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CRUISE REPORT

F.R.V. "SCOTIA"

7th-24th November 1956

Object: To survey and follow a patch of herring larvae.

The cruise was divided into two parts with a call at Aberdeen in between for water, stores and crew changes. During the first part (7th-16th) the weather was mostly favourable after a stormy start, but the second part only produced $2\frac{1}{2}$ days actual sea work. The opportunity was taken while sheltering in the Firth of Forth to visit Grangemouth for fuel oil for the next trip. Work was abandoned at $56^{\circ}27'N$ $0^{\circ}45'W$ on Saturday morning (24th) when conditions were unsuitable and a passage made to Aberdeen in very rough weather. "Scotia" docked at 19.30 hrs. 24.11.56. Gale force winds continued during 25th and 26th so that further work was out of the question.

Results:

The main concentration of herring larvae ^{was} within the limits $56^{\circ}37\frac{1}{2}'N$, $55^{\circ}57\frac{1}{2}'N$, $1^{\circ}58'W$ and $1^{\circ}04'W$ with a bulge towards the east beyond $56^{\circ}17\frac{1}{2}'N$ $0^{\circ}45'W$ and $56^{\circ}07\frac{1}{2}'N$ $0^{\circ}45'W$. Larval hauls made in darkness appeared to give better catches. Stations repeated after one to three days sometimes showed considerable variation in the catch of herring larvae.

The general plankton was a mixture of Sagitta elegans, Pleurobrachia, Siphonophores, Euphausiids and Calanus and collections were large. Calanus was more plentiful in the northern part; some dense collections of Sagitta were taken in the south. Pleurobrachia was more abundant towards the coast.

Temperature:

Continuous temperature records were obtained from the near-surface thermograph. North of $56^{\circ}00'N$ temperatures were generally above $10.0^{\circ}C$ and $9.5-10.0^{\circ}$ south of this line. The warmer water, chiefly $10.2^{\circ}-10.6^{\circ}$ was traversed by a 20 mile broad band of colder water ($10.0-10.2^{\circ}$) approximately between $56^{\circ}30'N$ $1^{\circ}45'W$ (south western limit) and $56^{\circ}57\frac{1}{2}'N$ $0^{\circ}50'W$ (limit of survey). Thermal discontinuities at the surface were very gradual except at the mouth of the Firth of Forth (ca 0.4°) and thence towards St. Abb's Head where the coldest water was encountered, also at $55^{\circ}57\frac{1}{2}'N$ $1^{\circ}30'W$ and $0^{\circ}50'W$ where some southward penetration of warmer water was evident.

Drift Indicators:

50 drift indicators were liberated on 9.11.56 along an eight mile long west to east course centred at $56^{\circ}37\frac{1}{2}'N$ $1^{\circ}22'W$. On 13.11.56 a search made in bright weather but with a choppy sea, produced four indicators. Two with five fathoms of rope which had been launched consecutively were found close together some few miles ENE of their original position. The other two were adjacent indicators fitted with 15 fathoms of nylon rope and again found close together this time a few miles E or ESE of the original spot. M.V. "Semnos II" has returned one rope and one nylon drifter also from a few miles east of the launching site.

Echosounding:

The recording camera was successfully employed to photograph cathode ray tube flashes on the "Kingfisher" echosounder. These are being examined in relation to simultaneous paper traces.

R. JOHNSTON
12th December, 1956

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