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THE LABORATORY

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CRUISE REPORT

FRS 'CLUPEA'

22 JUNE-11 JULY 1970

OBJECTIVE

To survey the North Sea area from the Scottish coast to 1°E and between $55^{\circ}30'\text{N}$ and $57^{\circ}30'\text{N}$ using sonar and the fish echo counter, with associated fish sampling by pelagic trawl.

NARRATIVE

'Clupea' left Buckie early on the morning of 23 June. During the first day, adjustments were made to the fish counter towed body using a tilt and roll recorder, and a trawl haul was made to ensure that the netsounder was working properly. Thereafter, the planned survey track was followed as closely as possible, but the southern part of the survey had to be confined to the immediate coastal area because of bad weather. The two intermediate week-ends were spent in Aberdeen, and 'Clupea' returned to Buckie on the evening of 9 July.

ECHO SURVEY

During the first week the Simrad SK3 sonar was used in a side scan mode in an attempt to count fish schools transverse to the ship's track. However it proved to be very difficult to interpret the records because of strong bottom reverberation, and for the remainder of the cruise the sonar was used as an echosounder. Very few fish traces were seen during the survey, the only significant midwater ones being in Aberdeen Bay ($57^{\circ}17'\text{N}$, $1^{\circ}54'\text{W}$), off Scurdy Ness ($56^{\circ}39'\text{N}$, $2^{\circ}15'\text{W}$), east of the Bell Rock ($56^{\circ}23'\text{N}$, $2^{\circ}13'\text{W}$) and off St Abb's Head ($56^{\circ}0'\text{N}$, $2^{\circ}0'\text{W}$). In addition some bottom traces were seen around 57°N , $0^{\circ}15'\text{E}$.

The fish echo counter recorded very few fish, due mainly to the small size and low numbers of fish present.

FISHING

The gear used was a midwater trawl with a $\frac{1}{2}$ " mesh codend. A total of 13 one-hour hauls were made, and the netsounder was used for most of these to determine the depth of the net. Attempts were made to adjust the net depth by changing warp length or engine revs, but it proved surprisingly difficult to get accurate control, possibly because the net was too light.

RESULTS

Sprats were only common in the two hauls made in Aberdeen Bay, off the Don ($57^{\circ}08'\text{N}$, $01^{\circ}55'\text{W}$) with 13,700 and 4,154/hr, and in Burghead Bay ($57^{\circ}40'\text{N}$, $03^{\circ}40'\text{W}$) with 1,350 and 1,568/hr. These were exclusively composed of '1'-group fish. In Aberdeen Bay the length range was 5-7.5 cm with means of 6.98 cm and 6.16 cm. In Burghead Bay, the length range was 6.5-9.0 cm with means of 7.39 and 7.73 cm.

Herring were taken in six hauls, of which two contained larvae 2-4 cm long. One haul ($56^{\circ}40\frac{1}{2}'N$, $02^{\circ}12'W$) contained 34 herring (6-7 cm), and another ($57^{\circ}42'N$, $03^{\circ}40'W$) 12 herring (13-14 cm).

Sandeels were taken in all hauls and were composed of '0'-group A. marinus, apart from one haul made close to the bottom. Sandeels were most numerous in four hauls made in the afternoon between 16.30 and 18.30 hours (1,350-2,650/hr) and less common in hauls made at midday, between 11.15 and 14.40 hours (16/hr, 33/hr and 287/hr) and in the morning, between 08.35 and 09.40 hours (2/hr, 189/hr).

Haddock were taken in 9 hauls with 10-30/hr, except at $57^{\circ}30'N$, $00^{\circ}09\frac{1}{2}'W$ where 216/hr were caught. These were consistently from 3-8 cm long. Haddock were absent from the two hauls in Burghead Bay and one haul made near the Longstone.

Whiting were rarely caught and no '0'-group fish were taken.

Cod were present in all the east coast catches except one, but absent from those in Burghead Bay. These were all '0' group fish consistently in the range 2-6 cm.

Saithe occurred in 7 hauls in small numbers and were all '0'-group fish in the range 4-10 cm.

T. esmarkii occurred in 5 hauls, but only one had a considerable number (3,155/hr) ($57^{\circ}02'N$, $00^{\circ}48'W$). The others were from Aberdeen and Burghead Bays. All were '0'-group fish in the range 2-8 cm.

Others. Two hauls contained a few T. minutus and another contained grey gurnards.

Invertebrates. All the hauls contained a large number of medusae which comprised the bulk of the catch. These belonged mainly to Aurelia aurita, Staurophora mertensii and Cyanea lamarckii.

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2 December 1970