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## CRUISE REPORT

FRV "MARA"

24 May - 5 June 1971

## OBJECTIVES

1. A survey of Loch Ewe for planktonic and pelagic stages of plaice and other flatfish using a 1 m 60 net, a Gulf III and a modified Gourrock Number 1 midwater trawl.
2. Bottom fauna survey work.
3. To obtain samples of plankton, fish, bottom fauna and sediments for heavy metal analysis.
4. To obtain samples with Multi-depth Plankton Indicators at selected stations, together with associated temperature and salinity observations.

## NARRATIVE

Messrs Adams and Dunn joined the ship at Aultbea at 1345 hours on 24 May, and trawling commenced an hour later in the region north of Firemore Bay.

The following day a detailed survey of the whole loch (with the exception of The Sound) was completed using a WP3 net (this was adopted in preference to the 1 m 60 net) and at selected stations with a Gulf III sampler. Due to severe weather conditions on Wednesday 26th no work was possible, but on the 27th further trawl, WP3 and Gulf III sampling was completed along the centre of the loch.

On Friday 28th May the Multi-depth Indicator sampling and hydrographic survey was carried out together with some preliminary plankton sampling for heavy metal analysis.

The "Mara" lay at Aultbea for the weekend of 29 and 30 May and the scientific staff worked at the Firemore site with Mr McKay on the sorting of the material collected. On Monday 31st WP3 hauls were made in The Sound and further samples - of sediment, benthos and plankton - were obtained for heavy metal analysis. The following day midwater trawling was attempted in the very shallow areas of the loch but the net was badly damaged during the second haul.

Since "Mara" was due to commence work in the Moray Firth the following Monday, and since some repair work was necessary, the ship left Loch Ewe at 1300 hours on 1 June when Messrs Adams and Dunn transferred to the "Navicula" for further plankton sampling off Firemore Bay.

## RESULTS

### Planktonic and pelagic stages of plaice and other flatfish

No plaice were caught.

The other flatfish caught with the WP3 from 63 hauls during the survey period, the range in the size of the catch, and the average catch per haul are given below:-

Flounder	0-1	<1
Dab	0-24	5
Long Rough Dab	0-1	<1
Lemon Sole	0-10	<1
Witch	0-15	2
Norwegian Topknot	0-15	1
Topknot	0-16	2

Catches along the deeper part of the loch with the midwater trawl, the WP3 and Gulf III were:

Species	Midwater Trawl 10 hauls		WP3 11 hauls		Gulf III 8 hauls	
	Number per haul Range	Average size mm	Number per haul Range	Average size mm	Number per haul Range	Average size mm
Flounder	-	-	0-1	11	-	-
Dab	1-12	15	2-10	11	0-1	11
Long Rough Dab	0-3	21	0-1	24	-	-
Lemon Sole	0-4	18	0-4	12	-	-
Witch	0-4	23	0-7	13	0-1	12
Norwegian Topknot	0-1	12	0-7	8	0-1	9
Topknot	0-5	11	0-9	9	0-2	10

Other important components of the WP3 catches were larval whiting (average of 25 per haul) and larval sprat (10 per haul). In the midwater trawl catches sprats were the most abundant other species (29 per haul).

#### Temperature and salinity

At the eight multi-depth plankton Indicator stations worked on 28 May surface temperature ranged from only 9.5 to 9.8°C and surface salinity from 32.8 to 34.1‰, the latter salinity being recorded from Loch Thuirnaig near the inner end of the loch. Bottom temperatures ranged from 9.2 to 9.4°C and bottom salinity from 34.3 to 34.5‰.

#### Heavy metal analysis.

The material collected will be analysed by Dr Topping.

#### Bottom Fauna Survey Work

No bottom fauna survey work in addition to the sampling for heavy metal analysis was possible in the time available.