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

1985 RESEARCH VESSEL PROGRAMME

REPORT: RV CIROLANA: CRUISE 10
(PROVISIONAL: NOT TO BE QUOTED WITHOUT PRIOR REFERENCE TO THE AUTHOR)

STAFF

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DURATION: 27 November 19 December

LOCALITY: English Channel, Celtic Sea and Bay of Biscay

AIMS:
1. To carry out a depth stratified trawl survey of the Western Celtic Sea and Bay of Biscay.
2. To sample juvenile fish.
3. To sample pelagic fish shoals.

NARRATIVE:

CIROLANA sailed from Lowestoft at 2100h 27 November, some twelve hours later than planned due to problems with the opening of Lowestoft's bridge. A fast passage was made through the English Channel in good weather and a first fishing position was reached south of the Scillies at 0600h 29 November. The weather deteriorated as the ship worked westwards along the line of 49°30'N and conditions remained generally poor during the first half of the cruise particularly in the north of the survey area. This, together with the fact that entry into the French zone (south of 49°N and east of 10°W) was not permitted until 8 December, set constraints on an orderly geographic completion of the survey. (See Track Chart). Nevertheless only one short period was lost to bad weather.

Deep water trawl stations at the shelf edge, for sections based on latitudes 51°N, 50°30'N, 50°N and 49°30'N, were completed as far as possible between 30 November and 4 December often in indifferent conditions. In improving weather the shallower stations of the Celtic Sea plateau and banks were worked from 5 to 7 December using both the Portuguese High Headline trawl and the young fish beam trawl. During 8 to 13 December three more lines of depth stratified trawl and young fish sampling stations were worked at latitudes 48°30 N 47°30 N and 46°30 N all in good weather which held until the end of the cruise A single 1600 Engels pelagic trawl haul was made at Parsons Bank on 14 December to try to catch mackerel near the surface in daylight. Following this the ship steamed north toward Wolf Rock carrying out an echo search for suitable midwater traces on which to fish None were found throughout this passage across the mouth of the Channel so the ship continued northward at the Wolf through to the Celtic Deeps Here bottom trawling was resumed to complete the main survey as well as Mr Symonds feeding studies survey during the next one and a half days.

Course was set at 1400h 16 December via the English Channel for a final fishing position near the Gabbard light vessel. Here a single 3 hour mid-water tow was made with the 1600 Engels trawl for live migrating plaice on a south

going tide. This was completed at 1503h 18 December and the ship proceeded to Corton Roads to lay before docking at Lowestoft at 0200h 19 December

RESULTS

1 Forty eight valid hauls almost all of one hour duration were made with the Portuguese High Headline trawl. These were distributed throughout the prescribed depth bands along transects at latitudes 51°00'N, 50°30'N, 50 00 N, 49°30'N 49°00'N 48 30 N, 47°30' and 46°30'N. Time, weather and lack of known clear tows combined to prevent complete coverage of all depth bands for all transects. Nevertheless a good cover of the whole survey area was achieved. See Table 1 below.

	>250 m	250-180 m	179-165 m	164-140 m	139-115 m	114-90 m	<90 m
51°00'N	-	2	1	1	3	4	-
50°30'N	-	1	1	-	3	2	
50°00 N	-	1	1	1	2	-	-
49°30 N	1	1	1	1	2	1	-
49°00'N	-	-	-	1	-	-	
48 30'N		-	2	2	1		-
47 30'N	-	-	3	-	1	2	-
46°30'N	-	1	1	1	1	1	1

Table 1 Number of hauls by depth band and transect

The usual procedures of sorting and weighing the total catch and then sampling for length composition were followed at each station. Otoliths were taken and sex and maturity observations made where appropriate All of the data so obtained were computer logged using the groundfish survey package. This worked very well and as well as inputting all data a number of basic outputs were also run including -

Catch records and length compositions for each station
Total catch summaries and length compositions for selected species by depth band (see Figs)
Catch and length composition summaries by ICES Division, Pelagic Sampling Area and Scad Sampling Area, by depth band for selected species

These and further analyses of the data are available on request.

Groundfish generally were very sparse throughout the area but particularly so at the shelf edge in the northern part of the survey. Seventy seven different species of finfish were caught by the Portuguese High Headline with scad the most abundant for the whole area in terms of both numbers and weight. Catches greater than 15 baskets/hour of this species were made on seven occasions the largest being one of 71 baskets. Six of these larger hauls were made south of 48 30'N. The seven most abundant species by both weight and numbers are shown below:

	Species	Weight (kg)	%	Species	Numbers	%
1	Scad	10078.10	60.49	Scad	138201	61.55
2	Spurdog	1575.70	9.46	Boarfish	25975	11 57
3	Poor cod	710.58	4.27	Poor cod	17934	7 99
4	Grey gurnard	599 36	3 60	Blue whiting	14893	6.63
5	Blue whiting	589 15	3 54	Grey gurnard	5110	2.28
6	Boarfish	459.15	2 76	Norway pout	4533	2.02
7	Megrim	378 98	2.27	Mackerel	4109	1.83
	TOTALS	14391.03	86.39		210755	93.87

Mackerel were scarce throughout the area the best single catch being one of only 2½ baskets/hour. No notable catches of '0' group mackerel were made, one patch yielding 1271 fish/hour NW of Cockburn Bank otherwise most of these were found in the southern half of the survey. Distribution of '0' group mackerel is shown in Fig. 2. Notable single haul catches of other species were: spurdogs 25 baskets, gurnard 22, boarfish 10, blue whiting 8 and poor cod 4.

2. The 3 metre beam trawl was used to make 29 hauls usually of 15 minutes duration. Of these 22 were considered valid and 7 invalid. The limited capacity of the only winch available for operating this gear prevented the net being used successfully in depths greater than 160 metres. Nevertheless useful results were obtained on most occasionas when it was used in comparatively shallow waters although difficulty was experienced from time to time in shooting away over the quarter. The net did not always stream properly and undoubtedly on some occasions the trawl fished upside down.

The most commonly occurring fish caught by this gear were megrim, scaldfish, dragonets, gobies, thick back sole, poor cod, gadiculus and occasionally small hake. All fish caught were weighed and measured and these data were logged in the same way as those for the main trawl gear. Similar outputs were obtained and are also available.

3. The 1600 mesh Engels trawl was used on only one occasion, at Parsons Bank. No fish were caught. No suitable pelagic shoals were observed in the mouth of the English Channel where they might have been expected. Although the echo sounder was run continuously throughout the period while the ship was in the survey area and manned for much of this time, very few pelagic shoals of any sort were seen. Those that were, were usually small and close to the bottom and considered unsuitable for the pelagic trawl.

GENERAL

a) Otoliths were collected from both pelagic and demersal species according to stated requirements. Total numbers collected for each species are shown in the tables below.

TABLE 2 PELAGIC FISH OTOLITHS COLLECTED

AREA / SPECIES	CELTIC SEA PELAGIC AREA 7	SOUTHWEST PELAGIC AREA 8	BAY OF BISCAY PELAGIC AREA 10	TOTAL
Mackerel	132	33	144	309
Pilchard	0	0	147	147
Scad	169	193	236	599
TOTAL	301	226	527	1054

TABLE 3 DEMERSAL FISH OTOLITHS COLLECTED

ICES AREA / SPECIES	7E	7F	7G	7H	7J	8	TOTAL
Cod	1	20	15	5	5	--	46
Hake	36	26	37	29	102	65	295
Pollack	--	19	8	--	--	2	29
Whiting	5	3	32	--	1	1	42
Blue whiting	All areas combined						83
Plaice	11	3	9	--	8	--	31
Sole	--	1	5	--	--	2	8
Lemon sole	4	20	6	12	8	1	52
Witch	--	--	10	--	2	--	12

DEMERSAL FISH Contd

SPECIES \ ICES AREA	7E	7F	7G	7H	7J	8	TOTAL
Megrim	--	16	91	120	181	90	498
Angler (2 species)	No	differentiated					160
Ling	-	10	4	2	1	3	20
TOTAL	57	118	217	163	309	164	

NOTE In the case of megrim and anglers fish were collected and frozen whole for further biological study at the laboratory.

b) All mackerel and pilchard otoliths collected during the cruise were mounted in resin and aged Age/length keys and age/length distributions for both species were produced for each pelagic sampling area directly by on board computer using the old ASD suite. Data for 0 and 1' group were subsequently extracted in preparation for the ICES Mackerel Working Group in February 1986

c) Further development of the Ground Fish Survey suite of programmes much with particular relevance to its use for Celtic Sea surveys was carried out during the cruise.

MISCELLANEOUS

1) A 3 hour trawl was made with the 1600 mesh Engels trawl in the Southern Bight for Mr Scholes to try to catch adult plaice migrating on a south going tide. None were caught but the haul yielded 35 40 baskets of herring plus one basket of whiting fifty of which were deep frozen for Dr Mackenzie (Aberdeen).

2. Stomach contents observations were made on 155 fish from 13 species taken during 5 hauls in the Celtic Deep as part of feeding studies there by Mr Symonds.

3 Quantities of fish from 16 species were frozen for the laboratory fish identification course.

4. 30 boxes of small fish from a variety of species, plus crustaceans and cephalopods were collected as fish food for use in Dr Bromley s laboratory based feeding/gastric evacuation studies.

5. Spiral valves were collected and preserved for Dr Rachel Smith National Museum of Wales from tope and an electric ray.

6. Four large berried female crawfish (Pamilurus vulgaris) were caught at one station off the Scillies. These were successfully kept alive for more than a week in the hope of returning some to the laboratory for furtner study. Unfortunately as the result of an accident with the water suplly they died. Two bodies were frozen in case they may be useful for fecundity studies.

B C Bedford
19 December 1985

SEEN IN DRAFT G Sinclair Master
Fishing Skipper R Graham

INITIALLED D G

DISTRIBUTION Basic +
Staff on Cruise (10)

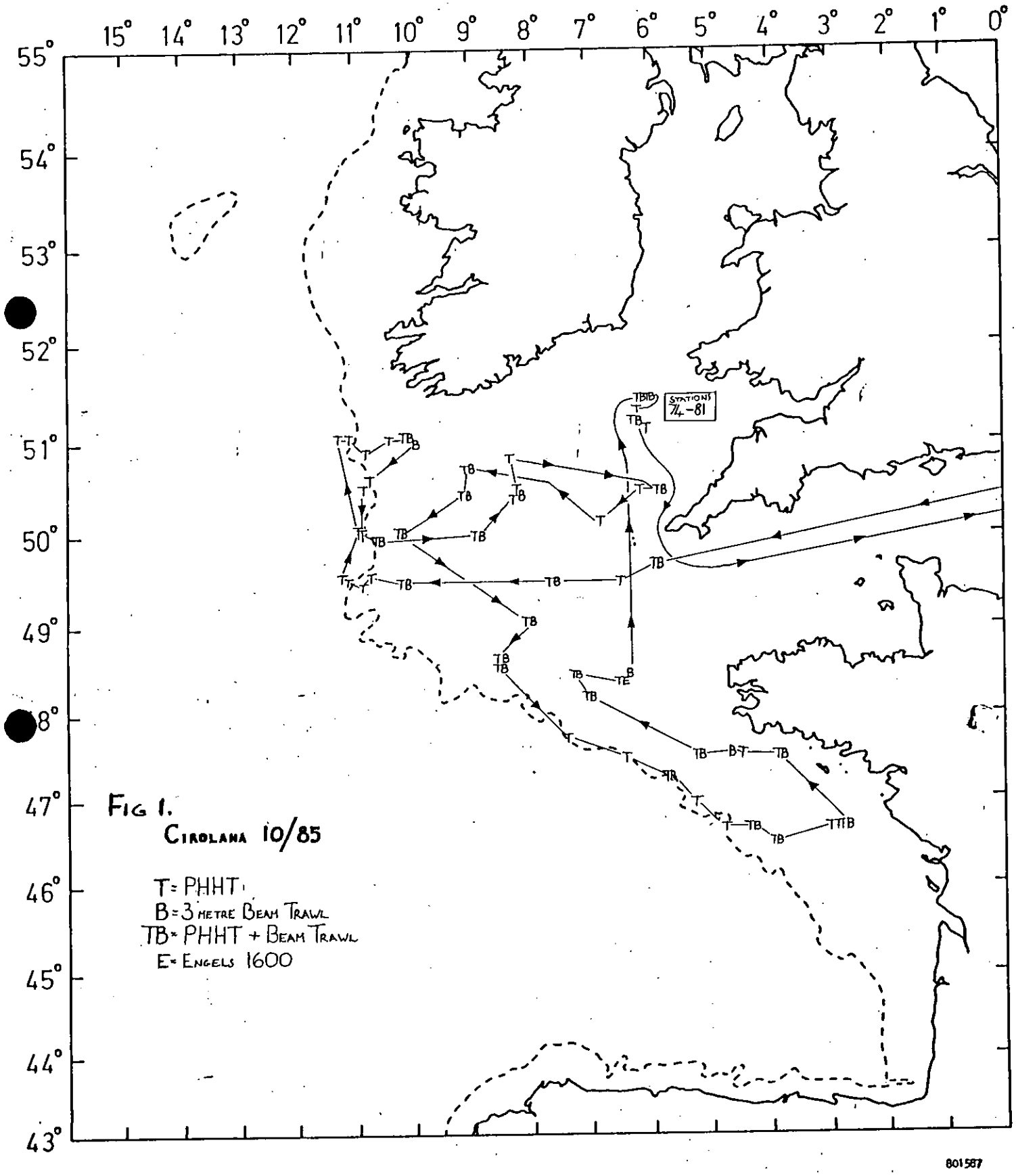


FIG 1.
CIROLANA 10/85

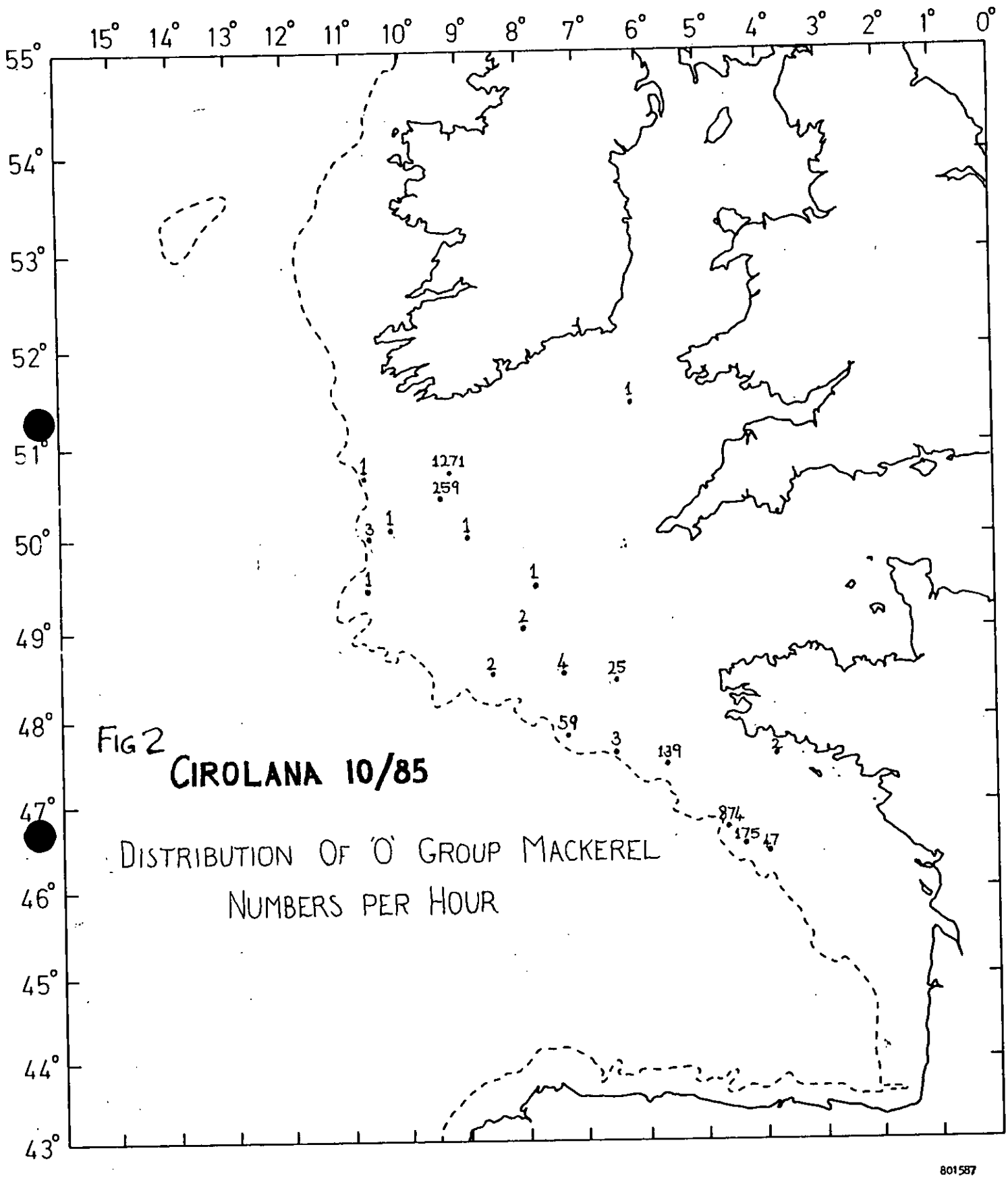


FIG 2

CIROLANA 10/85

DISTRIBUTION OF '0' GROUP MACKEREL

NUMBERS PER HOUR

Fig 3

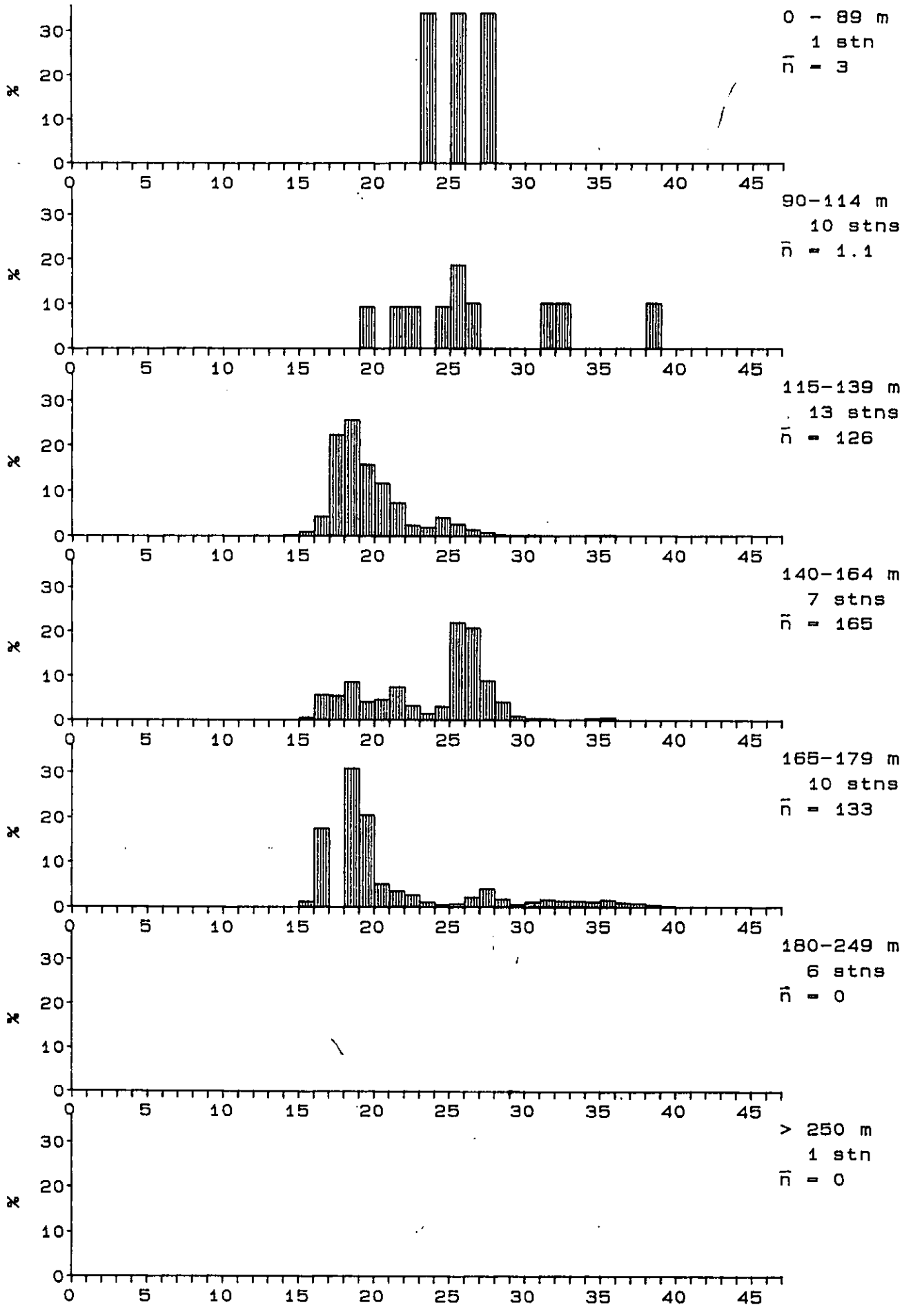
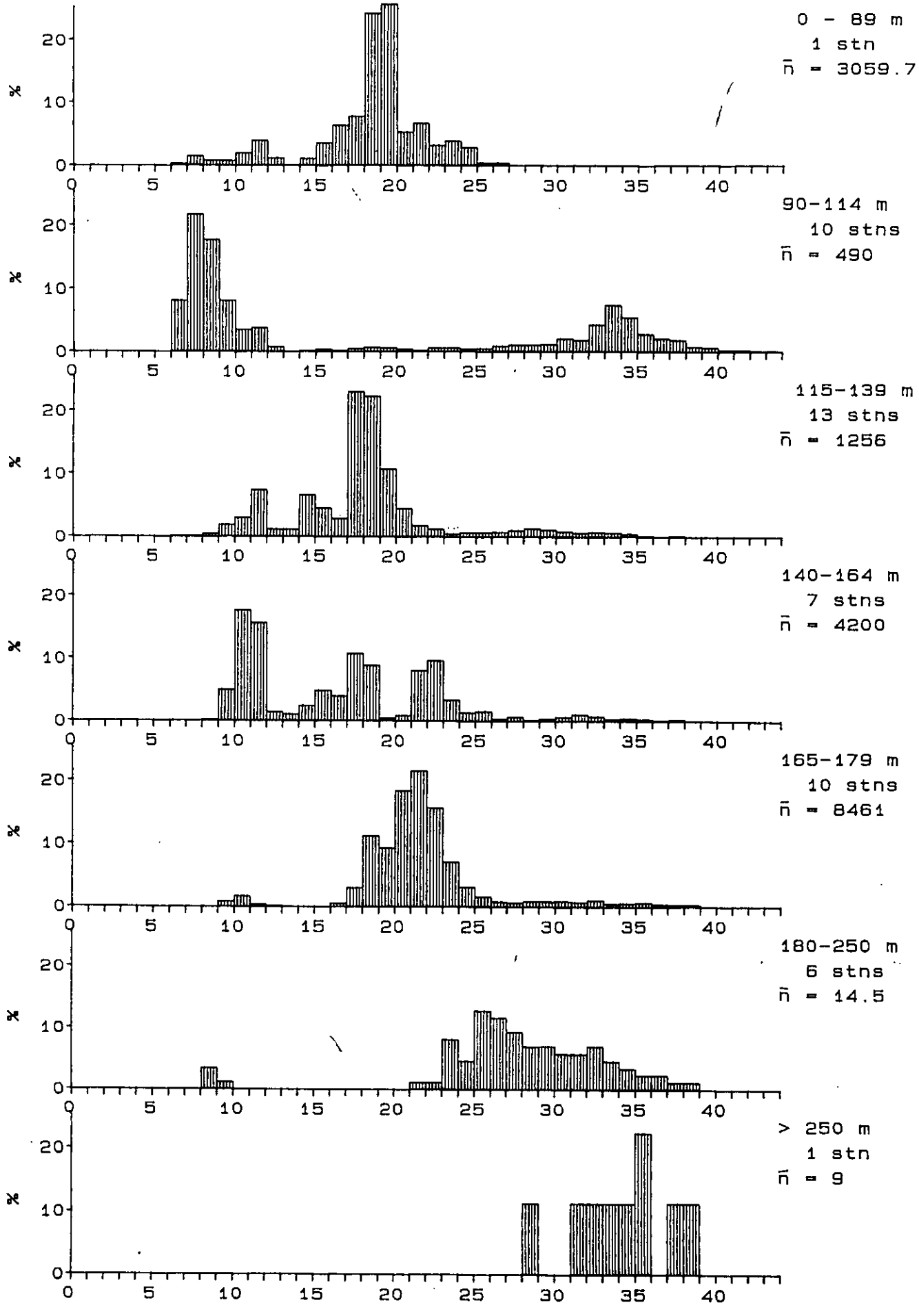

Cirolana 10/85 S. scombrus
0 - 89 m
1 stn
n̄ = 3
90-114 m
10 stns
n̄ = 1.1
115-139 m
13 stns
n̄ = 126
140-164 m
7 stns
n̄ = 165
165-179 m
10 stns
n̄ = 133
180-249 m
6 stns
n̄ = 0
> 250 m
1 stn
n̄ = 0
%
0
10
20
30
0
5
10
15
20
25
30
35
40
45

Fig 4 Cirolana 10/85 T.trachurus



Figs Cirolana 10/85 M. merluccius

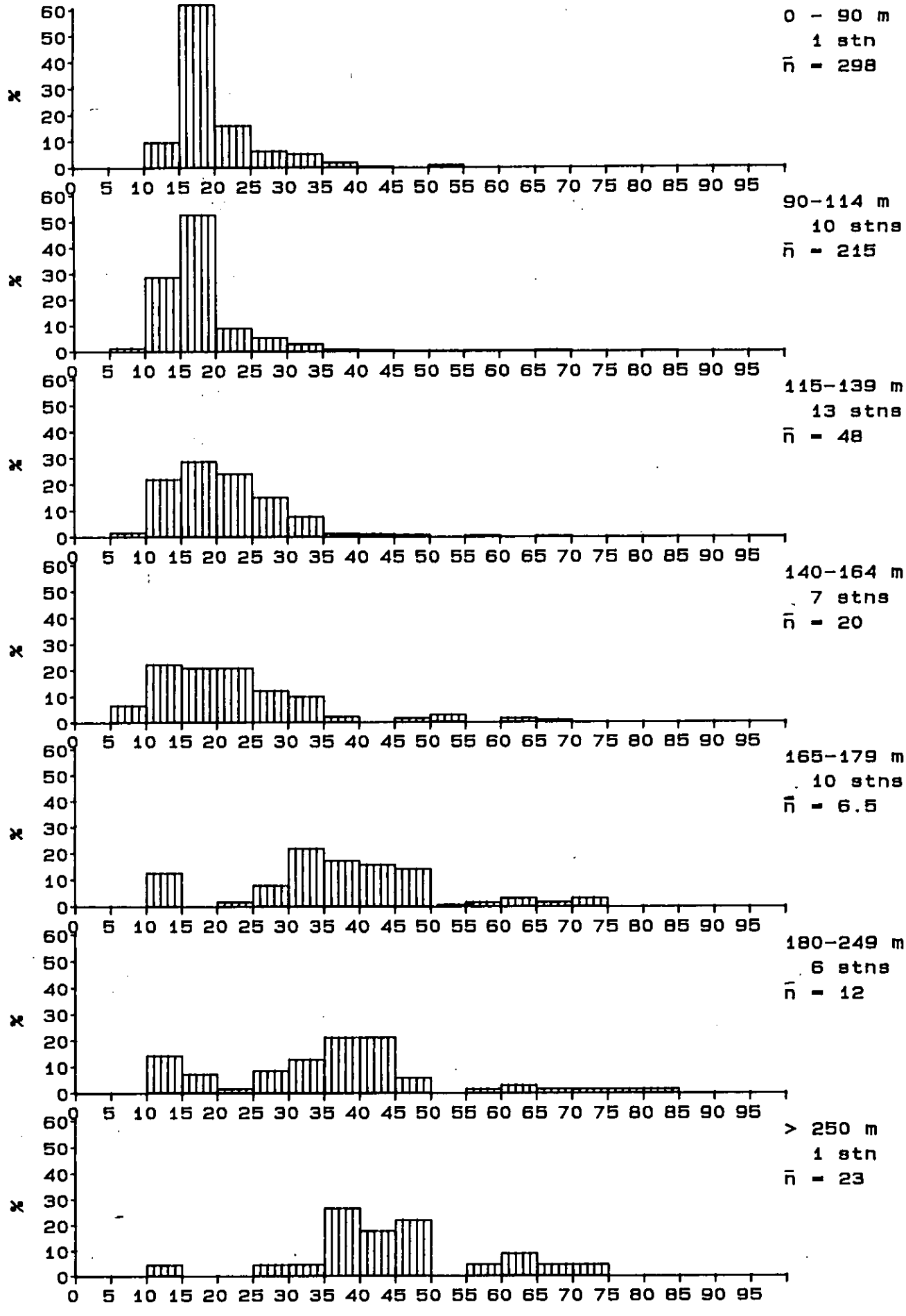


Fig 6 Cirolana 10/85 L. whiffiagonis

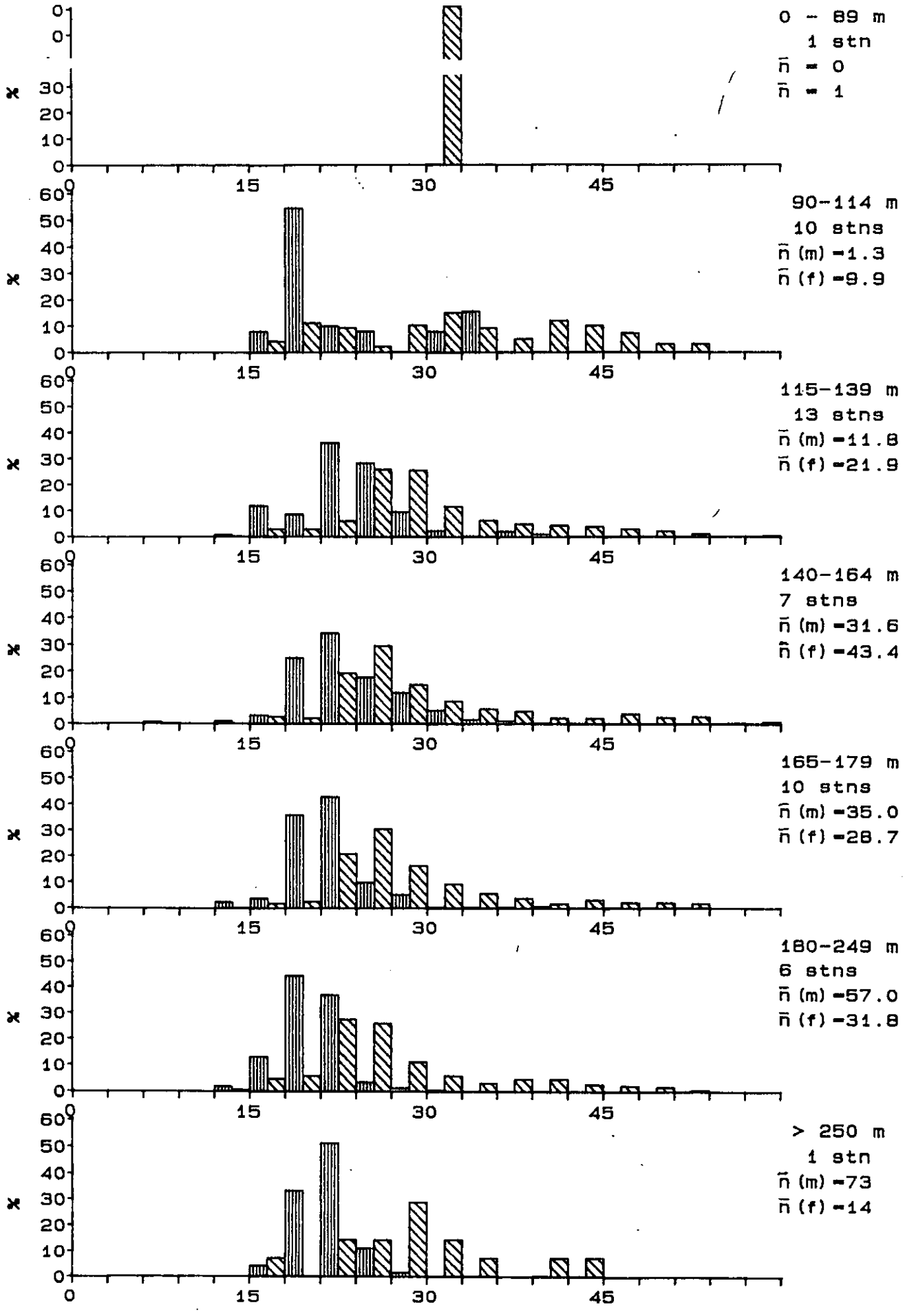


Fig 7 Cirolana 10/85 M. poutassou

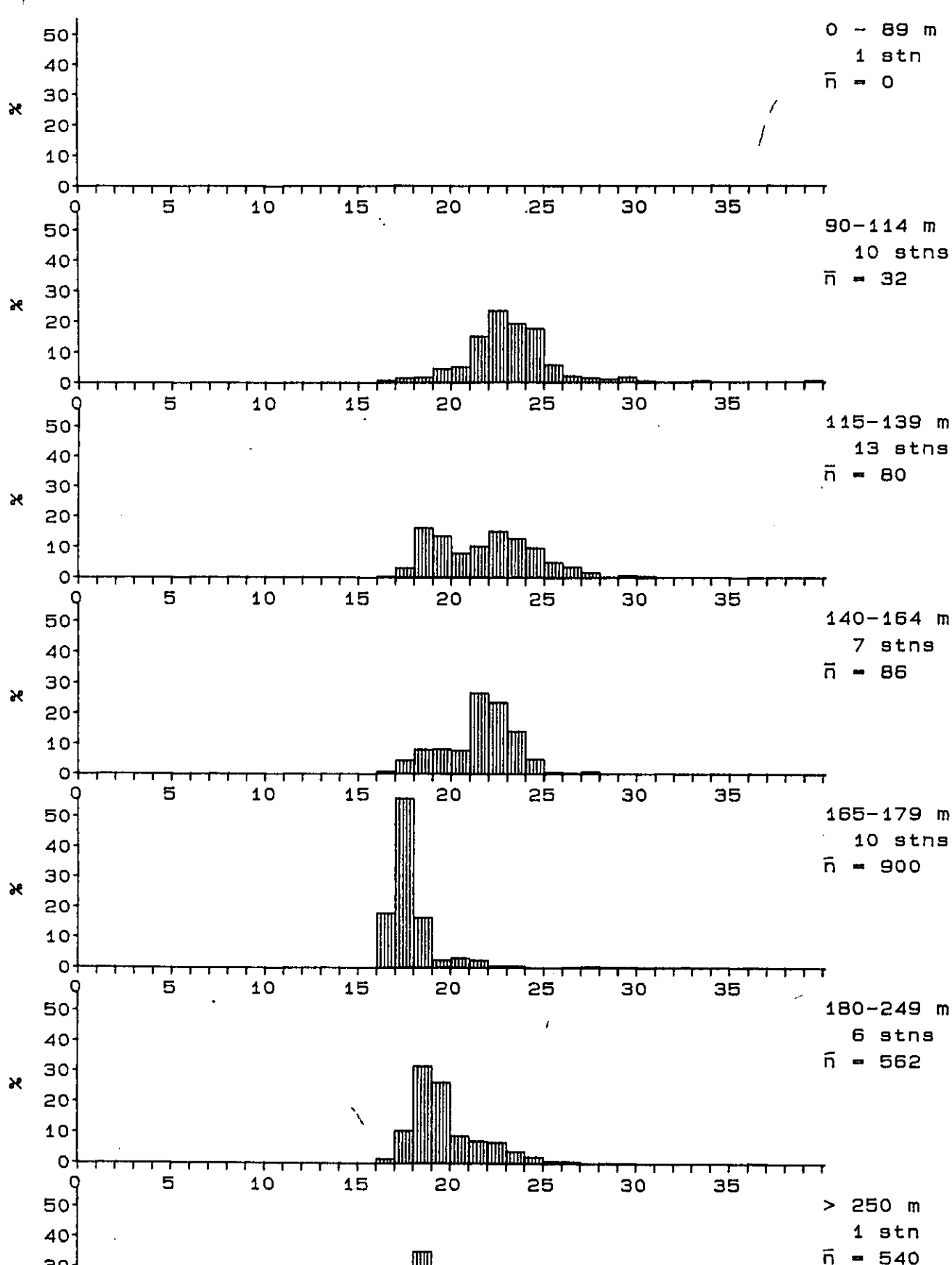


Fig 8. Cirolana 10/85 T. minutus