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1976 RESEARCH VESSEL PROGRAMME

REPORT: R V CIROLANA: CRUISE 3a

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STAFF: S J Lockwood
P O Johnson
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P Chapman (UEA)
G Gray (Commercial observer for Hellyer Bros, BUT, Hull)

DURATION:

Left Grimsby 1730 h 17 February
Arrived Gt Yarmouth 1235 h 4 March

LOCALITY:

Western English Channel, Bay of Biscay, Celtic Sea, Procupine Bank

AIMS:

- 1 To carry out an acoustic survey in the areas listed above.
- 2 To carry out an acoustic survey in the vicinity of the 200 m isobath.
- 3 To identify fish traces by trawling.
- 4 To take plankton samples with a 20" TTN in the Bay of Biscay - Celtic Sea area.
- 5 To tow a continuous plankton recorder in the Bay of Biscay - Celtic Sea area.
- 6 Take a profile of twelve water samples for the analysis of iodine, iodide and iodate.

NARRATIVE:

The staff embarked CIROLANA at 1630 h 17 February and the ship sailed at 1730 h. From then until the ship was secured at Yarmouth at 1235 h 4 March the cruise was blessed by the extraordinary good weather and all aspects of the cruise plan were carried out without the usual breaks or modifications due to poor sea conditions.

The work began with noise checks on the acoustics system in the vicinity of Isle of Wight and the survey commenced off Portland Bill. The survey track covered the usual mackerel survey area off Devon and Cornwall, but in an abbreviated form and lasting two days instead of the usual five days. From Lands End CIROLANA worked south surveying the continental shelf of the Bay of Biscay. CIROLANA reached the southern extremity of the cruise, 20 miles NW of Biarritz, on 24 February and then worked northward along the 200 m isobath as far as 52°N which was reached on 28 February. For the remaining period, 29 February - 2 March, the acoustic survey covered the banks in the central Celtic Sea south of Eire. The acoustic survey was concluded at a position 25 miles NW of the Scilly Isles.

RESULTS:

1 A total survey track of 2,408 miles was completed without any major difficulties being encountered. During the early part of the cruise there were intermittent power failures to the MS 29 transmitter. The breaks in transmission were never long, and they became less frequent with time but the actual fault could not be traced.

Dense mackerel shoals were found off Dodman Point and 12 miles south of the Lizard. The latter shoal was being fished by a fleet of 5 Dutch, 3 Russian, 2 French and 1 Bulgarian vessels. The only other major mackerel concentration was found on a small off-shelf bank due west of Ushant, although mackerel were caught at 14 of 26 stations fished. No mackerel (Scomber scombrus) were caught south of 47°N, but Spanish mackerel (S. colias) were caught south of this line.

The major pelagic fish shoals sampled in the Bay of Biscay were found to be scad (Trachurus trachurus).

The larger species of horse mackerel, T. mediterraneus, was caught beneath the surface scattering layer in southern Biscay. For further details see Table 1.

2 No blue whiting traces were found when surveying water deeper than 200 m but blue whiting occurred in most trawl hauls made near the edge of the shelf. The fish were smallest in the south and increased in size northwards. Of 56 fish otolithed 3 were found to be ripe and running but the majority were immature or maturing (see Table 2).

3 A total of 24 trawl stations were made, 11 with the Granton trawl and 13 with the 1600 Engel. All but one Engel station resulted in fish being caught; the exception was a tow through the surface scattering layer at dusk.

Two shoals were fished with mackerel hand gurdies.

4 No plankton samples were taken as no concentrations of ripe mackrel were found.

5 A continuous plankton recorder was towed over the Biscay shelf area without problems, but during a second tow from Biscay to Eire the silk roll jammed.

6 The profile of water samples for iodine species analysis was taken in 1200m of water in the Bay of Biscay at 45°N 2°50'W. The analysis will be carried out at the School of Environmental studies, University of East Anglia.

7 Prior to sailing the FO, Newlyn requested that CIROLANA should trawl on grounds where large quantities of dead mackerel have been reported in catches. He provided a chart of "clear tows" and recent information on the dead fish catches. A tow was made with the Granton trawl on one of these tows; two dead, partially decomposed mackerel were taken in the catch.

S J Lockwood
10 March 1976

SEEN IN DRAFT: T H F (Master)
G W A (Fishing Skipper)

INITIALED: A J L

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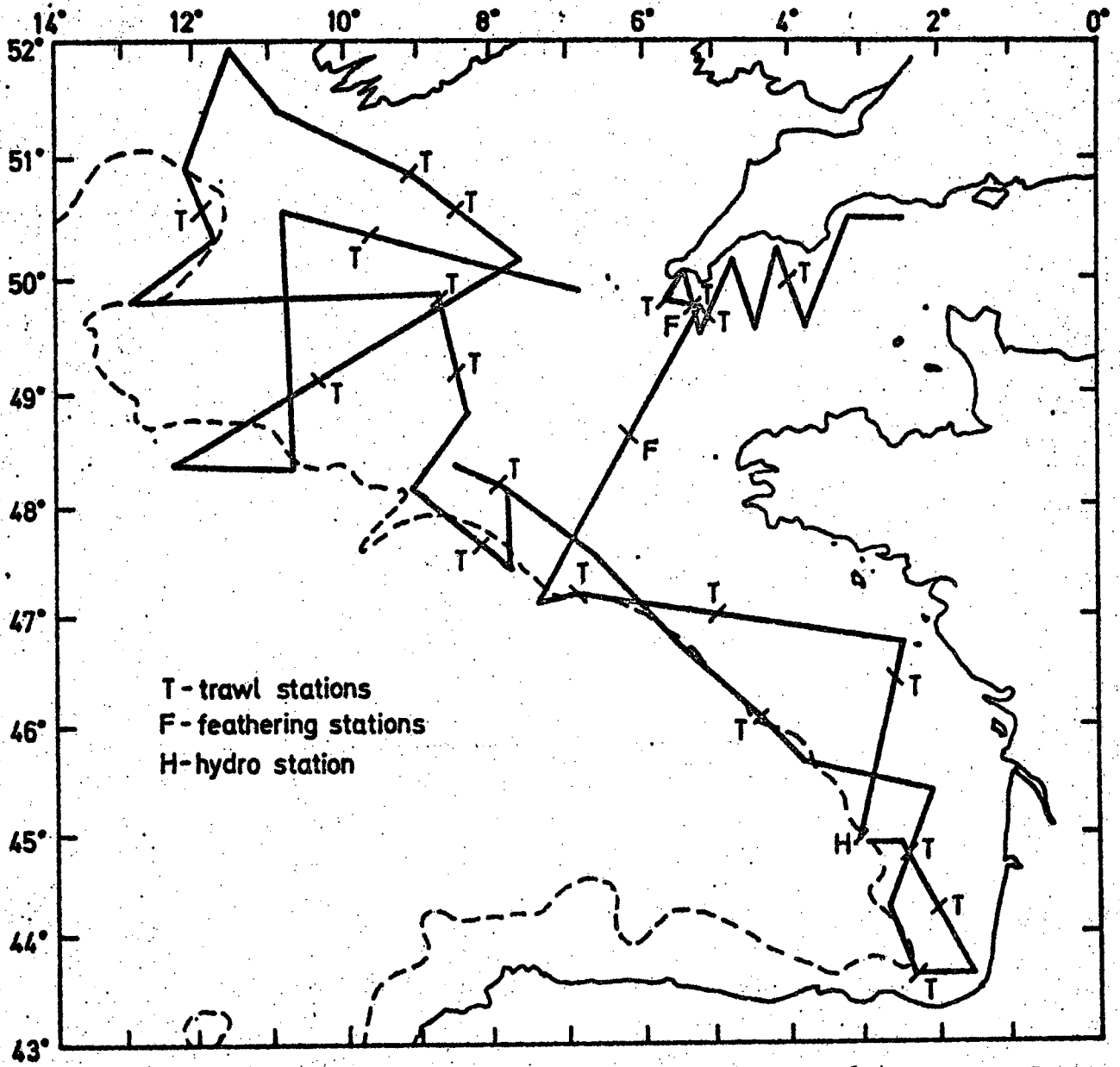


TABLE 1. TRAWLING STATIONS

Date	Stn	Latitude N	Longitude W	Position	Fishing Gear	Pelagic species	Mean Length cm	Remarks
19/2/76	2	50° 08'	04° 15'	SE of Eddystone	1600 Engel	Pilchard Mackerel	25.2 31.5	
20/2	3	49° 43'	05° 07'	S of Lizard	1600 Engel	Mackerel Pilchard	30.5 24.9	
20/2	5	49° 46'	05° 23'	SW of Lizard	Feathers	Mackerel		
20/2	7	49° 49'	05° 45'	SE of Wolf Rock	Granton Trawl	Sprats	14.4	Two (2) dead mackerel and one (1) dead pilchard
21/2	10	47° 35'	07° 10'	Chapelle Bank WSW of Ushant	Granton "	Mackerel Scad Blue whiting	38.9 30.0 22.1	
22/2	11	47° 14'	04° 58'	Mid Biscay	1600 Engel	Mackerel	17.1	All I-group
22/2	12	46° 34'	02° 43'	Mid Biscay	Granton	Scad Sardines Anchovy	10.4 17.3 15.2	" " " " " "
23/2	14	44° 58'	02° 17'	S Biscay	Granton	Blue whiting	20.4	
23/2	15	44° 15'	01° 54'	S Biscay	Granton	Mackerel Scad Blue whiting	17.5 16.6 19.4	Six (6) fish only Tri-modal, 12.3, 22.8, 33.7 cm
24/2	16	43° 42'	01° 55'	S Biscay	1600 Engel	Scad Blue whiting Spanish mackerel	23.0 19.4 47.0	Bi-modal, 12.0, 32.5 cm Predominantly stage I Three (3) fish, 46, 47, 48
24/2	17	45° 20'	02° 07'	Mid Biscay	1600 Engel	Horse mackerel*	51.9	Tow made just below surface scatteri- layer
25/2	18	46° 05'	03° 50'	Mid Biscay	1600 Engel	Scad	30	
25/2	19	46° 03'	03° 57'	Mid Biscay	Granton	Scad	31.6	
26/2	20	48° 24'	07° 04'	Shamrock Knoll	Granton	Mackerel Scad Blue whiting	39.7 30.1 23.9	

TABLE 1 (continued)

Date	Stn	Latitude N	Longitude W	Position	Fishing gear	Pelagic species	Mean length cm	Remarks
26/2	21	47° 55'	07° 54'	SE of L Sole Bank	1600 Engel	None	-	Surface scattering layer
26/2	22	47° 53'	07° 50'	"	Granton	Mackerel Scad Blue whiting	39.6 30.2 22.3	
27/2	23	49° 12'	08° 17'	Melville Bank	Granton	Mackerel Blue whiting	19.9 22.7	I-group mean 17.9 cm
28/2	24	49° 35'	08° 37'	SE of Cockburn Bank	Granton	Hake	17.2	Range 12-28 cm
28/2	25	51° 14'	11° 07'	SW of Hurd Bank	Granton	Mackerel Scad Blue whiting	36.7 38.2 20.9	
29/2	26	50° 41'	08° 58'	W of Labadie Bk	Granton	Mackerel	18.2	All I-group
29/2	27	50° 34'	08° 15'	Labadie Bank	1600 Engel	Mackerel	18.2	All I-group, trace predominantly Crystalagobius
1/3	28	49° 10'	09° 39'	SE of G Sole Bank	1600 Engel	Myctophids	-	
2/3	29	50° 16'		SW of Labadie Bank	1600 Engel	Mackerel	18.0	" " "

TABLE 2 MATURITY STAGES BY SEX BY LENGTH GROUP

MACKEREL

Maturity	I	II	III	IV	V	VI	VIII
Length							
♂							
<30	21.0	47.4	26.3				5.3
<40	-	+	11.5	57.4	30.3	-	-
40+	-	-	2.0	28.0	68.0	2.0	-
ALL ♂	3.8	9.1	12.0	40.4	34.1	+	-
♀							
<30	21.8	60.7	17.5	-	-	-	-
<40	-	1.2	19.6	56.5	21.7	-	1.2
40+	-	-	-	29.8	70.2	-	-
ALL ♀	4.9	14.1	12.7	35.2	32.7	-	+
ALL FISH	4.4	11.6	12.3	37.8	33.4	+	+
	51% males		42% females				

BLUE WHITING

Maturity	0	I	II	III	IV	No of fish
Length						
♂						
<20		50	-	50	-	6
<25		17.4	43.5	39.1	-	23
<30		100	-	-	-	1
ALL ♂		26.7	33.3	40.0		
♀						
<20		100				2
<25		25	25	25	25	8
<30		37.5	37.5	12.5	12.5	8
ALL ♀						
ALL FISH	14.3	38.9	27.8	16.7	16.7	56
	68% males		32% females			