

VESSEL R.R.S. JOHN MURRAY

CRUISE PERIOD Part 1 16 March - 24 March

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ITINERARY

Sunday 15 March		Travelled to Barry and loaded equipment.
Monday 16 March	14.00	Sailed Barry
	15.20	Deployed pump and commenced horizontal profiling along the monitoring track, Fig. 1.
Wednesday 18 March	10.35	Replaced overside pump.
	16.00	Completed monitoring track off Barry.
Thursday 19 March	09.47	Commenced water sampling E off Scarweather Lightship.
	12.37	Completed water bottle stations. Hove to, to filter water samples.
	23.00	Completed station work, set course for Celtic Sea site.
Friday 20 March	10.55	DLLS haul 1 (Table 1).
	19.00	Live plankton collections.
	23.00	DLLS haul 2.
Saturday 21 March	00.33	Water bottle cast (7.1 litre bottles)
	00.49	Completed station work, set course for Dale Roads, Fig. 2.
Sunday 22 March	11.15	Set course for Celtic Sea site.
	15.30	CLLS haul 1.
	21.13	Water bottle cast.
	22.55	DLLS haul 3.
	23.21	Completed haul and set course for Lands End, Fig. 2.
Monday 23 March	19.07	Arrived Falmouth approaches and calibrated flowmeters at 2, 3, 4, 5, and 6 knots
	20.28	Completed calibration work.
Tuesday 24 March	00.40	Set course for Plymouth.
	08.30	Docked Plymouth and unloaded personnel and equipment.

- OBJECTIVES:
- 1) To continue the monitoring cruises in the Bristol Channel and Severn Estuary.
 - 2) To analyse the seawater and suspended particulate matter for trace metals in Swansea Bay as part of the continuing study of water quality in the area of Scarweather Sands and its association with the transport of toxic contaminants bound to particulate matter from areas of known effluent discharge.
 - 3) To test the new cod-end systems, opening and closing devices and new configurations of equipment fitted to the Double Lowestoft Longhurst System (DLLS).

- 4) To obtain a series of night and day oblique hauls with the CLLS and DLLS systems to ascertain the vertical, spatial distribution of the naupliar stages of Calanus helgolandicus and their diurnal migrations in relation to environmental variables and the older stages of the copepod population.
- 5) Net plankton hauls will be obtained for i) bulk and individual freezing of selected zooplankton species ii) onboard drying and weight/length measurements and iii) use in the laboratory for determinations of dry weight, ash weight, calorific values, carbon, nitrogen and gut contents.

PROCEDURES
AND METHODS

As outlined in the Cruise Programme. The grid was amended to suit prevailing conditions (see Fig. 1).

EQUIPMENT AND
OTHER
FAILURES

One day (21 March) was lost through bad weather although all work in the Celtic Sea was carried out in poor conditions (6-8 winds). An overside pump developed an earth leak during the monitoring survey and was replaced; three pumps developed faults by the end of the cruise. The thermistor of the thermosalinograph (RVS) did not work and was replaced on our completion of the monitoring grid off Barry.

Engine repairs required us to hove to off Swansea on the 19 March which fitted into the work schedule and caused no unnecessary delay.

Although some net plankton was frozen, weather conditions prevented on-board weighing and microscope work.

The control units of the CLLS cod-ends did not activate the gauze advance in proper time sequences and time was not available to investigate these problems.

RESULTS

The monitoring grid and water bottle stations in Swansea Bay were successfully completed. Salinity values measured off Avonmouth were very low (< 70/00). Three excellent hauls were taken with the Double LHPR system. The new (53 µm) cod-ends worked perfectly as did the solenoid activated opening and closing devices fitted on the large and small net systems. Two water bottle casts were taken following Haul 2 and 3 for determination of salinity, chlorophyll, C, N, bacteria and phytoplankton.

Investigation of net plankton indicated that we were sampling the onset of the first generation of Calanus; eggs and nauplii being very abundant.

Prepared by: R. Williams

Approved by: B.L. Payne

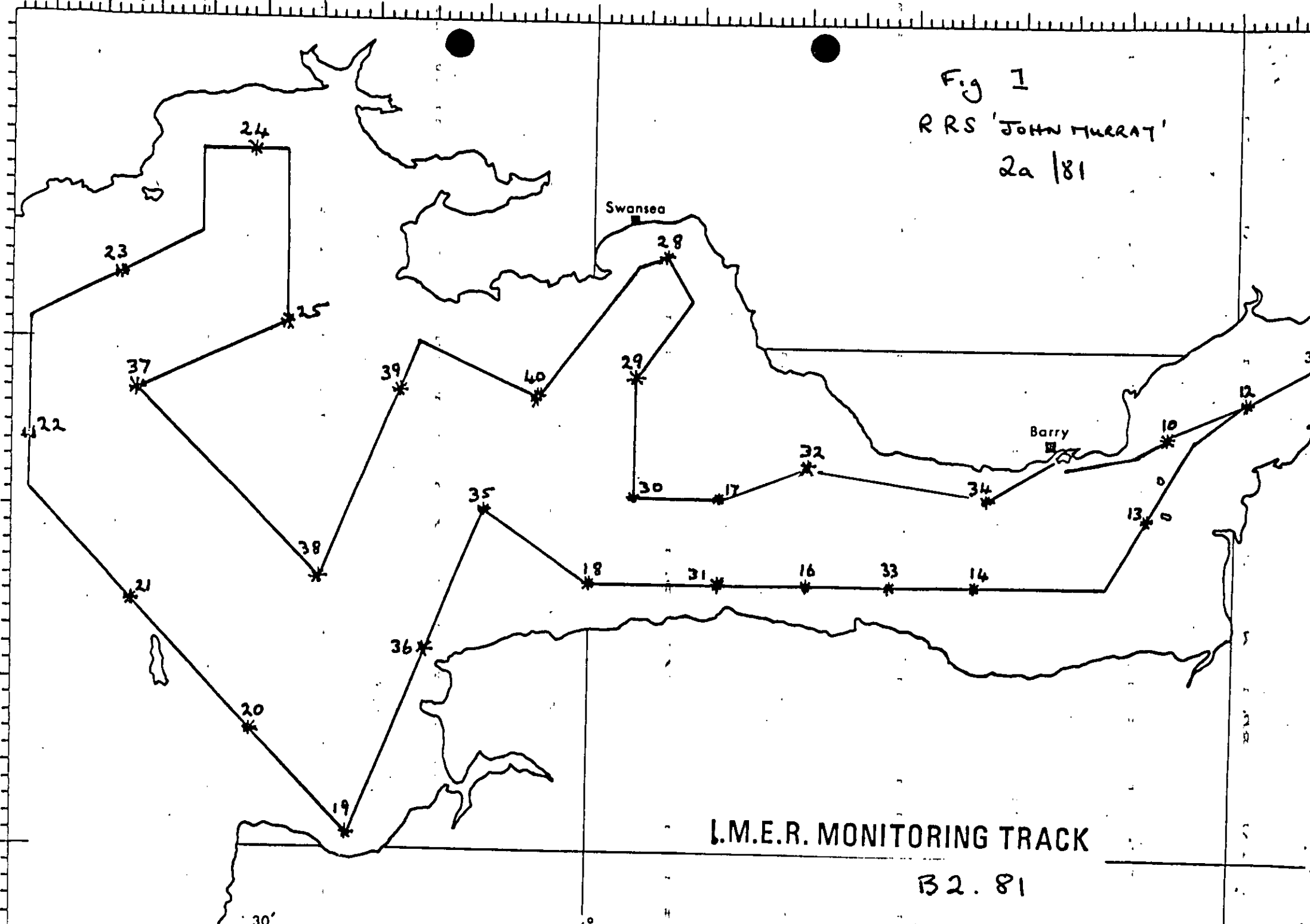
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RLS Murray 2a/81Table 1 Longhurst Hardy Plankton Recorder hauls

Sampler	Date	Time (GMT)	Position		Water depth(m)	Max. sampler depth(m)	No samples
			Green	Purple			
Double 1	20/3/81	1058	J39.34	H71.23	97	81	27
Double 2	20/3/81	2303	J39.25	H72.22	89	75	22
Combined 3	22/3/81	1649	J37.39	H74.63	90	74	samples frozen
Double 4	22/3/81	2255	J44.75	H67.25	104	88	12

Fig 1
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L.M.E.R. MONITORING TRACK

B2.81

Fig 2

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