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VESSEL RRS JOHN MURRAY

CRUISE PERIOD 15th to 21st July 1981.

PERSONNEL

M.B. Jordan	H.S.O.	Senior Scientist
A.J. Pomroy	S.O.	
N.C. Halliday	S.O.	
Mrs. P.E. Thomson	S.O.	
Mlle. C. Dupouy	French Observer	
M. J-Y Balois	"	"

Sketch charts and station lists are attached.

ITINERARY

Tuesday 14th July — Loaded and set up equipment on ship in Plymouth.

Wednesday 15th July — Sailed 0900. Anchored at Station 1. Carried out 'on-deck' and 'in-situ' primary productivity experiments. Water samples were taken from 1, 5, 10, 15, 20 and 30 metre depths for chlorophyll and C,H,N analysis. Sub-samples were preserved for phytoplankton and bacterial counting. Vertical profiles were carried out, at regular intervals, to measure salinity, temperature and sub-surface irradiance. Continuous measurements of on-deck irradiance were made. Water was pumped from depths of up to 30 metres to compare measurements recorded by an 'in-situ' fluorometer and a fluorometer in the vessel's laboratory.

Thursday 16th July — Worked 10 stations (2 to 11) across the Channel to Roscoff. At each station water samples were collected from six depths and profiles of salinity, temperature and light were made. At stations 3, 5, 7 and 9 'on deck' incubations for primary production estimation were made.

Friday 17th July — An in-situ primary production experiment was carried out at station 9 with regular water bottle sampling and profiling for salinity, temperature and irradiance measurements. Profiles were repeated at stations 10 and 11 on the way into Roscoff and an 'on deck' primary production experiment was carried out with water from station 11. The

ITINERARY (cont.)

vessel docked in Roscoff at 1800 to land the French scientists and sailed at 1930. At 2045 the Continuous Plankton Recorder and Fast Continuous Plankton Recorder were shot for a tow to compare catching rates.

Saturday	18th July	Steaming from Roscoff to the Bristol Channel.
Sunday	19th July	Started the monitoring track at 0015 off Clovelly. Recovered the plankton recorders at 0535 off Caldy Island.
Monday	20th July	Completed monitoring track at 1530. Docked into Barry at 1830.
Tuesday	21st July	Returned to Plymouth.

OBJECTIVES

1) To study the relationships between light, chlorophyll, primary production and fluorescence on a CPR route.

2) To monitor the performance of the Bristol Channel to update the validation of ecosystem model GEMBASE.

3) To carry out a double tow of a Continuous Plankton Recorder and a Fast Continuous Plankton Recorder at the same depth for at least 200 miles to compare their relative catching rates.

PROCEDURE and METHODS

1) Vertical profiles were carried out at 11 stations, measuring salinity, temperature and irradiance. Water samples were taken at six depths for chlorophyll and C, H, N analysis and for bacterial and phytoplankton counts. On deck irradiance was measured continuously. At two stations 'in situ' primary production experiments were carried out and at six stations 'on-deck' incubations for production estimation were made.

2) A small suite of variables was continuously recorded along the track shown in Figure 2.

3) The steaming time between the Western Approaches and the Bristol Channel was utilised for a comparative tow between a Continuous Plankton Recorder and a Fast Continuous Plankton Recorder.

EQUIPMENT PERFORMANCE AND CRUISE SUCCESS

All the objectives of the cruise were achieved, with no loss of time due to weather or equipment failure. Detailed analysis of the data is proceeding.

Prepared by: M. B. Jordan

Approved by: J K Bryan

Date: 23/7/81

Table 1 IMER 3/81

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'
8	49° 14.0'	04° 01'
9	49° 05.0'	03° 59.5'
10	48° 56.5'	03° 58.5'
11	48° 49.0'	03° 57.5'

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Fig 1

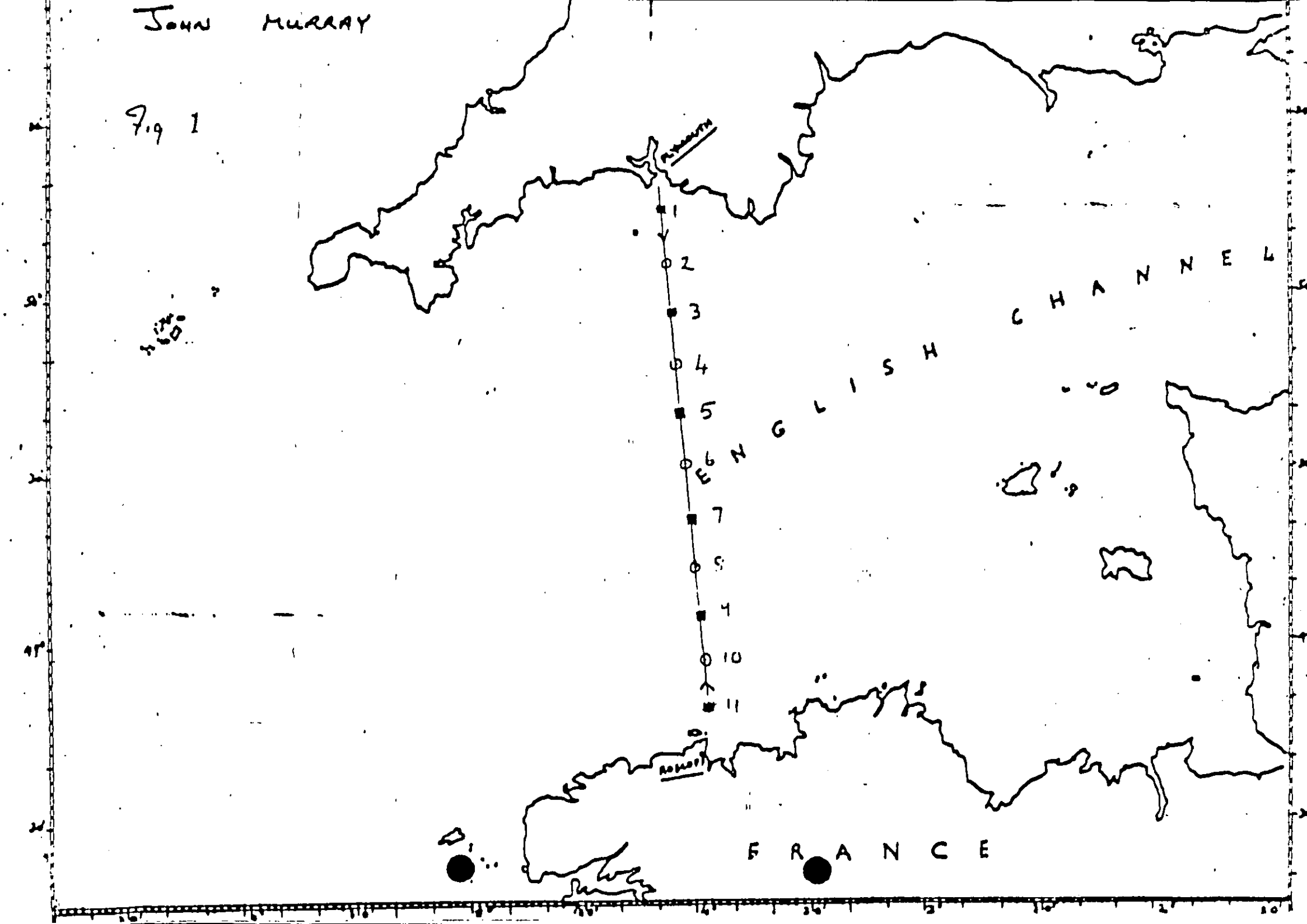
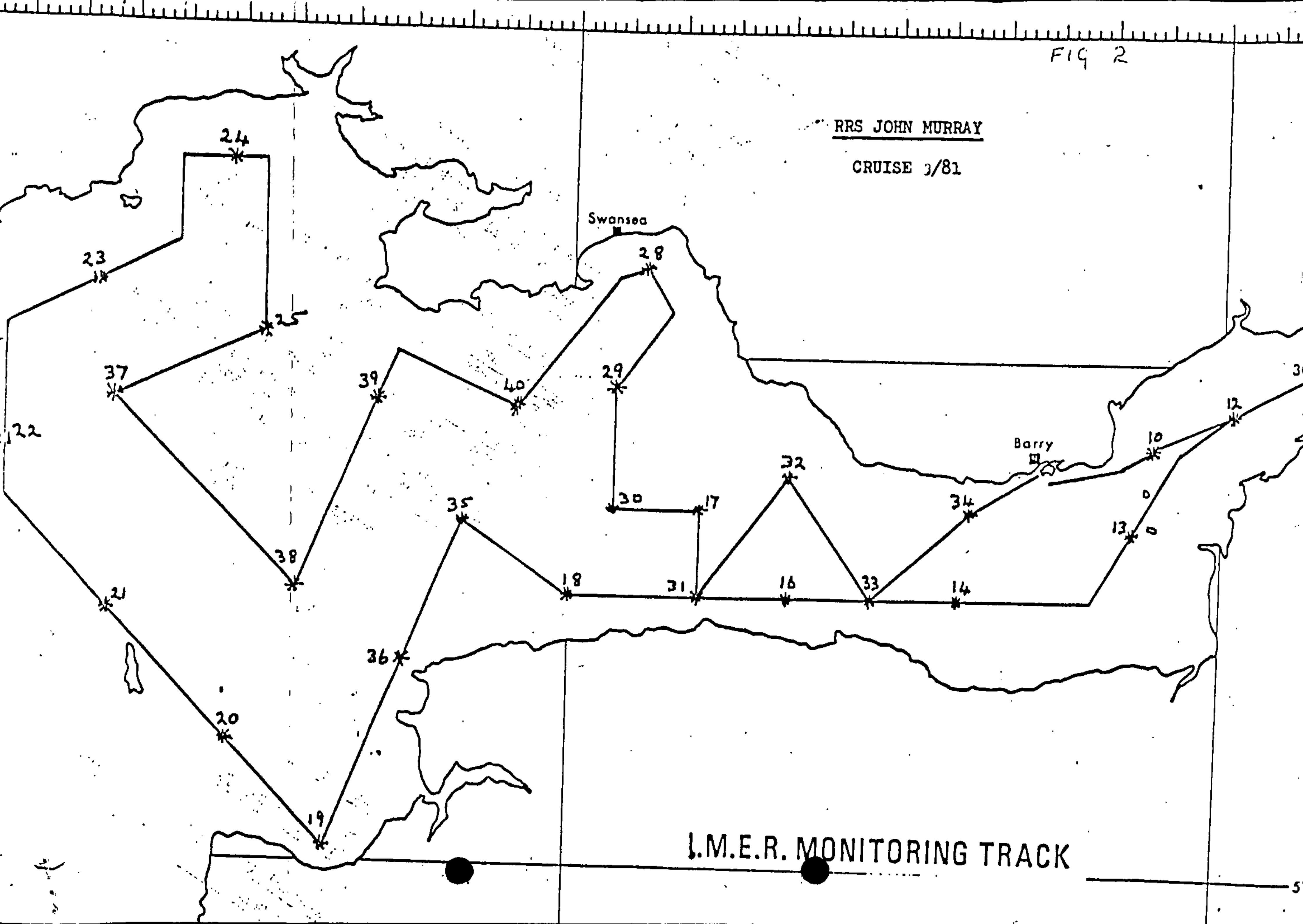


FIG 2



I.M.E.R. MONITORING TRACK