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without reference to the Laboratory.

## CRUISE REPORT

F.R.V. "Mara"

17th February - 22nd March, 1969.

Objectives

1. To carry out a herring egg and larval survey on Ballantrae Bank.
2. To carry out tests on the relative efficiencies of encased and unencased Gulf III samplers.

"Mara's" annual refit extended over a longer period than originally planned and as a result the beginning of this cruise was delayed by one week. "Mara" sailed from Buckie on 24th February and reached Ayr on 26th February where the Scientific Staff joined the ship.

The egg survey on Ballantrae Bank was begun in the morning of 27th February. Grab hauls were first made in areas where eggs had been located in surveys made in previous years and subsequently the survey was extended to cover a wide area over the Bank. A very small patch of eggs was located in the area where spawn was obtained in 1968. A large proportion of these eggs were in an early stage of development.

The grab survey of Ballantrae Bank was continued on the morning of the 3rd March, when eggs were found in the same area as in the previous week: the patch was however considerably more extensive than it had been the week before. The covering of eggs was thicker; in the densest patches 4 or 5 layers of eggs were found.

During the week several 1 m oblique hauls were made but no larvae were found. At the end of the week "Mara's" engine developed a fault in the oil cooling system which prevented any work being done on Friday afternoon and the Monday and Tuesday of the following week. The remainder of that week was spent on further sampling of the egg patch. There was little evidence of any additional egg deposition, but the majority of the eggs sampled were at an early stage of development.

On the Monday of the ensuing week fair numbers of early larvae were taken in metre net samples over Ballantrae Bank, and the day was spent comparing hauls of the unencased Gulf III against a standard Gulf III. Bad weather precluded work on the following day and the scientific staff left "Mara" in Ayr while "Mara" sailed to return to the east coast.

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25th April, 1969