

IMER 2B/81

RVS 2/81

VESSEL: RRS JOHN MURRAY

CRUISE PERIOD: 25-27 March 1981

PERSONNEL: M.B. Jordan H.S.O. Senior Scientist  
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ITINERARY Sketch chart and station list are attached.

Tuesday 24 March Loaded and set up equipment.

Wednesday 25 March Sailed at 0900. Due to heavy swell and gale forecast vessel anchored in Sound. Carried out 'in situ' and 'on-deck' primary production experiments and hydrocasts for irradiance, S<sup>o</sup>/oo and T<sup>o</sup>C measurements plus water-bottles for chlorophyll estimation.

Thursday 26 March Departed Plymouth Sound at 0730. Worked stations 1 to 7 making hydrocasts for measurements of S<sup>o</sup>/oo, T<sup>o</sup>C, irradiance, chlorophyll and bacteria content. Samples were also taken to be preserved with Lugol's iodine for phytoplankton analysis. Continuous measurements of surface S<sup>o</sup>/oo, T<sup>o</sup>C, Nitrate concentration and incident radiation measurements were made. 'On-deck' primary production experiments were made at stations 1, 3, 5 and 7

Friday 27 March Carried out 'in-situ' and 'on-deck' primary production incubations at Station 1. S<sup>o</sup>/oo, T<sup>o</sup>C irradiance and chlorophyll were also measured.

OBJECTIVES

- 1) To study the relationships between light, chlorophyll, primary production and fluorescence.
- 2) To provide 'sea-truth' data for the Undulating Oceanographic Recorder on the P R route.

PROCEDURE AND  
METHODS

It was not possible to carry out the second objective directly as the French ferry Cornouailles was off service with engine trouble and the weather was too bad for the undulator to be towed by the John Murray at the required speed.

The first objective was achieved by continuous surface monitoring of salinity, temperature, nitrate concentration, incident radiation and fluorescence. Vertical profiling was carried out at selected stations. 'In-situ' and 'on-deck' primary production experiments were carried out to test the validity of the results from the incubator which has an artificial light source of constant power.

EQUIPMENT  
PERFORMANCE AND  
CRUISE SUCCESS

The cruise was carried out in adverse weather conditions, with a heavy swell and Force 6-8 S.W. winds throughout. However 7 of the proposed 11 vertical profiling stations were carried out and two six-hour in-situ primary production stations were worked. The I.M.E.R. fluorometer failed to work satisfactorily and the cables to the N.B.A. CTD system and the submersible irradiance meter were cut by the propeller whilst trying to maintain the ship's position whilst working a profiling station in strong winds.

Prepared by: M.B. Jordan.  
Approved by: G.A. Robinson  
Date: 2 April 1981

## Circulation:

Internal

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External

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NERC

JOHN MURRAY  
26/81 25 → 27 March

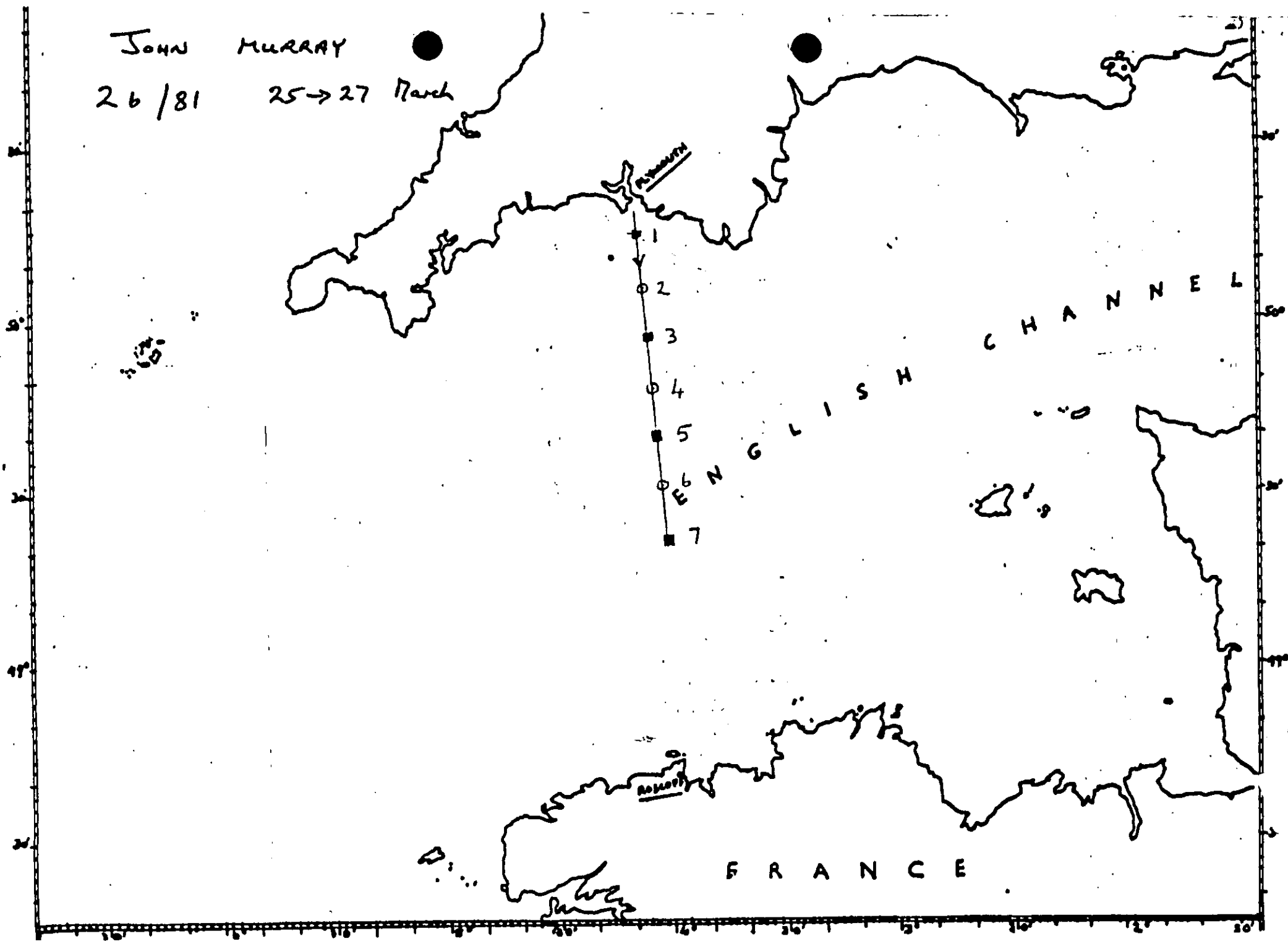


Table 1

IMER 2b/81

## STATION POSITIONS

Station	Lat N	Long W
1	50° 15'	04° 09'
2	50° 06.5'	04° 08'
3	49° 57.5'	04° 07'
4	49° 48.5'	04° 05.5'
5	49° 40.0'	04° 04.5'
6	49° 31.5'	04° 03'
7	49° 22.5'	04° 02'