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CRUISE REPORT R.R.S. JOHN MURRAY 12th-27th AUGUST, 1981

11/81

INTRODUCTION

The objective of this cruise was the continuation of investigations into the shallow geological geology of the Malin/Hebridean Sea area with particular reference to the nature and distribution of the Quaternary sediments. The primary method of investigation was low power Sparker (1000 Joule) and Pinger single channel analogue seismic reflection profiling. Traverses were carried out in areas not covered by previous surveys, in areas in which previous surveys had shown a particularly complex situation of Quaternary or bedrock geology and across the sites of recent I.G.S. boreholes. It was intended to take a series of gravity cores into the Quaternary sediments to assist in the interpretation of the seismic profiles, however this aspect of the cruise was curtailed due to a failure of the ship's winch engine. Other equipment malfunctions were of a minor nature and did not entail loss of survey time.

The quality of the seismic profiling records obtained is good with some outstanding traverses. Information relating to the Quaternary sediments is being incorporated into a regional study of Quaternary sedimentation by Mr. H. C. Davies whilst the solid geology is being interpreted by Dr. R.J. Whittington and Dr. M.R. Dobson of this department in co-operation with Dr. D. Evans of the I.G.S. Although permission was granted to survey in Irish waters and the scientific complement included an Irish Observer the cruise was conducted entirely in British waters.

SEQUENCE OF EVENTS

Tuesday 11th August.

All scientific personnel on board R.R.S. John Murray in Princes Dock, Liverpool. All equipment connected up and bench tested.

Wednesday 12th August

Left Princes Dock at 10.00 hrs. Near Liverpool Bar spent some time looking for lost current meter assembly but were unable to locate it. Thereafter made passage in flat calm sea.

Thursday 13th August.

On passage in calm but foggy conditions through the North Channel. Arrived at start of survey area at 15.00 hrs. and streamed Sparker and Pinger equipment. All equipment set up and surveying commenced by 17.00 hrs. in an area to the S.W. of Tiree. Continued surveying all night in the area in calm conditions.

Friday 14th August.

Completed survey lines in area S.W. of Tiree at 10.00 hours and retrieved equipment. Made passage to the W. of Tiree and streamed gear at 12.30 hrs. Survey continued for the rest of the day and through the night in the area N.W. of Tiree.

Saturday 15th August.

Continued surveying W and N.W. of Tiree in good weather conditions. Ran traverse line up between Rhum and Eigg and across to Mallaig for 15:15 hours. Retrieved all gear off Mallaig and sent away Z-boat to pick up Mr. M. Gallon, R.V.S. technician. Underway again at 16.30 hrs and commenced survey in the Sound of Sleat. Spent remainder of evening and the night surveying in the area between Eigg, Muck and Ardnamurchan in excellent weather conditions.

Sunday 16th August.

Continued surveying in the area between Skye, Canna and South Uist in a flat calm sea.

Monday 17th August.

Wind increased to force 5 during the morning, however continued surveying all day and night in moderating conditions.

Tuesday 18th August.

Recovered all equipment by 09.30 hours and rigged for dredging. Carried out three dredges across possible bedrock outcrop site but no obvious samples recovered. Rigged for gravity coring and took two cores at each of three sites before failure of ships main warp engine necessitated abandonment of the sampling programme. Streamed seismic equipment in the early morning and continued surveying.

Wednesday 19th August.

Continued surveying all day in deteriorating sea conditions. At 14.00 hrs. retrieved all equipment and made full speed for the Sound of Sleat as winds increased to gale force. At anchor in the Sound of Sleat by 17.00 hrs. whilst gale passed through the area.

Thursday 20th August.

Up anchor at 06.45 and made passage down the Sound of Sleat. Streamed gear at 08.30 and commenced surveying between Rhum and Skye and then through the Sound of Canna. Continued surveying to the S.W. of Rhum during the rest of the day and night in moderate sea conditions.

Friday 21st August.

Retrieved equipment at 07.00 hrs. and made passage to Mallaig to pick up some spare parts for the ship. Underway again at 10.30 hrs. and surveyed between Rhum-Eigg-Muck and the mainland in fresh conditions. Headed out westwards towards evening as the weather improved.

Saturday 22nd August.

Surveying continued all day and night in the Sea of the Hebrides in excellent conditions.

Sunday 23rd August.

Continued surveying in the Sea of the Hebrides.

Monday 24th August.

Surveying continued until 14.00 hrs. when all gear recovered and the vessel made passage for Cardigan Bay.

Tuesday 25th August.

Arrived off Bardsey at 15.15 hrs. and streamed gear. Commenced run across Cardigan Bay in flat calm sea. Continued surveying in Cardigan Bay all night.

Wednesday 26th August.

Continued surveying in Cardigan Bay in ideal conditions until 12.30 hrs. when all gear recovered and the vessel made passage for Barry.

Thursday 27th August.

Arrived in Barry 06.00 hrs. and tied up alongside of R.V.S. - Cruise completed.

SCIENTIFIC COMPLEMENT

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| Dr. R.J. Whittington | - | Principal Scientist, University College of Wales, Aberystwyth. |
| Mr. H.C. Davies | - | Scientist, " " " " " |
| Mr. M. Evans | " | " " " " " |
| Mr. J. Hickman | " | " " " " " |
| Mr. G. Holland | " | " " " " " |
| Mr. P. Holloway | " | " " " " " |
| Mr. A. Ring | - | Irish Observer, University College, Galway. |
| Mr. M. Gallon | - | R.V.S. Technician. |

It is a pleasure to acknowledge the assistance of Captain P. Moran and the Officers of R.R.S. John Murray in making this an enjoyable and successful cruise during which some 1400 nautical miles of surveying was carried out. I am also very grateful for the help in organising the cruise which was furnished with all their usual efficiency by Mr. C. Adams and Mr. I. Innes of R.V.S.

Dr. R.J. Whittington
Senior Scientist