

MINISTRY OF AGRICULTURE, FISHERIES AND FOOD
FISHERIES LABORATORY, LOWESTOFT, SUFFOLK, ENGLAND

1971 RESEARCH VESSEL PROGRAMME

REPORT: RV CLIONE: 3a

(PROVISIONAL: Not to be quoted without prior reference to the author)

STAFF

R G Houghton
K M Brander
M R Vince
M W Easey
S Flatman
D Wright (Fleetwood)

LOCALITY

Irish Sea and Bristol Channel

DURATION

Left Lowestoft 0030 hours 2 March

Arrived Lowestoft 1330 hours 18 March

All times are British Standard Time

AIMS

1. To determine the extent and size of the cod spawning grounds in the Bristol Channel and N.W. Irish Sea.
2. To tag cod on their spawning grounds.
3. To obtain blood samples, length-age measurements and fecundity estimates from the Bristol Channel and N.W. Irish Sea spawning stocks.
4. To determine the 'feeding overlap' between mature individuals of several commercially important species caught in single trawl hauls.
5. To collect length-age data on flatfish.
6. To release sea-bed drifters off Start Point in order to determine the residual current flow associated with the local plaice spawning.
7. To collect samples of cod pineal bodies for Mr V Bye.
8. To measure bottom temperatures and salinities in accordance with ICES recommendations.

NARRATIVE

CLIONE sailed from Lowestoft at 0030 hours 2 March and reached the Hurd Deep in the English Channel by 0200 hours 3 March where the flowmeters of the

tin tow net were calibrated and the warp-out/depth relationship was determined. Sea-bed drifters were released at ten stations south of Start Point between 0700 and 1630 hours on the same day.

The tin tow net grid of the Bristol Channel commenced at 2300 hours 3 March and was continued each night between 2200 and 0700 hours where necessary. Fishing began at 0830 hours 4 March off Trevoise with a group of six Belgian double-beam trawlers. Five hauls yielded a quantity of plaice and lemon soles but no cod. On 5 March fishing continued 30-35 naut. mi. WSW Lundy amongst a group of 12 side trawlers (7 Belgian, 1 French and 4 Milford) sighted during the previous night's plankton survey. Thirty-six cod were caught in six one-hour hauls, half of which were tagged.

CLIONE left the Bristol Channel at 2030 hours 5 March and continued a line of tin tow net stations whilst steaming towards the N.W. Irish Sea. Fishing near Lough Carlingford commenced at 1530 hours 6 March in the company of 6 side trawlers (1 French, 1 Irish and 4 Fleetwood). Three short hauls yielded 47 cod. Tin tow net stations continued at night where necessary. A further ten one-hour hauls were made between 7 and 8 March in the same area averaging 45 cod per haul (nearly all in spawning condition), three-quarters of which were tagged. At 1210 hours 8 March CLIONE left the fishing grounds for Dublin and arrived there at 1625 hours. After taking on fresh food and water the vessel left Dublin at 0605 hours 9 March.

Fishing recommenced at 1025 hours 9 March south of Lough Carlingford amongst a group of 25 trawlers fishing a very restricted area (these were mainly Irish but included 1 French and 3 Fleetwood trawlers). Seven hauls averaged 20 cod per haul, two-thirds of which were tagged. The N.W. Irish Sea tin tow net grid was completed that night and CLIONE steamed slowly towards the North Channel to begin fishing there on 10 March. Seven one-hour hauls were made inshore between the coast of Northern Ireland and Beauforts Dyke which produced quite high numbers of immature cod and coley.

The vessel laid to on the night of 10 March and continued fishing from South Rock towards Lough Carlingford the next day. The first four hauls produced only 25 cod but later, off Dundalk Bay, three extremely good hauls of 2 hours duration yielded 325 large spawning cod. All were in excellent condition for tagging but a proportion was used to obtain blood samples. An echo survey of the area commenced at 2310 hours 11 March and was completed by 0630 hours 12 March. Four one and a half hour tows completed the work at Carlingford and CLIONE sailed for Holyhead at 1610 hours 12 March, stopping to take hydrographic observations at six stations on the way.

At 0010 hours 13 March the vessel entered Holyhead harbour to make a crew change and to dispatch blood samples to Lowestoft. Attempts to recover a current meter station were made off Anglesey between 0700 and 1345 hours 13 March; three chain weights were retrieved but no current meters. Attempts were also made to identify a heavy fish trace near the meter position using feathers and tin tow net; a small number of fish eggs were caught in the net which have yet to be identified. The vessel left the area at 1500 hours and arrived off the Smalls at 0100 hours 14 March. The repeat of the Bristol Channel tin tow net grid began immediately and continued each night wherever necessary until 2000 hours 16 March. Fishing took place on 14 March 20 naut. mi. SSW of Lundy with a little success - 34 cod in eight hours fishing. On 15 March, 30 naut. mi. WSW of Lundy only 8 cod were caught in four two-hour tows and the net was badly split. With the weather deteriorating tin tow net stations were postponed until the morning. This had the fortunate effect of allowing the vessel to fish further north with the main

Belgian fleet (12 vessels) on 16 March and a further 33 cod were caught and used for blood samples. A total of 74 of the target of 100 blood samples had been obtained from the Bristol Channel which was thought sufficient. The final five tin tow net stations were completed before leaving Lands End at 2000 hours 16 March. CLIONE docked at Lowestoft at 1330 hours 18 March with all aims completed.

RESULTS

1. A total of 53 tin tow net stations were completed and samples preserved. Twelve stations in the Bristol Channel between 3 and 5 March and 17 from 13-16 March; 17 in the NW Irish Sea from 6-10 March; 7 between the two areas on 6 March. Cod eggs were present in fair numbers in samples taken from off Trevoise and also near Lough Carlingford. Surface temperature and salinity samples were taken at each station.
2. 768 cod were tagged; 15 in the Bristol Channel, 700 off Lough Carlingford and 53 in the North Channel.
3. Blood samples were collected from 96 cod at Lough Carlingford and from 74 in the Bristol Channel. A total of 566 cod were examined (length, sex, maturity, vertebral count and otoliths) and the gut contents of 161 and gonads of 35 females preserved.
4. The gut contents (and length, sex, maturity and otoliths) of 36 coley, 20 haddock, 65 whiting, 29 plaice, 4 pollack, 6 hake and 1 ling were taken.
5. Samples of plaice and lemon soles were measured from the Bristol Channel and the otoliths of 91 plaice and 65 lemon soles were taken.
6. 482 sea-bed drifters were released in batches of ca 50 at 10 stations in the English Channel off Start Point.
7. The brains of 67 cod were preserved for the study of pineal organs by Mr Bye.
8. 13 hydrographic stations were completed in accordance with ICES recommendations.

In addition an echo survey for cod off Lough Carlingford was completed, a sprat sample from the Bristol Channel and a herring sample from the NW Irish Sea were preserved, the gonads of all male rays were examined and shell glands preserved for Mr Holden (3 fish) and the eggs of cod, coley, haddock, hake and whiting were fertilised and reared on the ship (those of coley and whiting to hatching) as a matter of interest.

The basic data are contained in 3 Naturalists Log Books, 3 fish measuring books, 1 tagged fish log and 10 station sheets.

R G Houghton
23.3.71

SEEN IN DRAFT: M R Sutcliffe (Master)

A H Button (Fishing Skipper)

INITIALLED: AJL

DISTRIBUTION: see over

DISTRIBUTION

Basic List
R G Houghton
K M Brander (12 copies)
M R Vince
M W Easey
S Flatman
D Wright (Fleetwood)
D.I. (Fleetwood)
D.I. (Milford Haven)
Mr K Vickers (Ministry of Agriculture, Belfast)
Bord Iascaigh Mhara, Department of Agriculture & Fisheries, (Dublin)

