Dr. Wood.

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S.16 11 SR 57

CRUISE REPORT

F.R.S. " S C O T I A "

21st November - 14th December 1957.

The contractors' visit to the ship on the 21st November and bad weather on the 22nd, delayed "Scotia's" departure from Aberdeen till the 23rd November 1957. In the nine days that "Scotia" thereafter remained at sea, all but 8 of the stations in the grid had been completed before docking on the 1st December at Leith for water, which had by now become critically low. Heavy seas were twice encountered during the period at sea, when it was deemed prudent not to use the High Speed Sampler.

"Scotia" left Leith on the 4th December and by the morning of the 6th, the remaining 8 stations of the grid were completed and a second coverage of the same grid begun. On the 6th December, the ridge of high pressure over Britain that had been a dominant feature of the weather up to now, declined rapidly, and a series of depressions that took its place, put an end to further work. On the 7th December "Scotia" sheltered in St. Andrews Bay from a westerly gale. On the 8th, anchorage was shifted to Largo Bay to ride out a northerly gale. With a change of wind to the west on the 9th, "Scotia" returned to St. Andrews Bay. En route to the Bay an attempt was made to work Stn. 27 (off the Firth of Forth), but this was not possible. On the 10th morning in view of a forecast of a S.E. gale (force 8-10) "Scotia" made a passage for Aberdeen, where she docked at 2 p.m. The easterly gale continued to rage on the 11th and 12th December, and with the closing of Aberdeen harbour on the 12th, the cruise virtually came to an end.

Hydrography

The grid of 62 stations sampled in this cruise extended from the latitude of Peterhead to that of the Humber, and from the Scottish east coast to the 2nd/3rd meridians east. It was thus a larger area than that covered in the two previous "Scotia" cruises, but the sampling was less intense.

Surface temperatures ranged from 9.50°C in the north to 10.52°C in the south, except over Dogger Bank where the lowest surface temperature of 8.93°C was observed. Throughout the area vertical uniformity with respect to temperature prevailed. Over Dogger Bank the highest surface oxygen values of 6.4 c.c./l accompanied by the lowest phosphate values of 0.32 μ gm.-at. PO_4 - P/l were recorded. Elsewhere oxygen values were ca. 6.1 c.c./l and those for phosphate between 0.5 and 0.6 units. Phosphate values between 0.6 and 0.7 units were recorded at stations close to the coast.

Plankton

Calanus was most abundant in the northern part of the survey, and very poorly represented in the southern part. Sagitta elegans was also a dominant species in the north while Sagitta setosa was found chiefly in the south and east.

The Euphausid furcilia was very common over the whole area.

Pleurobrachia was present in small numbers at most stations, while Aglantha, though taken in many hauls was not so widespread as Pleurobrachia. One specimen of Tima bairdii was taken in D10b.

The highest numbers of herring larvae occurred in the most northerly line, i.e. in the S. elegans water. Very few larvae were taken in the southern S. setosa water.

Echosounding

Conspicuous among the traces recorded by the M.S. 24 J machine were two good patches, presumably of herring, at 57°N 2°E and at 55°30'N 2°E. The mid-water scattering layer (10 - 20 fms. depth) recorded during the last "Scotia" cruise was not so prominent in the traces taken during this cruise.

R. B. BURNS
30th December, 1957.