

MR BARR

dka

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

1974 RESEARCH VESSEL PROGRAMME

REPORT: R V CIROLANA: CRUISE 1/74.

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

STAFF: J P Bridger, NIC  
B C Mumford  
C Whiting  
K Medler  
J Last  
S Stevens  
M Roche  
N Merritt, IOS  
M Clarke, MBA

DURATION: Left Grimsby 0700 h 10 January.  
Arrived Grimsby 1000 h 30 January  
All times Greenwich Mean Time

LOCALITY: West of Britain

AIMS:

- 1 To re-survey the deep trawling grounds on the Atlantic continental slope from the South Hake Ground to Sulisker in winter.
- 2 To weigh and measure all the potentially marketable species caught and to take otoliths for subsequent age determination.
- 3 To deep freeze small samples of the major species for Torry Research Station.
- 4 To recover a current meter station laid in deep water in the Southwest Approaches on CIROLANA 10/73.
- 5 To obtain Cephalopods for Dr Clarke (MBA).

NARRATIVE

The vessel left Grimsby at 0700 h 10 Jan and after a fairly rough passage via the English Channel dropped anchor off Brixham at 2330 h 11 Jan when Dr Clarke and Mr Merritt came aboard via the Pilot Boat. During the rest of the night and the following morning CIROLANA remained at anchor in company with 10 other merchant ships and sailed as soon as the gale moderated somewhat at 1600 h 12 Jan for the current meter station. Progress was slowed up by further gale force winds, the whole of 13 Jan being spent dodging in the Western Approaches. At 0800 h 14 Jan the vessel arrived on station and a weak signal was heard on the acoustic release system. The release system was fired but nothing appeared at the surface. Many runs were made over the area, the primary release and back up release systems each being activated 5 times without result. From 1430 h the Elac sonar was used to try to locate the sub-surface buoy on each run over the station but no echo was heard or seen. At 1630 h a somewhat clearer signal was heard. Both primary and back up releases were again activated but nothing came up.

Since nothing further could be done the vessel set course for the South Hake Ground where fishing began at 1245 h 15 Jan. Three trawl hauls were made there at 300, 400 and 500 fms before setting course for the South Farm. Thereafter 4 days of gales and severe gales ensued with winds of over 70 knots at times. Eventually the South Farm and Porcupine Bank areas were abandoned and, after running before the gale to the Tory ground and dodging there for a time, trawling began again at 0003 h 21 January. Five hauls, including one in which the net was severely damaged, were made in 300-550 fms by 1807 h 21 Jan when course was set for the Barra ground.

A single haul was made on the Barra ground before 45 knot winds made further work impossible and since repair work was needed on the clutch plates of the trawl winch the vessel set course for Stornoway. On arrival there at 1000 h 23 Jan the repair work was promptly carried out but, in view of 40 knot westerly winds and severe gale forecasts for all western sea areas, sailing was delayed until 0900 h 24 Jan to allow the swell to subside.

Thereafter the weather improved. Up to this point in the cruise the wind speed had averaged 35 knots and a very heavy swell prevailed on all these grounds, making the use of heavy gear very difficult.

Three hauls were made on the Sulisker ground on 24 Jan, 4 on the Flannan ground on 25 Jan, 4 at Kilda on 26 Jan and one at Barra by 0845 h 27 Jan.

The vessel then turned north again with the intention of making at least one more haul at Kilda and Flannan and as many as possible at Sulisker. The Kilda and Flannan hauls were successfully completed on 27 Jan before the weather broke again. On 28 Jan with 40 knot winds, a forecast of SE 11-12 for the Hebrides area and the barograph pen off the paper at a remarkable low of 948 mb. the plan to make further hauls at Sulisker had to be abandoned and, as soon as the wind veered to the west course was set for the Pentland Firth. After an uneventful passage the vessel docked at Grimsby at 1000 h 30 Jan.

## RESULTS

Despite very heavy weather the main aims of the cruise were achieved. 23 trawl hauls of  $1\frac{1}{2}$  h duration each were made of which two were invalidated by damage to the net. Only the South Farm ground, which has never in the past produced worthwhile catches, and the slope to the NW of Porcupine Bank were not surveyed as planned.

On 5 main grounds, Tory, Barra, Kilda and Flannan the abundance of fish between 300 and 600 fathoms was much as it was last summer. At Sulisker the catches were lower, 320 kg/hr as against 652 kg/hr in April and 496 kg/hr in July. The total catch in  $31\frac{1}{2}$  hours fishing was 24.3 tonnes, a catch rate of some 21 baskets per hour. The species composition on each ground also differed little from previous cruises, hake and sharks being somewhat more abundant and smoothheads less abundant than formerly.

The approximate breakdown of the total catch was:

Marketable species: 2.2 tonnes, consisting of Blue ling 1.2, Hake 0.3, TorSk 0.2, Forkbeard 0.1, others 0.4 tonnes.

Potentially marketable species: 11.8 tonnes comprising Grenadiers 9.0, Scabbard 1.6, Gephyroberyx 0.6 and Mora 0.3 tonnes.

Sharks: 5.7 tonnes with Deania, Centrophonus and Centroscymnus spp predominating.

Trash species: 4.6 tons mainly smoothheads and Rabbit fish (Chimaera).

The Tory, Barra, Kilda and Flannan grounds each produced over 800 kg/hr. Flannan being slightly more productive than Tory (1114: 1069 kg/hr) with Kilda and Barra (where only 2 hauls were made) lying in 3rd and 4th place. On each ground catch rates varied considerably with depth, as did the species composition; the biggest haul of Grenadiers occurred at 450-500 fms on each of the main grounds.

The headline telemeter was used on a number of occasions and the 10 kHz pulse was recorded on board in depths of up to 500 fms.

The fate of the deep laid current meter rig remains a mystery. Either the charges did not fire, or the wire was not cut by the chisels, or the sub-surface float was missing or waterlogged. Judging from the absence of any sign on the sonar or echo sounder of anything in midwater during repeated runs over and all round the position the latter explanation seems the most likely. The rather weak signal suggests that whatever remains of the rig is lying on the bottom. No current meters were attached to this experimental rig.

Nearly 6000 fish were measured on this cruise, including 1600 Grenadiers, 660 scabbard, 800 Chimaera, 275 Smoothheads, 780 sharks and 1200 fish of other species.

Length/weight data was obtained on 200 grenadiers, 140 scabbard, 170 Chimaera, 60 smoothheads and 55 Gephyroberyx.

Virtually all the female sharks were examined for maturity. Some 200 pituitary and hypothalamus glands were taken from grenadiers before the supply of liquid nitrogen was exhausted, and stratified otolith samples were taken whenever large catches of this species were made.

Six specimens of each of the major species were gutted and deep frozen for Torry Research Station.

Squid were not abundant on this cruise. Dr Clarke obtained all the squid taken as well as some megrims and flesh samples of Chimaera for Dr Dando.

J P Bridger  
11 February 1974

Seen in Draft: T R F  
G W A  
  
A J L

Distribution:

Basic List  
Mr Bridger  
Mr Mumford  
Mr Whiting  
Mr Medlar  
Mr Last  
Mr Stevens  
Mr Roche  
Mr Merritt  
Mr Clarke