

CRUISE REPORT.F.R.V. "SCOTIA".October, 1949.OBJECTS:

The objects of this cruise were to make the usual routine survey of the fish stocks, together with the hydrographic and plankton conditions in this northern North Sea area. The echometer was used in an attempt to spot fish.

NARRATIVE:

A comparative trawling experiment was inserted before the pre-arranged northern North Sea cruise and this, combined with bad weather, delayed the start of the northern cruise for more than a week. The programme was therefore modified to suit the available time.

The most important stations were those of the lines at 60° 01' N and 61° 01' N latitude. These were therefore attempted and the remaining time was spent doing stations on the outward run to the most southerly of the lines. Altogether nineteen of the originally intended thirty-nine stations were done, but bad weather prevented the use of tow-nets at two of the stations.

TRAWLING:

The net in use was a 30 feet Otter Trawl with an 80 mm. cod-end mesh, also a small mesh cover.

Throughout the trip the trawl catches were small in total quantity compared with previous cruises of this ship and from what might be expected from this area after sampling in the previous month by the "EXPLORER". The headline was floated throughout the cruise and the net appeared to be fishing on the bottom from the appearance of the trawldoors and the catches of invertebrates.

Only two small splits occurred throughout the cruise.

Only very small numbers of 0+ brood of haddock were encountered, never more than 13 at any one station. Similarly with 0+ whiting although at two places C14d and B14b hauls of over 180 of these fish were taken.

The species of fish which occurred were haddock, cod, skate, dogfish, witch, megrim, lemon sole, ling, etc. but never many of any of the larger species in any one haul.

Invertebrate catches were small throughout the cruise and nothing unusual was encountered.

PLANKTON/

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Plankton hauls were done at all stations, except two, of the modified programme. Twice the surface silk net was torn and had to be replaced and at one station the middle net had been improperly lashed on and was lost.

From a preliminary scrutiny Calanus was found to be present in practically all samples from the tow-nets and in the Hensen also. Calanus was predominant in the heavy tow-net catch from 100 metres at F19c.

Sagitta elegans was the principal species in dense hauls from the middle and bottom tow-nets and the Hensen catch from C18d, while Pleurobrachia pileus was predominant in other heavy catches at B14b in the same nets.

The Standard catches were light throughout the cruise.

HYDROGRAPHY:

Temperatures and salinity samples were taken at stations specified in the modified programme except at 61°01'N. 0°30'E where the weather was too severe.

Drift bottles were released in groups of five at the specified stations.

Temperature conditions observed were:-

- (a) East Scottish coast and East Orkney:- uniform from surface to bottom at about 10.6°C.
- (b) East Shetland:- 10.0°C. uniform.
- (c) Southern (60°01'N.) section and Fair Isle:- uniform temperature of about 9.3°C. with a cold bottom layer about 40 metres thick at 7-8°C.
- (d) Northern (61°01'N.) section:- similar to (c) but the two most easterly stations were about a third of a degree cooler, and the most westerly station at 1°00'W. was warmer, being 9.6°C. uniformly to bottom.

Surface temperatures throughout were about 0.01-0.02°C. cooler than the temperatures at 20 metres.

ECHOSOUNDING FOR FISH:

A number of fish traces were observed, but no correlation with trawl catches could be deduced. These traces have been preserved. It is thought by Dr. Wood that traces from East of Fair Isle and off the Aberdeenshire coast may represent herring.

ROBERT W. ELLIS.
25th November, 1949.

CIRCULATION:

Mr. London	Dr. Blegvad	Dr. Lucas	Capt. Bruce
Capt. Champness	Dr. Devold	Dr. Wood	Mr. R.W. Ellis
Mr. Graham	Mr. Wimpenny	Dr. Tait	Mr. R.E. Craig
Dr. Tanning	Dr. Jospersen	Dr. Fraser	Mr. R.F. Craig
Dr. Carruthers	Mr. E. Ford	Mr. Rae (Leith)	Mr. G.C. Bolster.