

jh

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

1978 RESEARCH VESSEL PROGRAMME

REPORT: RV CIROLANA: CRUISE 9

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

STAFF

FSMO J P Bridger (NIC)
C T Macer
B C Bedford
M W Easey
S Wames
D Whittaker (Hull)
R Bray (British Museum)
A Wheeler " "
C Baker (W.F.A., IDU Hull)

DURATION

Left Grimsby 1400 h 12 October
Arrived Grimsby 1630 h 31 October
All times are Greenwich Mean Time

LOCALITY

West of Scotland - Rockall

AIMS

1. To locate commercially viable quantities of blue ling on the continental slope.
 2. To obtain biological samples of blue ling, grenadier, black scabbard, Directorfish etc.
 3. To fish for and sample haddock on Rockall Bank.
 4. To collect hearts for Dr Greer Walker.
- Prior to sailing a number of other requests were made, notably,
5. To sample sharks for fecundity, egg size, pup number etc (Mr Holden).
 6. To collect flesh samples for heavy metal analysis (Mr Murray, Burnham).
 7. To collect whole blue ling and fillets for electrophoresis and parasite infection (Dr Burt, Humber Lab).
 8. To land 100 Kg of gutted Coryphaenoides (Grenadier) for Findus Ltd.
 9. To sample Micromesistius (blue whiting) whenever caught, (Dr Pawson).
 10. To land deep frozen fillets of major species for British Fisheries Society (Dr Solomon).

NARRATIVE

Sailing at 1400 h 12 October RV CIROLANA made a quick, easy passage to the Sulisker section of the continental slope where trawling began at 1430 h 14 October. Seven hauls at depths of 300-650 fms were made with the French semi-pelagic G.O.V. trawl by 0900 h 16 October. Gale force westerly winds prevented further work until 0750 h 17 October when course was set for the Flannan section. Seven hauls at depths of 250-650 fms were completed there by 1830 h 18 October but considerable damage to the gear was sustained and on the fourth haul the entire trawl was lost and was replaced by a normal 80ft headline Granton trawl fitted with heavy rubber bobbins. This trawl survived the cruise although the headline parted twice and square and bunts suffered damage. After an overnight steam work on the Kilda section began at 0700 h 19 October and ten hauls at depths of 250-700 fms completed by 1700 h 21 October.

After a further overnight steam work on the Barra section began but no trawling was possible on 23 and 24 October due to renewed westerly and south westerly gales. Six hauls were successfully completed at depths of 300-700 fms and a further haul made in 60 fms to obtain haddock for morphometric comparison with the haddock of Rockall Bank. This work was completed by 1500 h 25 October when course was set for Rockall. On 26 October two hauls at Rockall Bank produced more than adequate samples of haddock and the vessel returned to the Flannan section. After one haul there on 27 October gales again intervened for some 20 hours but on 28 October a further 3 successful hauls were made thus completing the work in this area by 1630 h. This really completed the planned work of the cruise but having a day in hand course was set for the Foula section where four hauls at 300-600 fms were completed by 1640 h 29 October. Course was then set for Grimsby and after a calm passage the vessel docked at 1630 h 31 October.

RESULTS

Forty one hauls each of one hour's duration were made, 38 in deep water and 3 in shallow water, one off Barra and two at Rockall Bank. Ten hauls were made with the GOV trawl which fished well and suffered little damage until it came fast and both bridles parted.

Total catch rates were much as expected, 722 Kg per hour between Sulisker and Barra and much lower in the cold water off Foula. Full analysis is not yet complete but blue ling were conspicuously absent from the shelf, the catches seldom exceeding 20 Kg per haul. Coryphaenoides was normally most abundant at 400-550 fms and catches of over one ton per hour were made at Sulisker and Kilda in 400 fms. It was as usual the most abundant species on the northern slope grounds providing just under 40% of the total catch (237 Kg/h) but at 400 and 450 fms it comprised 75 and 63% of the total catch respectively. At depths of 250-300 fms Chimaera was abundant and at below 550 fms Smootheads (Alepocephalus) increased the trash fish component to over 40% in several hauls.

AIM 1 failed in that nowhere on the slope between Barra and Sulisker were commercially viable catches of blue ling encountered between 250 and 700 fms. The highest catch rate was at Foula in 300 fms (70 Kg/h) followed by Sulisker in 300 fms (35 Kg/h). Since virtually none was taken at Kilda or Barra this suggests that the blue ling at this season is mainly to the north of the surveyed area.

Biological sampling of the main species (AIM 2) went extremely well.

Full biological samples involving length, otoliths, weight, sex, maturity, and stomach contents were carried out on:

Coryphaenoides	550 fish
Aphanopus	309 fish
Gephyroberyx	90 fish
Alepocephalus	208 fish
Argentina silus	30 fish
Trachyrhynchus	29 fish
Lepidion	23 fish
Reinhardtius	34 fish
Molva	123 fish
Micromesistius	233 fish

Of the various sharks (Aim 5) the following numbers were examined for length, weight, sex, maturity, size of ovarian eggs, number and size of pups:

Centroscymnus coelolepis	125
Deania	260
Centrosymnus crepidater	107
Centrophorus	29
Atmopterus	155

Ovaries were taken and preserved for fecundity studies from Coryphaenoides (30) Gephyroberyx (27) Alepocephalus (25). Most stomach contents were examined on the spot but 45 stomachs of Coryphaenoides were preserved for detailed examination ashore and 12 samples of small animals, mainly crustaceans, were collected from the benthos in the fish pound to aid identification.

A sample of 30 hearts was taken from all the major species and deep frozen for Dr Greer Walker and 3 hearts from each of 16 species fixed in Bovin's solution and held in 70% alcohol.

Fifty-gramme flesh samples were taken from 25 fish of known length weight and sex of the major species for heavy metal analysis (Aim 6).

A sample of 25 whole blue ling and a further fillet from 25 other fish were deep frozen for Humber Lab (Aim 7). A number of parasites located during routine sampling were also deep frozen. These were in addition to the routine examination of fish for intestinal parasites by Dr Bray (British Museum).

The required 100 Kg of Coryphaenoides were gutted and deep frozen for Findus Ltd while about 40 Kg of fillets of Coryphaenoides, Gephyroberyx, Aphanopus carbo and Molva dypterygia were deep frozen for Dr Solomon.

In general the spawning season of most of the bony fish would appear to be over and somewhat surprisingly large ovarian eggs and pups in the 'uteri' of the sharks were also rather uncommon. Preliminary analysis of stomach contents confirmed the importance of crustaceans, mainly red prawns in the diet of Coryphaenoides.

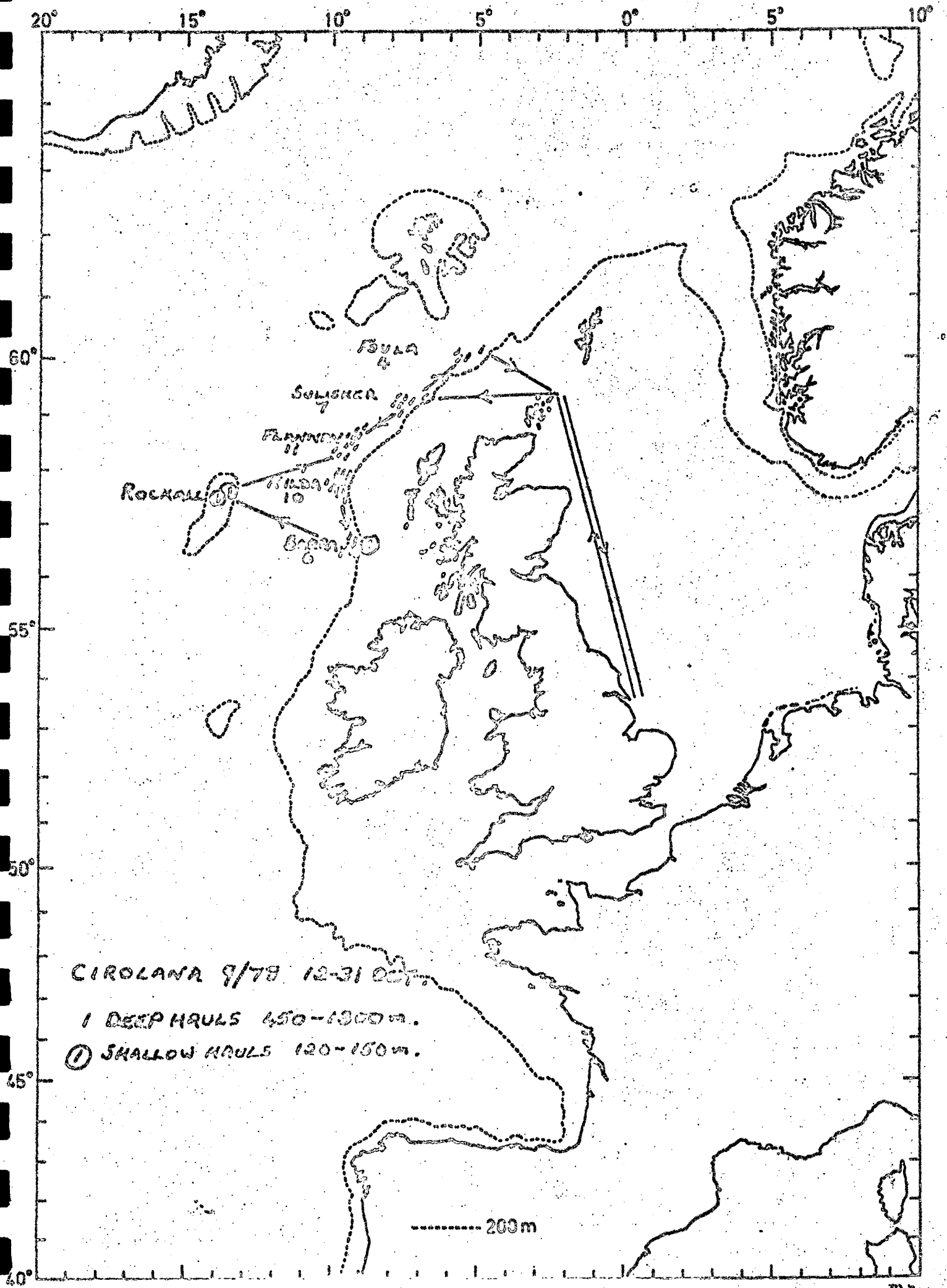
J P Bridger
8 November 1978

SEEN IN DRAFT: Captain T H Finn - Master
E A Pearson - Fishing Skipper

INITIALED: AJL

DISTRIBUTION:

Basic List	B C Bedford	D Whittaker (Hull)
J P Bridger	M F Easey	R Bray (British Museum)
C T Macer	S Barnes	A Wheeler " "
		C Baker (W.F.A., IDU Hull)



CIROLANA 9/78 12-31 OCT.

1 DEEP HAULS 450-1300m.

① SHALLOW HAULS 120-150m.

----- 200m