

R1/7

9
2MR66

In Confidence: Not to be quoted without
reference to the Laboratory.

CRUISE REPORT

F.R.S. 'MARA'

February 28th - March 26th, 1966.

Personnel:	B.B. Parrish	S.P.S.O.
	J.R.G. Hislop	S.O.
	D.G. Cross	A.E.O.
	A.W. Newton	S.A.

- Objectives: (a) To aggregate whiting by means of underwater lights.
(b) To catch the aggregated fish with hand lines and purse seine for tagging.
(c) To supply live fish for the Cairnryan tanks.

General: The scientific staff joined 'Mara' at Troon on March 1st and the first two weeks were devoted to fishing with handlines used in conjunction with underwater lights. In the third week the purse seine was shot twice and more handlining was carried out. The last week of the cruise was hampered by bad weather but trawling was managed on three days. The scientific staff left 'Mara' at Troon on March 25th.

Results: A 200 w underwater light was used on eight occasions and only once failed to produce an aggregation of organisms. In most cases a very dense echo trace formed. This trace was situated below the light and responded quickly to changes in the depth of the light. At dawn the trace descended to the bottom and dispersed.

Handlines worked at the depths of the echotrace produced catches of whiting, cod, saithe, spur-dog and *Trisopterus minutus*. Most of the whiting and cod were in very good condition and were tagged.

Although part of the echotrace recorded may have been caused by planktonic organisms aggregated by the lights it is clear that there were also substantial concentrations of fish in the aggregations. Unfortunately it was not possible to use the purse seine in the area where the largest aggregations were obtained (Loch Goil). Two abortive hauls were made with it in the open Clyde, where only light traces were recorded.

Several trawl hauls in Loch Long (about two miles from Loch Goil) gave catches consisting chiefly of *Trisopterus esmarkii*, whiting, codling and saithe together with quite a large number of Euphausiids.

On the evening of March 16th Messrs. Wilkins and Sangster joined the ship for a night and collected samples of whiting blood.

On March 21st small live whiting were caught by trawl and taken into Troon whence they were taken to Cairnryan for use by members of the behaviour section.

302 fish were tagged during the cruise. Of these, 212 were caught by handline in the light aggregations (201 whiting, 11 cod) and 90 were caught by trawl (36 whiting, 40 cod and 14 haddock).

J. HISLOP
4th April, 1966.