

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

LIBRARY

1971 RESEARCH VESSEL PROGRAMME

REPORT: RV CLIONE: CRUISE 6

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

PART I

STAFF

R C A Bannister
C L Whiting
T Watson
C Lee (Hong Kong)
R Bennett (Milford Haven)
H Richards (Student)

DURATION

Left Lowestoft at 1030 hours 10 May

Arrived Lowestoft at 1000 hours 25 May

All times are British Standard Time

LOCALITY

North Sea

AIMS

1. To investigate the unity of the North Sea cod stock by tagging cod in the so called boundary areas indicated by previous tagging experiments;
2. To continue the series of plaice and dab trawl surveys to investigate the microstructure of these populations;
3. To continue studies on the feeding chronology of plaice and dab;
4. To carry out selected observations of the distribution of benthos using the underwater camera, underwater TV and the Smith McIntyre grab;
5. To collect and deep freeze plaice for laboratory analysis of body chemistry (Mr Birkett);
6. To bring back live turbot for Dr A Jones and live plaice for Dr Greer Walker.

NARRATIVE

PART I

CLIONE left Lowestoft at 1030 hours 10 May and proceeded towards the area south west of the Dogger for cod tagging work. The ship reached a position near Markhams Hole at 1900 hours and conducted an echo survey to the north and west during that night. Some pelagic trace, probably sprat, was recorded and some

traces of likely gadoid origin occurred in the vicinity of the Hole, where fishing operations began at 0630 hours, 11 May, and where cod tagging and routine plaice and dab sampling were initiated. Although the sprag cod had clearly withdrawn from this part of the North Sea, hourly hauls yielded steady catches of two or three baskets of immature codling and throughout 10, 11 and 12 May these fish were tagged in small batches at stations up to 30 miles apart in order to give some information on the recruitment of these fish to the adult cod population of the central North Sea. This work follows up the recent analysis of cod tagging experiments by the ICES North Sea Roundfish Working Group. During this time the ship traversed the SW Spit, the Hill, the Southern most Rough, and Brucey's Garden and had reached the North West Rough by the evening of 13 May. CLIONE then moved east and north to study the more prolific plaice and dab grounds, trawling east of the Middle Rough on 14 May, west of the Outer Rough on 15 May, when the major tagging effort ceased, and on the Inner Shoal and Outer Shoal on 16 May. Hauls on the edge of the Inner shoal yielded up to 20 baskets of the Flustra 'weed' which infests these northerly banks in summer, and in view of the danger of carrying gear away on grounds which would also be catchy, it was decided to avoid the Klondyke and East Bank areas and to work south but east to the Coffee Soil during 17 and 18 May. During this time, trawl hauls were supplemented by selective use of the underwater camera and the Petersen Grab. The underwater television equipment was rigged and used during the afternoon and evening of 18 May.

At 1900 hours, 18 May, CLIONE left the Coffee Soil and steamed east to arrive in Esbjerg at 0800 hours 19 May to take on fresh water and to pick up a stranded current meter buoy. CLIONE resumed trawling on the Tail End ground at 0630 hours, 20 May to make six consecutive hauls to investigate sampling variability. That evening the ship turned back to the Coffee Soil for night work but at the first station a hand injury to one of the scientists whilst preparing the Smith McIntyre grab for use necessitated a return to Esbjerg for medical attention. CLIONE entered Esbjerg at 0730 hours 21 May, but was able to clear away again at 1300 hours. Resuming operations at 0630 hours 22 May, CLIONE worked west along the south edge of the Dogger from the Tail End to the Cleaver Bank where, after two morning hauls on 23 May, a heavy swell forced the ship south to the Mud Hole. The Cleaver Bank was fished again on 24 May but very heavy weather again prevented the proposed use of the Grab, camera and the underwater TV and CLIONE withdrew southward to work at the Tea Kettle Hole before terminating this part of the cruise at 2200 hours, 24 May. In addition to plaice and dab sampling, small numbers of cod were tagged in this area, and the collection of live fish was completed. CLIONE docked at Lowestoft at 1000 hours, 25 May to exchange staff and load current meter equipment for PART II.

RESULTS

1. Large sprags had withdrawn from the trawl grounds visited during this cruise but a total of 672 codling, the majority in the size range 25-40 cm, were released in the west Dogger area. This should be a valuable experiment. A total of 60 spurdogs was liberated at the NW Rough.
2. Plaice and dabs were distributed as expected for the time of year, the highest catches occurring at the Coffee Soil (dab), Middle Rough and Tea Kettle Hole (plaice). Chat plaice were plentiful on the east Dogger grounds though the overall impression was of rather slack fishing. Otoliths were collected from 800 dabs and 1,600 plaice.

3. The intensity of feeding of dab and plaice was recorded on a percentage fullness basis, and stomach contents preserved for identification. Both species were feeding on a narrower range of food types than in the autumn for example. Plaice were mainly recovering spents feeding heavily and observations suggest that there are three main periods of intake every 24 hours.

4. Difficulties were experienced with the Smith McIntyre grab when the priming mechanism first failed to hold and then failed to trip satisfactorily. In the end, samples were collected with the Peterson Grab. These confirmed how valueless this instrument is for quantitative work. Underwater television was used on one occasion with some success. Although the camera frame tended to bottom as the ship rolled, and hence stirred up mud, intermittent but clear shots of Ophiuroids, worm burrows and hydroids were obtained until a fault developed in the monitor.

5. 100 plaice were deep frozen for chemical analysis by Mr Birkett.

6. A number of live plaice were returned for the acoustic tag programme (Dr Greer Walker), and one female and four male turbot for the hatchery (Dr A Jones).

7. This year '1'-group whiting, cod and to a lesser extent haddock were widely distributed in moderate numbers over the grounds to the west, north and east of the Dogger, where mixed catches of these species and of dabs ranged from one to five baskets per hour and a half tow. Cod-end catches of lemon soles were everywhere higher than in previous years.

8. Fleets of Danish sand eelers were encountered near the Well Bank and on the Horn Reef.

9. Bottom temperature and salinity samples were collected by Nansen water bottle at each ground throughout the cruise.

R C A Bannister

PART II

STAFF

G C Baxter
T C Doddington

DURATION

Left Lowestoft 1020 hours 26 May
Arrived Lowestoft 1145 hours 28 May
All times are British Standard Time

LOCALITY

North Sea