

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

CRUISE REPORT

F.R.S. "CLUPEA"

11th March-3rd May 1963

- Objectives:-
- 1) To study the production and subsequent dispersal of Clyde herring larvae.
 - 2) To carry out a limited programme of hydrographic sampling.

Herring Larval Surveys

The first major hatching on Ballantrae Bank appeared to take place between 15th and 18th March, i.e., about 1 week earlier than in 1962. The numbers of newly hatched larvae were relatively small - similar to 1962 or perhaps smaller. During the next 4-5 weeks, the larval concentrations continued to be centred on the Bank itself. There was little evidence of any dispersal taking place in that period, but conditions appeared to change rapidly between 19th and 22nd April. The numbers of larvae on the Bank dropped considerably compared with earlier surveys and larvae were subsequently observed to be widely distributed over most of the survey area in the Clyde estuary, but particularly to the north of Ballantrae Bank, in Kilbrennan Sound and along the Ayrshire coast. The final survey of the Bank was carried out on April 29th when, at a number of stations towards the southern end of the Bank grid, yolk sac larvae were observed, indicating that a further hatching had taken place.

Light-meter Readings

Light-meter readings were taken on Ballantrae Bank on several occasions in the morning and evening - in the periods of darkness to daylight and daylight to darkness - for larval feeding studies which are in progress.

Plankton Indicator Samples

Indicator samples were taken regularly at the four corners of Ballantrae Bank, and in addition samples were also taken at selected stations on grids I and II in the Clyde estuary, for investigations on the standing crop in relation to larval conditions. These samples are being worked up by the S.M.B.A. Oceanographic Laboratory in Edinburgh.

Hydrography

Drift-bottles were released on Ballantrae Bank each time it was surveyed.

Temperature and salinity samples were taken at surface and bottom at stations on grids I and II, during surveys made between 26th March and 2nd April and between 15th and 18th April respectively. On the grid II survey phosphate, nitrate and silicate samples were also collected at the surface.

Temperatures on the grid I survey, which was completed on 2nd April, ranged from 5.5°C to 5.9°C at the surface and 5.2°C to 5.7°C at the bottom. On the second survey, which was completed on 18th April, temperatures were a little higher and ranged from 5.9°C to 6.9°C at the surface and from 5.3°C to 5.9°C at the bottom.

During the passage from the Clyde to the east coast, at the end of the larval surveys, temperature and salinity samples were taken at several depths on selected stations in Loch Ness.

Clupea berthed in Buckie at 1930 hours on 3rd May.

I. G. BAXTER
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8th May, 1963.