Provisional: Not to be quoted without reference to the author

R. V. CORELLA

Report on Cruise 4/1969

Staff: J. W. Talbot
D. J. Ellett
T. C. Doddington
L. Emerson
J. Wooltorton

Duration: 21 February - 5 March

Aims

1. To survey the distribution of plaice ova and larvae in the southern North Sea in order to determine the changes that had taken place since the surveys on CORELLA/CLIONE Cruises 2 and 3/69.

2. To carry out a diffusion experiment using the dye Rhodamine-B in a position about half a mile offshore, the dye to be released about one fathom from the bottom.

Procedure

CORELLA left Lowestoft 1402 hours, 21 February and steamed to position 53°17'N, 03°52'E at the north-west corner of the plankton sampling grid. Sampling commenced at 2235 hours, 21 February and continued until 2035 hours, 23 February when the ship interrupted work to dodge in an easterly gale. At 0925 hours, 24 February work was resumed and continued until 2105 hours, 25 February. Examination of the samples indicated that the south-westerly limit of the plaice larval distribution had then been reached. Shortly before this the ship's radar had broken down, and since CORELLA was at this time close to Ostend it was decided to put in there for repair.

CORELLA docked at Ostend at 1000 hours, 26 February. After this delay it was decided to carry out the remaining work in the North Sea and not proceed down the English Channel as had at one time been considered. On leaving Ostend at 0815 hours, 27 February the ship therefore proceeded to position 51°55½' N, 02°43½'E where a Hydrographic station was worked for water velocity, temperature and salinity from 1539 hours until 2151 hours. This work was to supplement the results obtained from the current meters moored by CLIONE on Cruise 2.

The ship next steamed to position 52°13'N, 1°44½'E four miles off the Suffolk coast at Sizewell. A hydrographic station was worked to measure water velocity using a Direct Reading Current Meter, from 1053 hours until 2348 hours, 28 February, at the position from which it was intended to release Rhodamine the next day. An attempt to release dye at slack water on the morning of 1 March was not successful. On this occasion a fire hose was used for the release and the main difficulty was associated with the pressure needed to force dye down this hose. A second release was attempted at slack water the following morning, this time using P.V.C. hose. This release was made at a depth of one fathom. Difficulty was again experienced in forcing dye down the hose but the release, which was of about 20 gallons of Rhodamine was completed by 1215 hours. For 2½ hours following the release the movement of the dye patch was plotted and surveys of the patch were then carried out from 1451 hours 2 March until 0100 hours 3 March. By daybreak on 3 March fog had reduced visibility to about half a mile and survey work was not possible. Conditions at the norming slack water of 4 March were considered to be unsuitable for a further dye release with the equipment available and CORELLA returned to Lowestoft where she docked at 1045 hours.

/Results .....

Results

A preliminary examination of the plankton samples indicated that most early stage larvae came from an area of about twenty miles diameter. This area was several miles to the north-east of the position of the ova patch sampled earlier from which the larvae had probably developed.

The work with Rhodamine-B showed that it was necessary to give more attention to methods of releasing the dye. The results of the release carried out off Sizewell showed the dye patch to be approximately $1\frac{1}{2}$ miles to the south of its release position after onetidal cycle. It was not clear to what extent the north-easterly wind had contributed to this result.

(J. W. Talbot)
4.3.69.

Seen in draft: C. H. W.

H. W. H.

A. J. L.

Distribution:

Basic list plus the following:

Mr. Talbot
Mr. Ellett
Mr. Doddington
Mr. Emerson
Mr. Wooltorton