

Mr. Hall

R1/7

In Confidence: Not to be quoted without reference to the Laboratory. 5MR63<sup>5</sup>

CRUISE REPORT

F.R.V. "MARA"

8th - 27th April, 1963

Instrumented hauls were carried out with the following gear:-

- 1)  $3\frac{1}{2}$ " Mesh otter trawl
- 2)  $5\frac{1}{2}$ " Mesh otter trawl
- 3)  $3\frac{1}{2}$ " Mesh otter trawl with heavy sweeps
- 4) Wing trawl
- 5) Wing trawl with "Skagen" doors.

The work was carried out in about 20 fms of water between Covesea and Hopeman in the Moray Firth. Two hauls were made with each rig.

The measurements made were as follows:-

- 1) Total warp tension at the ship
- 2) Warp tension in front of the doors
- 3) Tension at backstrop shackle
- 4) Divergence of warp
- 5) Declination of warp
- 6) Engine temperature
- 7) Engine revolutions per minute
- 8) Water speed
- 9) Ground speed by Decca navigator.

All instruments functioned satisfactorily.

There were virtually no fish on the ground apart from a few small flatfish in the 10-15 cm range. These were mainly plaice and dabs. The cruise was concluded at Buckie on Thursday, 25th April and the instruments were dismantled and taken ashore on the 26th.

MICHAEL J. D. MOWAT  
8th May, 1963