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

1982 RESEARCH VESSEL PROGRAMME

REPORT: RV CLIONE: CRUISE 13
(PROVISIONAL: Not to be quoted without prior reference to the author)

STAFF

J H Nichols
C A Goody
B M Thompson
T J Hulme
R Flatt
J Zuzunaga

DURATION

Left Lowestoft 0930 h 5 October
Arrived Lowestoft 0945 h 19 October

LOCALITY

North Sea

AIMS

1. To carry out a survey for herring larvae in the western part of the Central North Sea as part of the international survey of the distribution and abundance of autumn spawned herring larvae in the North Sea and adjacent waters.

2. To make an acoustic survey between the north Norfolk coast and the Dogger Bank for herring using a midwater trawl for trace identification.

3. To continue tests of different fixative concentrations and methods and their effect on herring larvae shrinkage.

NARRATIVE

The echo survey was started at Latitude 52°52.5'N Longitude 3°00'E at 1530 h 5 October and proceeded at eight knots until interrupted by bad weather at 2330 h 6 October. The survey was resumed at 0700 h 7 October but had to be abandoned at midnight on the same day because of strengthening north north-easterly winds. The north to north-easterly strong to gale force winds continued throughout the 8 October until 1500 h 9 October when conditions became suitable for the plankton survey to be started.

The 50cm TTN was calibrated between 1500 h and 1900 h 9 October and the survey started at 2000 h. In spite of a heavy northerly swell the survey progressed well until interrupted by south-easterly force 8-9 winds between 0130 h and 0800 h 13 October. Fifty seven plankton stations had been completed by this time and only a further thirteen stations were added before the centre of the depression passed through and northerly gales forced a further interruption at 0430 h 14 October. The force 7-9 northerly winds continued throughout 14 October until 0800 h 15 October when the survey was restarted in slowly improving weather at latitude 55°25'N, longitude 00°30'W. A weak ridge of high pressure allowed us to complete a further twenty stations before the next

vigorious depression with force 9 south-easterly winds forced us to seek shelter north of the Farne Islands at 1700 h 16 October. One further station was completed during the morning of 17 October, but with the wind increasing again to force 9, the final fourteen stations of the herring larvae survey were abandoned at 1100h and course was set for the Dowsing ground 130 n ml to the south east. After an uncomfortable passage RV CLIONE arrived at a position 15 n ml ENE of Spurn Point by 0600 h 18 October. In decreasing south-westerly winds four stations from the original survey grid were repeated and one additional station sampled, by 1330 h. This allowed sufficient time for ten replicate hauls to be made in a herring larvae patch by 1910 h, when course was set for Lowestoft. RV CLIONE docked at Lowestoft 0945 h 19 October.

RESULTS

1. Some problems were experienced with the electronics system on the plankton sampler. These were attributed to faulty cores in the towing cable which eventually resulted in the loss of all temperature profiles after station 70, and some spurious readings from the elcctric flowmeter on a few stations. These faults did not affect the major aim, to survey for herring larvae, which were found on most stations on the western half of the grid. Recently hatched larvae were most abundant off the Yorkshire coast from Bridlington Bay to Whitby, some stations containing over three hundred larvae less than 10mm in length. No herring larvae were found along the eastern edge of the surveyed area, where thick Rhizosolenia spp. was the dominant feature. No newly hatched herring larvae were found in the Dowsing area either at the beginning of the survey or when some stations were repeated on the penultimate day of the cruise.

   A strong thermocline varying in depth between 20 m and 35 m was present in the area north of Flamboro Head. The southern and eastern boundaries of the resultant 'front' are shown by the 3°C surface to bottom temperature difference isotherm, on the track chart (fig 1). No information on the coastal boundary of this 'front' north of Whitby was obtained.

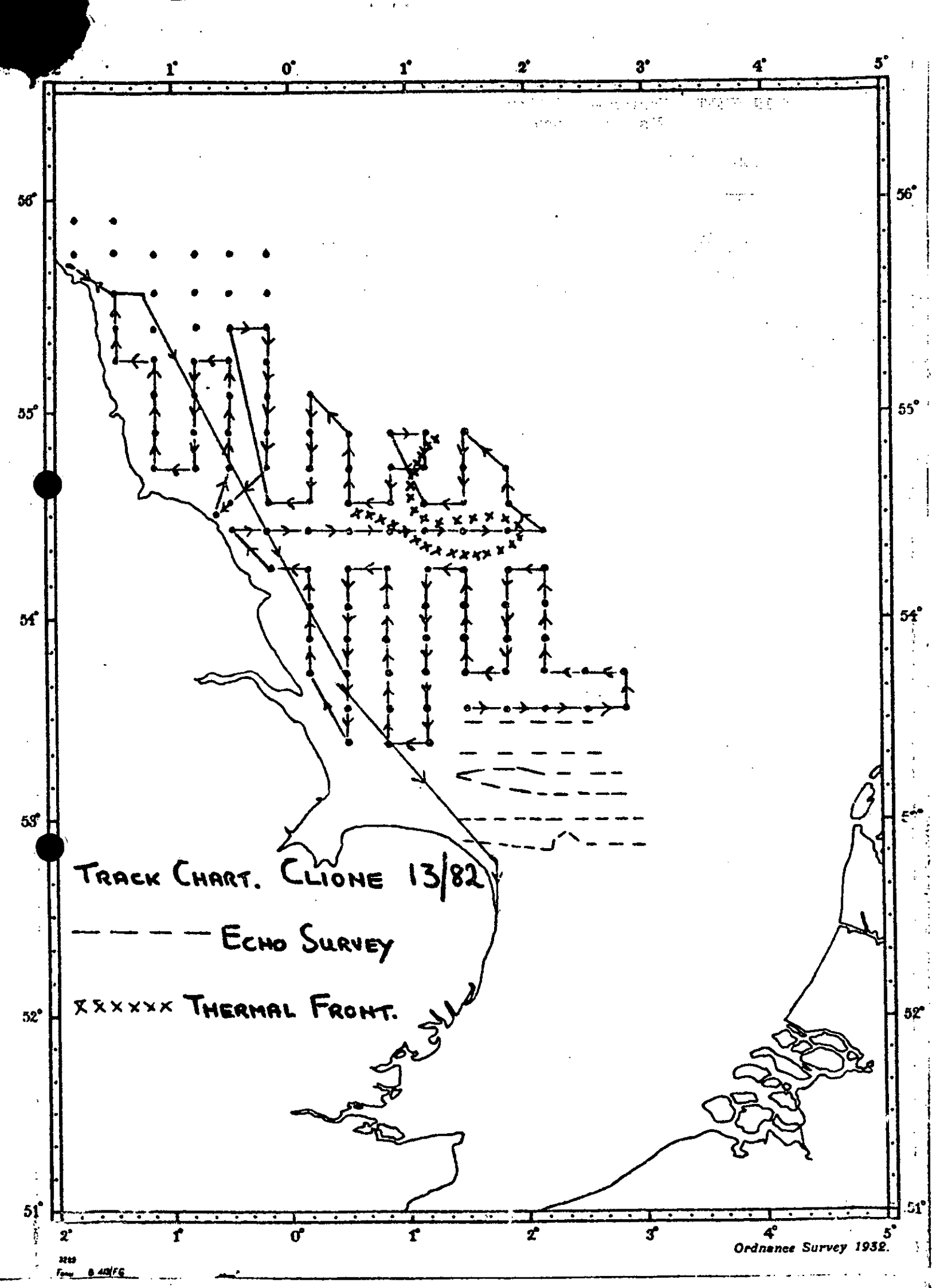
   Ten consecutive bauls with the plankton sampler at a single position where herring larvae were abundant were made in order to estimate haul to haul variance.

2. The M.S.44 and Furono colour video sounders wrer run continuously, throughout both the echo survey and the plankton survey. The Furono colour video with t.v.g. input provided a useful enhancement of the M.S.44 paper record, This equipment will with experience prove a valuable tool for fish trace identification and also has potential in plankton studies. A total of eight, ninety minute tapes of both fish and plankton traces were recorded for subsequent examination at the laboratory.

   Few traces which could be attributed to herring were found south of latitude 53°N. Some heavy bottom traces were found between the Leman and Ower Banks in daylight which appeared to be herring. An attempt to fish on these traces at dusk was unsuccessful, as the shoals could not be found when we returned to the area. Heavy traces which could have been herring were located on other parts of the plankton grid, notably some 40 n ml off Bridlington Bay and on the western edge of the Dogger Bank. Insufficient time was available either during the plankton survey or at the end of the cruise to return to these areas to fish. The Engels trawl was not shot during this cruise.

3. Insufficient time was available to return to an area of high herring larvae density to take additional samples for this aim.

J.H Nichols
8 November 1982


TRACK CHART. CLIONE 13/82
ECHO SURVEY
THERMAL FRONT.
Ordnance Survey 1932.

SEEN IN DRAFT: Master - B A Chapman
Fishing Skipper - R Hunt

INITIALLED: DJG

DISTRIBUTION:

Basic List
J H Nichols
C A Goody
B M Thompson
T J Hulme
R Flatt
J Zuzunaga