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CRUISE REPORT

F.R.S. "SCOTIA"

7th-26th July, 1961.

Objectives

The primary objective of the cruise was to determine the extent of the Norway lobster grounds in certain areas of the Scottish coast and to obtain information on the stock composition of this species. In addition, a limited programme of hydrography and plankton was detailed.

Method

Observations on the Norway lobsters and white fish were undertaken by otter trawling, the hauls being of 30 minutes duration. The codend mesh averaged 78 mm. A small mesh cover was attached to the codend.

Norway Lobsters

Investigations were undertaken in the Firth of Forth, the Moray Firth, the North Minch, the South Minch and the Firth of Clyde. The stock composition of male Norway lobsters in these areas is shown in Table I.

Escapes of all classes of Norway lobsters through the 78 mm codend mesh into the small mesh cover are shown in Table II.

The 50% release point for Norway lobsters for this otter trawl codend appeared to be around 18 mm carapace length.

A record of maturities of all female Norway lobsters was taken. These indicated that, except for the Firth of Clyde, all the mature female Norway lobsters were coming into spawn, this suggesting annual spawning. In the Firth of Clyde maturities were markedly different from elsewhere and the presence of barnacles on the carapace of all classes of Norway lobsters indicated that the casting season was also different from elsewhere. Norway lobsters, apart from the Firth of Clyde, were in general markedly clear of epizoic animals.

The principal predators on Norway lobsters were cod, skate, conger eel, and Scyllium.

Norway lobsters taken in the Minch showed a high degree of infestation by the aspidegastrid fluke (Stichocotyle nephropsis) the final host of which are various species of skates and rays. Elsewhere the occurrence of the fluke was rare or absent.

White fish

In the Firth of Forth white fish were sparse. Dominant species were lemon sole, whiting and cod in that order.

White fish in the Moray Firth were taken in fair numbers, the dominant species being haddock, cod, common dab, hake and plaice. In the Minch some fair hauls were obtained. The average catch of dogfish per one hour haul was 41, haddock 22, whiting 12, hake 12 and witch 5. Fish in the Firth of Clyde were very sparse, the principal species being plaice, common dab, haddock and hake in that order.

The contents of cod stomachs were recorded and flesh examined for parasites. Whiting were otolithed and other species dealt with according to standing instructions.

Hydrography

Temperatures and salinity samples were taken from standard depths on four lines of stations:-

(1) On an east-west line in the Southern Moray Firth.

(2) From Cape Wrath to the Butt of Lewis.

(3) From Tiree to Barra Head.

(4) From Loch Ryan to the Mull of Kintyre.

Plankton

Crustaceous plankton was most abundant in the South Minch; Calanus and Euphausids formed the bulk of those collections. The North Minch was also rich in crustaceous material and the hauls contained large numbers of fish larvae. The collections taken in the outer and inner Moray Firth were extremely poor and the dominant organism in every haul was Pleurobrachia.

H. J. THOMAS

2nd November, 1961.

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Table I.

The percentage size composition in 5 mm carapace length groups of male Norway lobsters in certain areas round Scotland, together with the number of individuals sampled and the mean carapace length in mm.

	No. in Sample	Carapace Length												Mean
		15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–75	
Firth of Forth	271	0	0	1.5	9.2	28.4	23.2	20.7	12.2	4.4	0.4	0	0	42.4
Moray Firth	1325	0	1.6	5.7	16.7	25.5	28.8	13.0	5.5	1.7	1.0	0.4	0.1	39.7
North Minch	1013	0.1	0.2	8.2	22.3	19.7	13.6	13.6	11.7	7.6	2.4	0.5	0	41.1
N.E. and Inner Minch	0	0	0	0	0	0	0	0	0	0	0	0	0	-
South Minch	1353	0.1	1.1	5.5	14.7	21.7	23.5	19.7	9.2	3.4	0.9	0.1	0.1	41.0
Firth of Clyde	185	0	1.1	7.0	37.8	28.6	21.1	3.2	1.1	0	0	0	0	35.8

Table II

The numbers of Norway lobsters retained in the codend and escaping into the small mesh cover for each mm size group, carapace length over the range 21 mm and 42 mm, together with the percentage escapes.

Carapace Length mm	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
No. of Escapes	8	3	7	13	23	16	22	31	22	37	40	29	27	22	22	18	19	17	7	13	5	5
Total No.	15	16	28	47	95	99	138	155	175	257	243	262	293	275	266	228	255	256	224	226	190	192
% Escapes	53.3	18.8	25.0	27.7	24.2	16.2	15.9	20.0	12.6	14.4	16.5	11.1	9.2	8.0	8.3	7.9	7.4	6.6	3.1	5.8	2.6	2.6