CRUISE REPORT

FRV "C L U P E A"

13 July to 1 August 1970

Objectives

1. To determine the stock composition and abundance of Norway lobsters on the fishing grounds in the Firth of Clyde, South Minch (south-west of Scotland), North Minch, Noup Deep and Moray Firth.

2. To obtain data on the season and frequency of spawning.

3. To establish the by-catch of white-fish species in the Norway lobster fishery and obtain further information on predators of Norway lobsters.

Narrative

The scientific staff joined "Clupea" at Buckie on 13 July. The steering-gear broke down that afternoon as "Clupea" was leaving harbour. This fault was repaired but next day the weather broke and sailing was further delayed until the 15th.

In the first few hauls the flat trawl boards gave great trouble by sticking in the mud. Vee doors with 20 fathom sweeps were substituted and this gear worked without further trouble.

In the Clyde area a piece of wreckage was picked up which was too heavy to heave aboard, and the net had to be cut away. Spare gear was taken aboard at Oban on the 22nd where Mr Hay was put ashore and replaced by Mr Stuart; both assistants were given a thorough grounding in fish-handling techniques by Mr Jermyn.

All areas in the programme were sampled. Norway lobsters were fairly plentiful except in the North Minch where they were rather scarce.

A "Scotia" prawn trawl with 70 mm cod-end and whole cover was used throughout the cruise.

Results

A total of 16,400 Norway lobsters were measured and classified as to sex and condition. Ovary development was noted in samples of females from each area. The stock composition of male and female Norway lobsters by areas is shown in Table 1. The percentage of total females within each ovary development stage is shown by area in Table 2. As has been noted before, these data suggest that off the Scottish west coast, maturity is more advanced as the latitude increases.

The percentage of Norway lobsters infected with Stichotyle nephropsis was: Firth of Clyde 1%, South Minch 15%, North Minch 12%, Noup Deep 0% and Moray Firth 0%. A sample of large Norway lobsters from the Inner Sound (Sound of Rǿasay) had an infection rate of 44%.

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White-fish

The most common commercial species of white-fish caught in each area are shown in Table 3. In addition the following catches were recorded from the statistical areas mentioned.

T. esmarkii 1,350 (XX15b), 1,328 (XX15d), 971 (YY10c) and 925 (XX13c).

M. poutassou 96 (XX15b).

Cod were examined for nematodes in the flesh. Specimens of Urophycis blennoides were deep frozen and returned to Dr Hawkins. All other fish were treated according to Standing Instructions. Two unusual fish were recorded, a red-band fish (Cepola rubescens) from XX12b and a pearl fish (Echiodon drummondi) from A17a. The holothurian Stichopus regalis was present in the haul containing the pearl fish.

Plankton

Four samples were taken, three from south-west Scotland and one from Noup Deep. All samples were low in crustaceous organisms and were composed mainly of Beroe cucumis, Aglantha digitale, Cosmetira pilosella and Sagitta elegans. Salpa fusiformis and Spiratella retroversa were common in the area south-west of Scotland.

C. Davidson
17.8.70

TABLE 1

The percentage size composition of male and female Norway lobsters in specified areas round Scotland, together with the number of individuals sampled, the mean carapace length in mm and the percentages of soft and berried

Area	No. in sample	10/14	15/19	20/24	25/29	30/34	35/39	40/44	45/49	50/54	55/59	60/64	65/69	70/74	75/79	Mean	% Soft	% Berried
Firth of Clyde	1,524 ♂	-	0.9	12.9	38.2	23.1	14.2	7.3	2.0	0.9	0.4	-	-	-	-	30.7	2.8	-
	1,960 ♀	-	1.0	13.8	46.5	31.9	6.3	0.5	0.1	-	-	-	-	-	-	28.4	5.4	1.3
West of Scotland	3,562 ♂	-	5.2	33.0	29.0	15.0	7.9	4.3	3.1	1.3	0.6	0.4	-	-	-	28.8	1.6	-
	3,105 ♀	0.1	8.8	55.1	31.6	3.9	0.5	-	-	-	-	-	-	-	-	23.6	2.1	0.3
North Minch	754 ♂	-	-	4.0	11.9	17.2	11.0	12.7	10.6	10.7	8.7	7.9	3.7	1.2	0.1	43.0	-	-
	361 ♀	-	0.3	6.1	25.5	46.8	18.3	3.0	-	-	-	-	-	-	-	31.3	1.5	0.6
Noup Deep	409 ♂	0.2	-	0.2	7.1	22.2	34.7	17.8	9.3	7.1	1.0	-	0.2	-	-	38.2	0.5	-
	229 ♀	-	-	1.3	11.8	38.8	38.8	7.0	1.3	0.9	-	-	-	-	-	34.3	3.4	6.5
Moray Firth	2,054 ♂	-	0.9	9.4	29.4	34.3	18.3	6.7	0.9	0.1	-	-	-	-	-	31.2	0.6	-
	2,442 ♀	-	0.9	8.3	52.3	32.1	5.9	0.5	-	-	-	-	-	-	-	28.8	3.3	3.9

Total males 8,303 Total females 8,097

TABLE 2

The percentage of the catch of female Norway lobsters sampled for each stage of ovary development 0 to V, and berried, by areas

Area		Firth of Clyde	Scottish west coast	North Minch	Noup Deep	Moray Firth
No. in sample		1,102	1,147	361	229	814
Maturity Stages	0	7.3	10.4	4.4	0.4	5.8
	I	14.0	18.0	10.2	10.9	7.9
	II	5.0	9.9	5.3	5.2	17.2
	III	20.3	18.7	7.5	8.3	21.1
	IV	32.6	23.8	22.2	25.8	17.4
	V	19.6	18.5	49.9	43.7	26.8
Berried		1.4	0.7	0.5	5.7	3.8

TABLE 3

The numbers of commercial species of white-fish caught in each area by "Clupea" during the Norway lobster survey

Area	No. of ½ hr hauls	Lemon sole	Plaice	Common dab	Megrim	Witch	Cod	Haddock	Hake	Saithe	Whiting
Firth of Clyde	10	-	3	3	1	13	19	68	284	37	482
Scottish west coast	10	13	3	2	17	563	21	451	41	8	671
North Minch	8	41	-	4	18	260	11	571	66	25	352
Noup Deep	7	16	-	3	157	233	3	469	4	1	35
Moray Firth	14	261	49	817	-	196	12	1,618	30	1	406