

CRUISE REPORT

F.R.S. "SCOTIA"

31st July - 16th August.

Scotia sailed from Aberdeen at 1600 hrs. on the 31st July. All the stations en route to Denmark were completed uneventfully by the 5th August, although trawling had to be omitted at two stations off the Danish coast because of the unsuitability of the bottom. Scotia then proceeded to Esberg to collect a consignment of hydrographic equipment. Soon after leaving Esberg on the 8th August the weather began to deteriorate, and after the first three stations of the section along 55°32'N had been completed, further work had to be discontinued and a direct passage made to Leith. There Mr. Fairbairn joined the ship and bunkers were taken. On leaving Leith Scotia steamed to St. Abbs Head where several hours were spent in making an echo-sounder survey of, and in trawling on, the Myxine grounds in which Mr. Fairbairn is interested. The remainder of the Scottish east coast stations were then successfully completed before Scotia steamed to the Fladen ground to commence herring trawling. It was decided that half-hour hauls offered the best prospect of getting appreciable catches of herrings which should still retain some scales. Catches however were disappointingly small and only a small proportion of the herring caught were suitable for the purpose. A considerable swell was running during this work which was doubtless a contributory factor to the poor condition of the herring. Bad weather eventually put an end to this work before as large a sample as had been desired was obtained. Scotia docked in Aberdeen at 1500 hrs. on the 16th August.

HYDROGRAPHY

Temperatures and salinity samples were taken at all stations and oxygen, phosphate and pH determinations made at many of them. Surface temperatures were highest at the stations east of 4°E where they ranged from/

from 16°C-17.7°C. West of this longitude surface temperatures were from 12.5°C to 15°C with, in general, the lower values being recorded at the more westerly and northerly stations. A temperature discontinuity of more than 1.5°C within a 10 metre stratum was in evidence at all stations east of 1°W and east of the prime meridian thermoclines of over 3°C were common. The sharpest thermocline - 7.2°C within 10 metres - occurred at a station in the vicinity of Ling Bank. In general the sharpest thermocline was situated between 20 and 30 metres, but in the Fladen region it was situated in the 30-40 metre stratum. The region of sharpest thermocline coincided with that of a much diminished free phosphate concentration between the surface and forty metres. At the inshore stations temperature and phosphate conditions were more uniform with depth. Dissolved oxygen conditions varied widely but require a more detailed examination before any conclusions can be drawn.

During the cruise an examination of pH values was made using a "Doran" pH meter, model 4985. This was more in the nature of a trial of the instrument which behaved fairly satisfactorily under sea-going conditions but took rather a long time to "warm-up" and "settle down" to a constant balance point.

PLANKTON.

In general the 1 m. silk collection were notably richer and with a predominant non-crustaceous constitution west of the prime meridian while east of it the collections were of much smaller volume with *Calanus* the dominant organism. *Pleurobrachia* was a noteworthy constituent of many of the former collections. It occurred in great numbers at several of the stations off the east Scottish coast west of 1°W but did not seem to extend east of this. *Cosmetira* and *Eeroe* also occurred in considerable numbers at several of the stations in this area north of the latitude of Aberdeen but only in very small numbers south of this latitude. Numerous specimens of *Salpa fusiformis* were taken at/

at three stations east of Orkney. A cursory examination of the collections has revealed the presence of herring larvae at only one station - in B17d - and there only in small numbers. Lemon sole larvae however were widespread and in considerable abundance. No phyto-plankton crop of any density was encountered during the cruise.

TRAWLING

The largest catches of haddock, numerically, were taken at those stations in the Moray Firth, and east of Orkney regions. The great majority of these however were one and two year old fish. Larger fish were an important constituent of the haddock catches in statistical squares L13, B12 and C12. O group haddock were present at most of the east Scottish coast stations but only occurred in any numbers in the region of the Bell Rock and on Montrose Bank. These ranged in size from seven to twelve centimetres.

Whiting were taken in greatest numbers east of Orkney, on the Dogger Bank, at May Island and in the Dog Hole. O group whiting showed a similar distribution to that of O group haddock. Small numbers of Hake were taken at the Moray Firth trawl stations. Lemon sole and Plaice occurred in greatest numbers in the Bell Rock, Montrose Bank area. Considerable catches of small herring were made at St. Abbs Head and May Island. Samples of these were retained for racial analysis in the laboratory.

Alan Saville.
18th August, 1950

CIRCULATION

Mr. W. Russell.	Mr. R.S.Wimpenny.	Mr. K.M.Rae.
Capt. C.H. Champness.	M. P.Desbrosses.	Dr. G.Reay.
Mr. M. Graham.	Dr. B.Havinga.	Capt. E.A.Bruce.
Dr. C.E.Lucas.	Dr. A.R.Molander.	Mr. A.Saville.
Dr. J.N.Carruthers.	Dr. H.Thomsen.	Dr. R.Johnston
Dr. H.Blegvad.	Prof. Gilis.	Mr. J.Sinclair.
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