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## CRUISE REPORT

F.R.S. "SCOTIA"

13th-30th October 1964.

Narrative

"Scotia" sailed from Aberdeen on the 13th October. The first and major part of the cruise was spent in the Moray Firth and the last two days in the Firth of Forth. The cruise ended at Granton on the 30th October. Only one day was lost owing to bad weather.

Trawling

In all, 80 half-hour hauls were made using the "Scotia" Nephrops trawl with a cod-end whose mesh averaged 61 mm. In the Moray Firth, 28 hauls were made in area A14b (off Burghead), 38 in B14a (South Deep) and one in A15d. Six hauls were made in the outer (B11d) and seven in the inner (B11c) Firth of Forth.

Norway Lobsters

In contrast to the July cruise, Nephrops were more abundant off Burghead than in the South Deep. Hauls containing up to 2469 and 2474 Nephrops per half-hour were taken off Burghead, while the largest haul taken in the South Deep contained only 364. Whereas Nephrops were scarce in the outer Firth of Forth (outside the Island of May) in July, they were abundant both inside (catches up to 2395) and outside (catches up to 1901) in October.

The carapace length-composition of male Norway lobsters is shown in Table I.

A light meter was used after each trawl haul to determine the light levels at 10 m intervals from surface to bottom. In general the largest catches of Nephrops were taken at bottom light levels between 0.2 and 0.00001 Lux. The only exception to this was a higher reading taken after a large early morning haul, when a rapid change in surface light makes it likely that the catch was taken at a light level much lower than that recorded.

Underwater photographs of the sea bottom on Nephrops grounds were taken with the camera both moored and attached to the trawl headrope.

Squid

Poor catches of small squid were taken in the Moray Firth. Loligo mainly ranged in size from 4 to 13 cm (though a few up to 19 cm were taken) and Alloteuthis mainly from 4 to 7 cm.

Shrimps

Catches of up to 500 pink shrimps per half-hour haul, almost all in the small-mesh cover, were taken in the South Deep. Most were Pandalus montagui though a few P. bonnierii were present. Crangon allmani (up to ca 200 per haul) were also taken.

Hydrography and Plankton

Temperature observations were made and water samples taken for salinity, oxygen, phosphate, nitrate, silicate, sedimentation and B.O.D. determinations. Current indicators were released at three stations. Oblique plankton hauls were made.

JAMES MASON  
28th December, 1964.

TABLE I

Percentage size composition (5 mm carapace length groups) of male Norway lobsters, together with mean carapace length

Area	No. Measured	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	Mean
Burghead	6649	0.2	4.3	24.0	37.3	20.0	9.2	3.7	1.1	0.2	-	-	-	28.1
South Deep	2330	0.4	3.8	30.3	36.0	15.3	8.2	3.8	2.0	0.2	0.1	-	-	27.7
Outer F. of Forth	2332	-	1.5	16.4	25.9	37.6	11.2	4.2	2.3	0.7	0.1	+	-	30.3
Inner F. of Forth	2936	-	3.3	31.0	31.6	21.8	5.4	3.5	1.5	1.1	0.6	0.1	0.1	28.0