Indexed AR

RG

dk

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

1986 RESEARCH VESSEL PROGRAMME

REPORT: RV CLIONE : CRUISE 9

STAFF:

S Flatman
C N Humphreys
W A Dawson
S Warnes (part A only)
J M Elson
Dr P Dare (part B only)
D Key (" " ")

DURATION:

part A: Left Lowestoft 1340 h, 14 July
Arrived Falmouth 0915 h, 24 July
part B: Left Falmouth 0800 h, 25 July
Arrived Lowestoft 0335 h, 30 July

(All times are Greenwich Mean Time)

LOCALITY:

A: Celtic Sea
B: Western English Channel

AIMS:

A. 1. To carry out a survey for young pelagic fish.

2. To obtain material for mackerel fecundity studies.

3. To obtain otoliths from a number of species to supplement market sampling information.

B. 1. To estimate the abundance of hydroids and pre-recruit scallops in two sections of the western English Channel.

2. To sample bottom substrates for scallop spat.

3. To collect samples of hydroids and dragonets.

NARRATIVE

Part A.

CLIONE steamed to the southernmost section of the selected survey area and commenced work with the modified Neuston net at 1500 h 16 July in the vicinity of Little Sole Bank. During the period 16-20 July the ship worked positions around Little Sole, Great Sole, Cockburn and West Banks.

Portuguese High Headline trawl hauls were made during daylight, and Neuston net stations took place mainly between dusk and dawn.

On 20 July the trawls and doors were smoothly exchanged and CLIONE commenced fishing with the 800 Engels midwater trawl. During 21-23 July a depth-stratified grid of Engels stations was carried out between West, Labadie, Cockburn and Jones Banks. The Neuston net was again deployed mainly at night, although some daylight tows were made for comparison.

CLIONE completed the last tow at 1900 h, 23 July, steamed to Falmouth and docked at 0915 h, 24 July.

Part B.

During 25-26 July, CLIONE worked in Falmouth Bay (Manacles to Dodman Point) and offshore to 18 miles ESE of The Lizard. A series of 15 minute tows was made with the 3 m beam trawl (6 hauls), epibenthos sledge (2 hauls) and 3 Newhaven scallop dredges with fine mesh (2 hauls), in order to locate suitable areas for deployment of the CCTV/35 mm cameras sledge, to collect hydroids and dragonets, and to sample the substrates for scallop spat. The cameras sledge was deployed twice successfully in this area. CLIONE then steamed overnight to the Start Point grounds.

27-28 July, operations were resumed at a station 24 miles SE of Start Point where the cameras sledge was towed after initial reconnaissance with the beam trawl. A series of stations - 5 beam trawl and 3 epibenthos sledge hauls - was then worked northwards until 9 miles E of Torbay, and a fourth tow with the cameras sledge was made. The last haul was made at 1845 h on 28 July.

En route home, CLIONE diverted through the Solent where D Key was disembarked onto Southern SFC patrol vessel 'Southern Trident' off Cowes, at 0545 h on 29 July, in order to begin an oyster larval survey.

RESULTS:

Part A.

Aim 1.

(i) Neuston Net

30 surface hauls were successfully carried out, 19 of which were in darkness. Each tow was of 15 minutes duration. All fish species were picked out, identified initially and preserved. Only one young mackerel (28 mm) was caught, at a position on the Great Sole Bank. Mackerel larvae ranging from 5-20 mm in length were taken in varying quantities: the most productive hauls being those on the SW edge of Labadie Bank, Great Sole Bank and Little Sole Bank (Text table).

Pilchard larvae were taken in quantity on Little Sole Bank and north of Cockburn Bank. Turbot larvae were spread throughout the survey area in small numbers. Scad appeared at three stations only, and hake at one.

The table shows the total numbers of larvae of the main species caught; and location, time and numbers per 15 minute tow of the main surface concentrations.

Species	Total	Main concentrations					
		Location	2100	2300	0100	0200	0400
Mackerel	1087	S W Labadie		497	108		
		Great Sole		143	24		
		Little Sole		137	2		
Scad	12						
		Great Sole		3		5	
		Little Sole		4			
Pilchard	726						
		Little Sole	179	60	168		
		N Cockburn		102			
Turbot	35						
		SW Labadie		4			
		Great Sole					5
		N Cockburn			4		
Hake	1						
		NW Great Sole					1

The modification of the Neuston net - to include two deflector plates - proved to be a distinct improvement over the standard design. The ship was able to steam in a much larger circle and therefore avoid the disturbed water from its wake. Although towing the net in a straight line still resulted in the net holding against the ship's side, it was felt that with a little more deflection it could be successfully towed in this manner.

(ii) 800 Engels

12 tows were completed, stratified into depth zones of 15-20, 35-40, 55-60 and 75-80 m and distributed amongst four time periods during the day. Two tows were of 60 minutes duration, the remainder of 30 minutes.

One 60 minute tow on the south west edge of the Labadie Bank yielded 24.65 kg of mackerel, and in contrast 6 tows were completely devoid of finfish. Totals for all 12 hauls are given below:

'0' group fish:

3 haddock
1 whiting

'1+' group fish:

0.25 kg herring
0.05 kg Norway pout
2.27 kg scad
25.98 kg mackerel

Aim 2.

Of the mackerel caught, only 4 were at maturity stage 7 and therefore suitable for fecundity studies. These were preserved.

Aim 3.

12 Portuguese trawl hauls, each of 60 minutes duration, were carried out in positions around Little Sole, Great Sole and West Banks.

The most abundant species were:
Scad (total 1647 kg), blue whiting (360 kg),
saithe (289 kg), hake (141 kg) and Norway pout (125 kg).

The most notable feature of these tows was the abundance of small blue whiting (9-14 cm range). One tow on the Great Sole Bank produced 68.5 kg of this size group.

Weather conditions throughout this part of the cruise were good, in fact all stations were completed in wind speeds of less than 20 knots.

All fish species were identified, weighed and measured and the data entered into the cruise database using the Groundfish survey (GFS) software. Data input using this suite of programs was trouble-free, although a minor output problem of program/printer communication was encountered and resolved. All station log details and catch details in the database have been validated.

362 pairs of otoliths were collected (see table). In addition, eyeballs from scad, hake and anglerfish were frozen for use in age determination validation. Hake otoliths were stored in different liquids (alcohol, water and saline solution) for ring structure clarification studies.

Subsidiary Aims.

A selection of fish species was frozen for the fish identification course at Lowestoft.

Blood plasma samples from red sea bream, common dragonet, grey mullet and red gurnard were collected for Dr Jamieson.

Samples of small gadoids were frozen for Dr P Bromley for use in gastric evacuation studies.

Samples of vertebrae from 8 blue sharks, plus 1 entire blue shark, were frozen for studies at the University of East Anglia.

2m Ring net hauls of 5-15 min duration were completed. Plankton samples were preserved for later identification of species caught.

S Flatman
(Scientist in charge part A)
7 August 1986

Part B.

Aim 1.

The sledge with CCTV and 35 mm camera was deployed at 4 stations and was towed for 11 and three-quarter hours in total at depths of 63-73 m, and sometimes in a 5 ft swell with winds SW 4-5. All tows were video-recorded and about 375 m^2 of seabed photographed in colour. Quality of TV image was generally just adequate due to continuing poor illumination; visibility was at times poor through turbidity from silt and once from phytoplankton. Problems with twisting of the TV umbilical during shooting and recovery were overcome successfully. However, the only deployment point on the ship (via molgogger) tended to strain the umbilical and also made it difficult to control sledge speed and direction on the seabed.

TV showed hydroids to be present at all 4 stations, and especially plentiful on the grounds E-SE of Start Point. Densities will be determined by later analysis of 35 mm photographs. A few adult queens, but no scallops, were observed; predatory starfish and crabs were generally uncommon. Fish were seen frequently off Start Point.

Aim 2.

The 7 tows with the epibenthos sledge produced small numbers of live bivalve spat of various burrowing species, but no scallop or queen spat were found either in this gear or in beam trawl and scallop dredge substrate samples.

Aim 3.

Large collections of hydroids were preserved for identification and extraction of scallop and queen spat in the laboratory. Hydroids were taken on all beam trawl tows, and in considerable quantities off Start Point. Spat of queens were readily visible attached to various hydroid species and sometimes in good numbers, but no scallop spat were visible on cursory inspection.

Dragonets (Callionymus spp.) were taken in most beam trawl tows. The stomach contents of 128 specimens were examined. Most fish were feeding on crustaceans, ophiuroid starfish and polychaetes, but 12 fish contained 4-5 mm spat of queens, 1 contained a spat of Similipecten, and 6 others had eaten other bivalve spat.

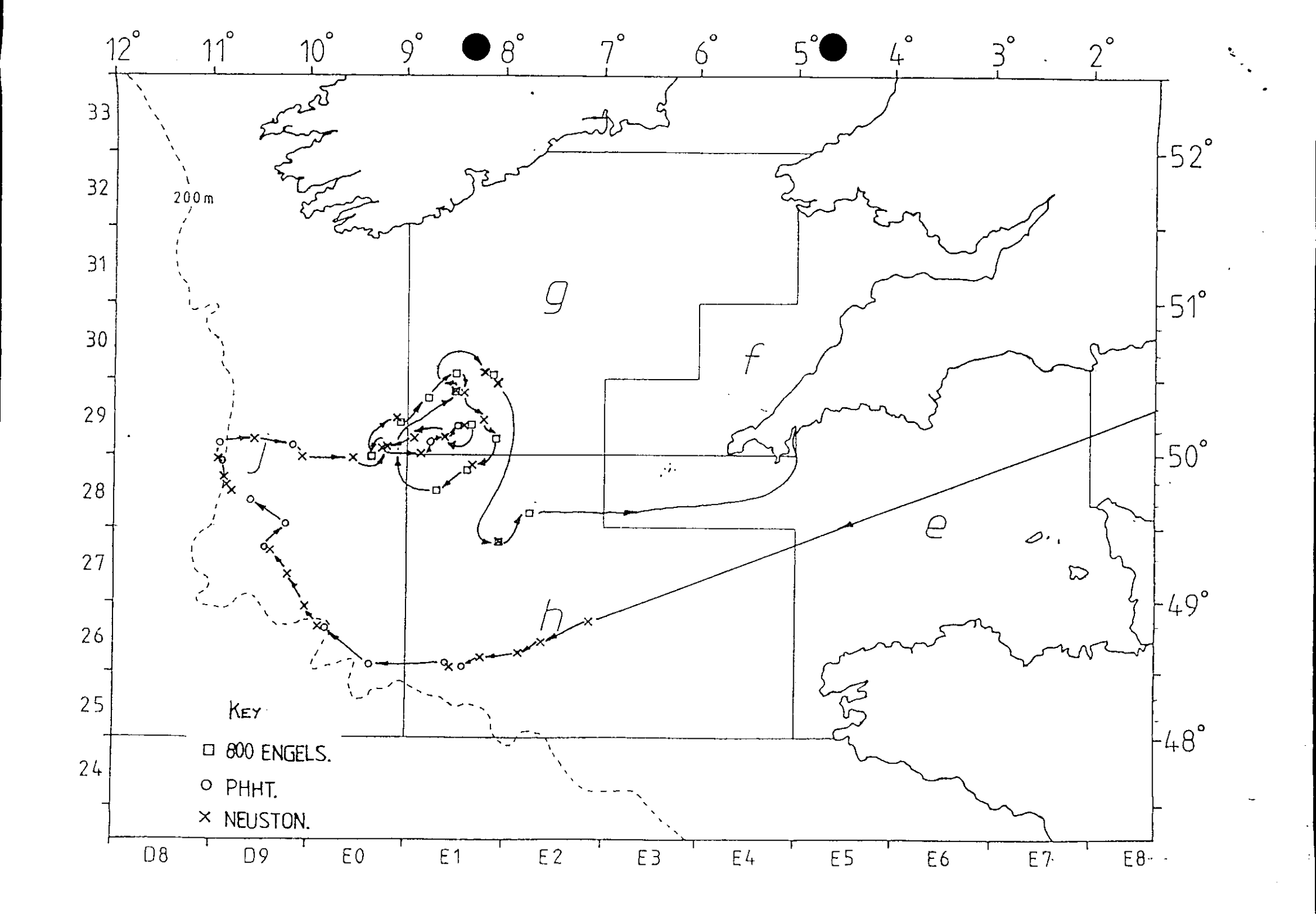
P J Dare
(SIC, part B)
7 August 1986

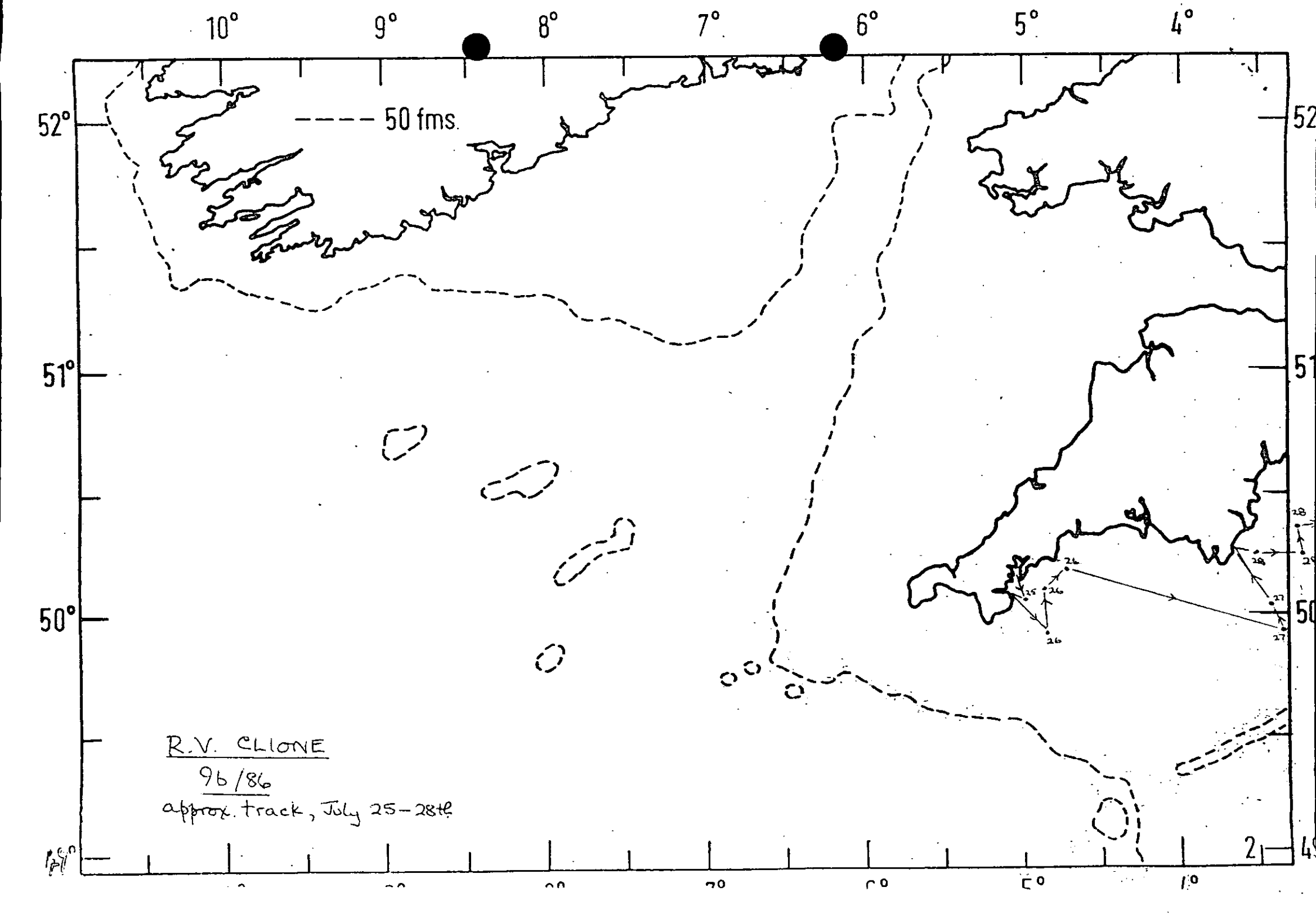
SEEN IN DRAFT:
J R F
P M

INITIALLED:
D J G

DISTRIBUTION:

Basic List+
S Flatman
C N Humphreys
W A Dawson
S Warnes
J M Elson
Dr P Dare
D Key


12° 11° 10° 9° 8° 7° 6° 5° 4° 3° 2°
33 32 31 30 29 28 27 26 25 24
52° 51° 50° 49° 48°
200m
g
f
e
h
j
KEY
800 ENGELS.
PHHT.
NEUSTON.
D8 D9 E0 E1 E2 E3 E4 E5 E6 E7 E8


10°
9°
8°
7°
6°
5°
4°
52°
51°
50°
50 fms.
R.V. CLIONE
96/86
approx. track, July 25–28th

CLIONF 9A/86 SUMMARY OF OTOLITHS COLLECTED

SPECIES	ICES DIVISION				
	VIIG	VIIH	VIIJ	TOTAL	
Megrim	9	13	49	71	Lepidorhombus whiffiagonis
Four spot megrim			1	1	Lepidorhombus boscii
Hake	21	4	54	79	Merluccius merluccius
Anglerfish			2	2	Lophius piscatorius
Cod			2	2	Gadus morhua
Whiting	2		1	3	Merlangius merlangus
Mackerel	60		87	147	Scomber scombrus
Scad		56		56	Trachurus trachurus
Red sea bream			1	1	Pagellus bogaraveo
Total	92	73	197	362	