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FISHERIES LABORATORY, LOWESTOFT, SUFFOLK, ENGLAND

1976 RESEARCH VESSEL PROGRAMME

REPORT: RV CORELLA: CRUISE 12a

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

STAFF

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DURATION

Left Lowestoft 1630 h 3 September  
Arrived Lowestoft 1120 h 15 September

All times are Greenwich Mean Time

LOCALITY

West Central North Sea: North coast of Norfolk to 56°N.

AIMS

1. To carry out a survey for herring larvae in the western half of the central North Sea, as part of an international survey of the abundance and distribution of autumn-spawned herring larvae in the North Sea and adjacent waters, using the Lowestoft multi-purpose plankton sampler.
2. To investigate the abundance and distribution of planktonic fish eggs and larvae, zooplankton predators and competitors and the phytoplankton.
3. Monitor sub-surface water continuously along the ship's track for temperature, salinity, transparency and chlorophyll 'a'.
4. Collect water samples from the pump for salinity and nutrient analysis; calibrate the fluorometer with chlorophyll 'a' extracts; measure phaeophytin and identify the phytoplankton contribution to chlorophyll 'a' fluorescence, including the preparation of slides for electron microscope examination of the micro-flagellates.
5. Carry out hauls with the 2 sq m Lowestoft frame trawl to sample young fish.
6. Carry out hauls with the 2 m diameter ring net within 10 miles of the coast, to sample lobster larvae.
7. Use the changing net sampler to investigate the vertical distribution of herring larvae and other zooplankton.

8. Continue estimating sampling variance by carrying out replicate hauls with the multi-purpose plankton sampler.
9. To release 700 seabed drifters at 14 standard stations on the plankton survey grid.

#### NARRATIVE

CORELLA sailed from Lowestoft at 1630 h 3 September. The environmental monitoring systems were calibrated and began the continuous monitoring which was carried out for the remainder of the cruise. The 30" T.T.N. and auxiliary samplers were calibrated from 1847 h - 1946 h whilst on passage to the first station on the standard grid. The survey commenced at 2219 h 3 September and continued until a north-easterly gale prevented any further work after Station 88 had been completed at 1018 h 9 September. During this period a surface float, which was adrift from one of MAFF's current meter rigs, was recovered close to station 25 off the entrance to the River Humber, and a minor alteration was made to the cruise track to allow the ring net and Lowestoft frame trawl samples to be taken inshore during daylight. As there was no prospect of an improvement in the weather on 9 September CORELLA put into North Shields for water and stores, docking at 1320 h. While there a spare ring net was received from Lowestoft.

An improvement in the weather during the early hours of 10 September enabled CORELLA to sail again at 0815 h and work, which was just possible, was continued for the rest of the day in a very heavy north-easterly swell. By 0300 h next morning 11 September the wind had again increased to gale force and further work was impossible. The wind, which increased to severe gale force at times continued to blow from the north to north-east until the evening of 12 September. It was finally possible to resume the survey at 2059 h 12 September and all the remaining TTN stations covering the north-westerly portion of the standard grid were completed by 0455 h 14 September, although a number of ring nets and Lowestoft frame trawl hauls which had been planned for this area had to be omitted. Four hauls with the ring net were made later that morning in the Tees Bay area and during the afternoon a number of TTN hauls were made in the coastal herring spawning areas off Whitby and Scarborough. Finally the 30" TTN was recalibrated off Flamborough Head and this was completed by 1948 h when course was set for Lowestoft. The ship docked at Lowestoft at 1120 h 15 September.

#### RESULTS

All the aims listed were achieved except Nos 7 and 8, although the north-easterly portion of the planned survey grid was not completed, nor were some of the hauls with the ring net and Lowestoft frame trawl carried out in the northern half of the survey area, due to adverse weather conditions and lack of time.

During the cruise (Fig. 1) a total of 131 plankton stations were sampled using the multi-purpose sampler. 20 samples of neuston were collected with the 2 metre ring net and the 2 square metre Lowestoft frame trawl was used at 23 stations.

Preliminary examination of the plankton samples, indicates low densities of herring larvae during this cruise in both the Longstone and Whitby areas. Sprat larvae were widely distributed in small numbers.

A few lobster larvae were taken by the ring net and a small number of whiting by the frame trawl.

The solarimeter and deck quantum cell were run continuously throughout the cruise and two underwater spectroradiometer stations were worked when the weather was suitable during the first part of the cruise.

The usual fluorometric determinations of chlorophyll 'a' and phaeopigments in the sub surface waters were made at all stations on the standard grid. Material for examination by light microscope and electronmicroscope was preserved at selected stations.

Routine releases of seabed drifters were made at 14 standard stations on the survey grid, including one batch of 50 in the Humber sludge dumping area.

The environmental monitoring system worked well throughout the cruise with only one or two minor problems. Steep thermoclines were found at a small number of stations only and these were mostly within the deeper water off the western edge of the Dogger Bank.

R J Wood  
29 September 1976

SEEN IN DRAFT G Sinclair  
E T Bridge

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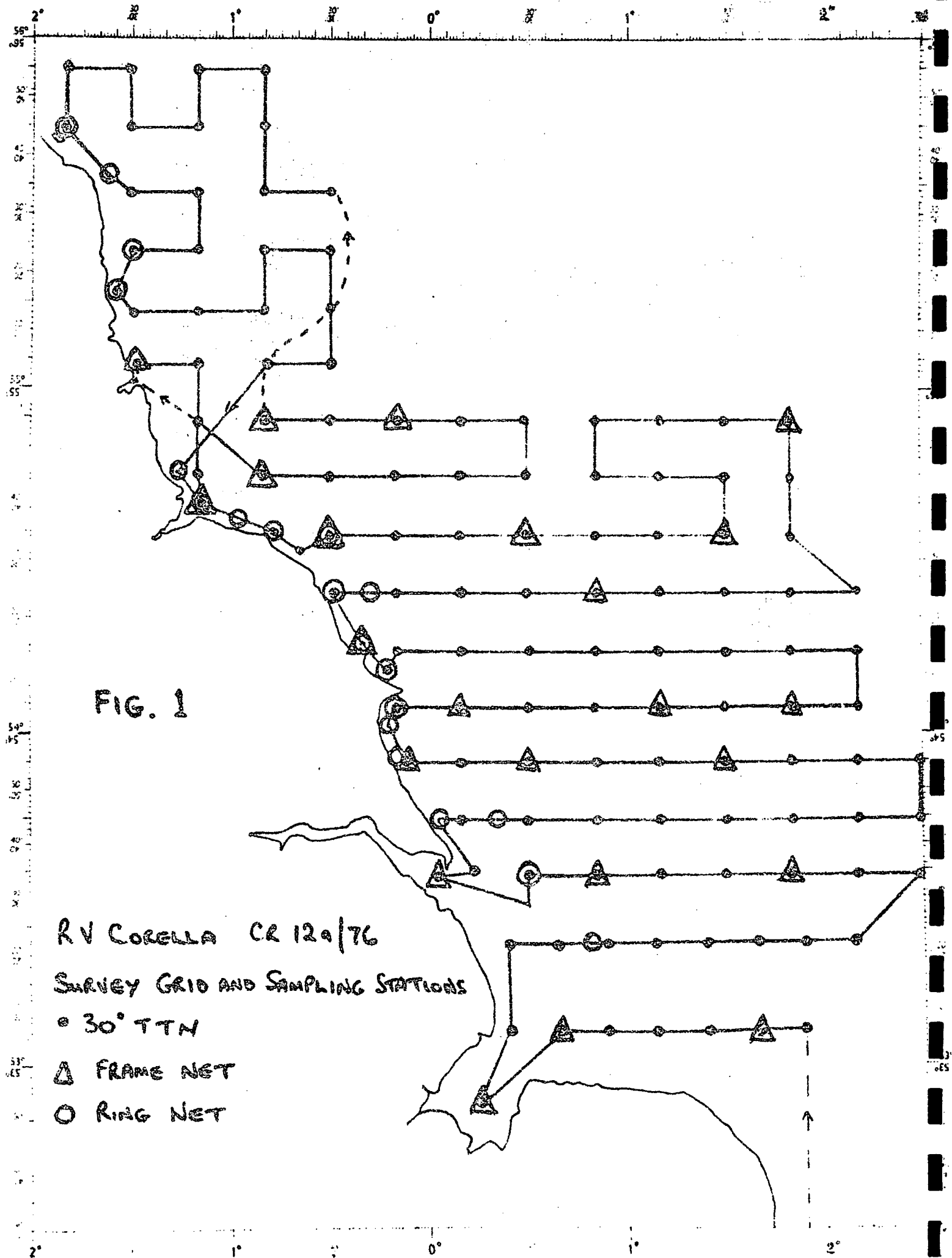


FIG. 1

RV CORELLA CR 120/76  
 SURVEY GRID AND SAMPLING STATIONS

- 30° TTM
- △ FRAME NET
- RING NET