to 5 per m^2 (average 1.3 per m^2). At the position off Broad Bay 1.5 per m^2 were found. Of the 117 larvae caught during the cruise 89 were at Stage I, 23 at Stage II and 5 at Stage III.

J. A. Allams
26 July 1976

Seen in draft - G Geddes