

C R U I S E R E P O R T.

F.R.S. "SCOTIA".

July - August, 1951.

"SCOTIA" sailed from Aberdeen on the 26th July to investigate the distribution of autumn spawned herring larvae in the North Sea and to carry out the first Fladen Survey. All stations were completed without incident apart from four to the east of Shetland which were omitted due to shortage of time and an unfavourable weather forecast. "SCOTIA" docked again in Aberdeen on the 4th August.

HYDROGRAPHY:-

Temperature and salinity samples were taken at the specified depths at all stations and oxygen, phosphate and pH samples at the Fladen stations. The highest surface and lowest bottom temperatures, (ca. 13.5°C and 6.5°C respectively) were recorded east of the prime meridian. In this region a sharp thermocline of 5 - 6°C was in evidence in the 20-30 m. stratum. A decrease in the surface and increase in the bottom temperatures occurred westwards to give values of 11°C and 9°C respectively in the vicinity of the coast and here the sharpest temperature discontinuity of around 1°C occurred generally in the 10-20 metre stratum.

Phosphate values were fairly uniform over the area with values of 0.15 - 0.55 µ.g. at P₀₄ - P in the top 20 metres increasing gradually with depth to around 1.2 µ.g. at the bottom. pH values showed little variation with depth; the highest values were recorded on the western half of the Fladen area.

PLANKTON:-

Sampling with a Standard net gave no indication of any major phytoplankton population within the area.

The macro-plankton collections were, in general, moderately rich except in the vicinity of the coast where *Pleurobrachia* and *Cyanea* dominated the small catches which were made. To the east of this area, within the Moray Firth, and around Orkney and Shetland a richer plankton population, chiefly composed of *Calanus*, *Limacina*, *Aglartha*, *S. elegans* and *Cosmetira* was present. Two stations north-west of Shetland yielded large collections of *Salpa fusiformis* and specimens of *Tima bairdii* were taken in F12d. *Beroe cucumis* was also a common constituent of many of the collections. Herring larvae were very sparse but mackerel larvae occurred in considerable numbers in the southern part of the survey area. Over the Fladen grounds a fairly uniform and moderately rich population dominated by *C. finmarchicus* was found.

TRAWLING:-

Flat fish were very sparse throughout the cruise. The largest catch, of seven lemon soles, was made in C12a. Whiting made up the bulk of the majority of the catches. They were most numerous in C19C, C12a and B11d. Haddock were the only other fish of any importance in the catches, apart from /

from a haul of 96 horse mackerel at the Buchan Deeps. Haddock were most numerous in A16a, B15d and C13a. O group haddock were taken in small numbers at C12a, C12d and A16a with a modal size of 8 cm in the first two areas and of 10 cms in the last. The catches of the Fladen trawl hauls were disappointing. The largest haul yielded only 85 herring and the others considerably less.

ALAN SAVILLE.

7th August, 1951.

CIRCULATION:

Mr. W. Russell
Capt. C.H. Champness
Mr. M. Graham
Dr. C.E. Lucas
Dr. J.N. Carruthers
Dr. H. Blegvad
Dr. A.V. Taning
Dr. F. Devold
Dr. H. Thomsen

Mr. F.S. Russell
Mr. E. Ford
Mr. K.M. Rae
Dr. G. Reay
Dr. H. Wood
Dr. J.B. Tait
Dr. J.H. Fraser
Dr. A. Ritchie
Dr. B.B. Rae

Mr. B.B. Parrish
Capt. E.A. Bruce
Capt. G.B. McLaren
Mr. A. Saville
Mr. R.G.G. Lawrie
Mr. A. Corrigall
Mr. Graham
Spare 5.