

In Confidence: Not to be quoted without
reference to the Laboratory.

CRUISE REPORT

FRS "Scotia"

5 - 10 November 1969

Objectives

1. To lay a current meter mooring 10 miles off the Ythan and to service a mooring at present 1.6 miles from the Ythan.
2. To release parachute drogues adjacent to the mooring and take occasional fixes on them.
3. To carry out a continuous survey of surface temperature, salinity and nitrate.
4. To release rhodamine B dye for advection and dispersion studies.

Narrative

"Scotia" sailed for the Collieston area during the morning of 6 November and by 1400 had laid the outer current meter buoy with meters at 20 and 50 metres depth and relaid the inshore mooring with the current meter 4 metres from the bottom in 20 metres of water. Parachute drogues were then released at the outer buoy, at depth corresponding to the depths of the current meters. "Scotia" anchored in Aberdeen Bay that night whilst preparations were made for the dye release at dawn on the 7th. Shortly after the release however, weather conditions deteriorated rapidly and "Scotia" was forced to dodge in Aberdeen Bay throughout the remainder of that day. On the morning of the 8th, "Scotia" put into Aberdeen because of the very severe weather conditions forecasted and sailing time was fixed for noon on the 9th. However just as she was about to cast off it came to light that one of the engine room staff had taken ill and sailing had to be cancelled. At this stage the remainder of the trip was cancelled.

Results

Current measurements

The first set of results from the permanent mooring position 1.6 miles off the Ythan appear in good condition in spite of the propellor bearings of the current meter becoming worn. After replacing the bearings the same meter was moored again at this position. The second ran from 15 September to 6 November, a total of 7,312 measurements of current speed and direction.

Continuous Measurement Surveys

The Autoanalyser and thermosalinograph functioned continuously whilst at sea. The autoanalyser measured nitrate only. Nitrate levels were as expected; 3.9 μg at/l at the outer buoy rising to 4.5 μg at/l at the inshore buoy station and along the coast to Aberdeen Bay. Temperature and salinity distribution was much smoother than in August but sharp thermal changes still occurred, especially at 7 miles

offshore, where there was a fairly sharp 1-5°C drop in surface temperature, the inshore water being cooler. This drop was also accompanied by a much more gradual drop in salinity.

Dye and drogue measurements

Because of the unforeseen curtailment of the trip no useful measurements were obtained.

H D DOOLY
22 December 1969