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CRUISE REPORT

FRV "MARA"

6-29 September 1972

## OBJECTIVES:

- 1. To carry out an echo-sounder and mid-water trawling survey for sprats in the Moray Firth and off the north Aberdeenshire coast.
- 2. To investigate the population structure and diurnal pattern of behaviour and feeding of sprats.
- 3. To carry out limited sampling of sandeels in the area of Smith Bank.
- 4. To make limited ornithological observations.

## NARRATIVE:

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The "Mara" sailed from Buckie at 0300 on 6 September to carry out echosounding work and midwater trawling in the eastern part of the Moray Firth. Bad weather prevented work on 7 September, but two echo-sounding lines were completed that week before the ship docked at Buckie at 1300 on 8 September.

"Mara" sailed at 1400 on 11 September but strong northwesterly winds forced her to return to Buckie. The following day was spent echosounding off Spey Bay and during the rest of the week echo-sounder lines were completed between Troup Head and Rattray Head, the "Mara" docking for the weekend in Peterhead at 1300 on 15 September. Mr Shand disembarked on 15 September.

Mr Morrison joined the "Mara" on 18 September and in addition Dr TRP Bourne joined the ship for that day to make seabird observations. The first two days were spent completing the echo-sounder survey in the eastern Moray Firth. On 19 September one of the trawl warps became stranded and the following morning Messrs Burgess and Gray arrived from Aberdeen to turn the warps. "Mara" sailed west from Buckie at 1400, Dr Bailey left the ship at Lossiemouth on 21 September, and the "Mara" sailed at 0900 for the Inverness Firth. On 22 September the morning was spent searching for sprat traces in the area north of Buckie before returning to Buckie for the weekend at 1245.

Mr R Jones joined the "Mara" at Buckie on 25 September. The ship sailed at 1130 and spent the next two days working in the area between Burghead Bay and the Cromarty Firth. On 27 and 28 September the ship carried out bottom trawling for sandeels off Clyth Ness and on Smith Bank. The final morning of the cruise was spent trawling for sandeels in the Bellings area off Buckie and the "Mara" docked in Buckie at 1145.

## ECHO-SOUNDER AND MID-WATER TRAVILING SURVEY

The cchosounder survey was designed on a grid of tracks about 20 miles long from the south coast of the Moray Firth north to 58 N and spaced at approximately five mile intervals. The grid was completed from 3 10 W to 2 30 M (Lossiemouth - Feterhead), and in addition a number of tracks were covered in the inner Moray Firth and across Smith Bunk. In the outer Moray Firth east of Buckie midwater traces, consisting mostly of small plumes, were confined to areas well offshore in early September, but by

late September similar traces were found closer inshore. Traces were also found either close to the sea-bed or in midwater in the inner Moray Firth between Lossiemouth and Nairn and in the entrance to the Inverness Firth.

A Gourock midwater trawl with a headline transducer was used to sample the organisms responsible for the traces. In the offshore area a total of 12 hauls were made at depths of 3-33 fathoms, either in midwater or close to the sea-bed. Hauls made in the outer Moray Firth contained up to 11000 sprats (1 basket), mostly within the size range 3-8.5 cm and therefore the 1972 year-class. Catches taken in three hauls in Burghead Bay contained up to 58000 sprats and 45000 herring (totalling 22 baskets). The sprats in this area were mostly of a larger size than further east, ranging from 7.5-12 cm (mode 10 cm), with only a small percentage from 3.5-5.5 cm. The herring similarly ranged in length from 9-12.5 cm (mode 10 cm) and belonged to the 1971 year-class.

In addition small numbers of 0-group whiting (2.5-21.5 cm in length) were cought in the mid-water trawl, the largest numbers (maximum 97) being taken in the outer Moray Firth 5-20 miles offshore. None were caught in Burghead Bay. Hauls in the outer Moray Firth also contained large numbers of the coelenterate Cyanea capillata, though Aurelia aurita were very scarce. Samples of sprats, herring and 0-group whiting have been preserved for further analysis in the laboratory.

## SANDEEL TRAVLING

Samples of sandeels were obtained with a "Mara sandeel trawl" on Smith Bank and in the Bollings area, the largest catch being 2 baskets of Ammodytes marinus.

R S Bailey J Morrison 19.10.72