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8CR73

CRUISE REPORT

FRS "CLUPEA"

8-24 August, 1973

OBJECTIVES

1. To carry out an echosounder and midwater trawling survey for sprats and young herring in the Moray Firth, adjacent areas of the North Sea, and if time permits the area north-west of Orkney.
2. To carry out a plankton survey for sprat larvae.
3. To investigate diurnal variation in behaviour and feeding of sprats and young herring.

NARRATIVE

The "Clupea" sailed from Aberdeen at 1030 on 8 August, and owing to the need to be back in port on 10 August, carried out a short echo-sounder survey off the Aberdeenshire coast. A brief call was made at Aberdeen at 1930 to land a sick man, and the survey continued until 1145 on 9 August when increasing wind prevented further work.

After removal of the purse seine gear and re-installation of the gantry, "Clupea" sailed again from Aberdeen at 1815 on 14 August and proceeded direct to the Moray Firth to carry out the trawling and plankton survey. Occasional trawl hauls were carried out and the entire Moray Firth was covered by the end of the week. "Clupea" docked in Buckie at 1330 on 17 August.

The "Clupea" sailed from Buckie at 1500 on 20 August and carried out an intensive search to the north-east for "sprat" traces. None were found and the survey was extended further east. After a trawl haul at 1630 on 22 August, the trawl winch control broke down and to occupy the remaining time an echosounder and plankton survey was planned for the area between Aberdeen and the Firth of Forth. After temporary repairs to the winch a further trawl haul was possible on 23 August before docking in Aberdeen at 0900 on 24 August.

Echosounder and midwater trawling survey

In general midwater traces thought to be caused by fish were ~~scarce~~. Light traces were found in a band from 10-20 miles off the south coast of the Moray Firth. Three trawl hauls, first using the "Clupea" midwater trawl and later the young gadoid trawl, through these traces caught 0-group sprats from 4-7.5 cm in length, with a few older fish, and an admixture of 0-group herring 6-8 cm in length. One haul contained 6½ baskets of sprats.

The traces thought to be caused by sprats were in the form of plumes in midwater by day. Since more diffuse traces were found in the same area at night it seems likely that the fish dispersed near the surface then,

though no concentrations were found to investigate diurnal behaviour patterns intensively. In fact, in most areas the traces were too near the surface for trawling.

Trawl hauls carried out further east in the North Sea contained a few 0-group whiting, together with large numbers of coelenterates which were predominantly Cyanea spp. No metamorphosed sprats were caught, but in two hauls east of Aberdeen large numbers of sprat larvae became enmeshed in the codend.

Further indistinct echosounder traces were recorded along the east coast of Scotland between Montrose and Fife Ness. A trawl haul in this area contained large numbers of Aurelia with some very small 0-group sprats 2.5-5 cm in length.

Since traces thought to have been caused by coelenterates were widespread, it is not possible to reach firm conclusions about the distribution of sprats. No heavy concentrations were found, however, and certainly none that would warrant commercial attention.

The survey north-west of Orkney was not carried out owing to shortage of time.

#### Plankton survey

Hauls using a Gulf III plankton sampler were carried out at all the 64 stations on the programme, and an additional 20 stations were sampled further south. The samples were returned to the Laboratory for analysis.

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5 September 1973