

MR SAPE

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

1973 RESEARCH VESSEL PROGRAMME

REPORT: RV CIROLANA: CRUISE 9/1973

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

STAFF:

- L Birkett
- B C Bedford
- D Thompson
- P M Connor (Burnham)
- M W Easey
- M Macdonald
- T Watson
- B Knights
- A King (Lowestoft)

DURATION:

Left Grimsby 1730 h 25 October

Arrived Grimsby 0130 h 20 November

All times Greenwich Mean Time

LOCALITY:

West Greenland

AIMS

1. To survey the fish stocks off West Greenland as part of the ICNAF co-ordinated groundfish survey programme.
2. To make hydrographic observations in the fishing area.
3. To obtain blood and tissue specimens from cod for biochemical-genetic tags.
4. To obtain fish serum for a comparative vitamin-D study (Nuffield Institute).

NARRATIVE

CIROLANA left Grimsby at 1730 h, 25 October. A deckhand was put ashore at Scrabster, and course was set for Cape Farewell. The outward passage was uneventful apart from a 33-hour period of dodging on 28-30 October.

Ice-bergs were sighted at 1000 h, 1 November and by 1130h, when the coast of Greenland was first sighted some 50 miles away, there were many bergs and growlers on all sides of the vessel. The presence of ice at night brought a reduction in speed to 8-10 knots as a precaution, throughout our presence in these waters.

Course was set for the first fishing ground, at Nanortalik Bank, which was fished in good weather on 2 November, still in company of many large bergs. Overnight the vessel moved into deeper water, intending to carry out hydrographic section C, but by doing so got caught up in a NW gale and was forced

to dodge. During the next 50 h the gale developed to hurricane strength with gusts up to 90 knots and the vessel reached the latitude of Cape Farewell before it was possible to turn about and dodge northwesterly for a further 24 h.

On the morning of 6 November being level with Danas Bank with the wind reduced to 10 knots, it was decided to go in and fish there, to complete the northern part of the survey before calling at Godthaab, and then to do the southern part later on. Fishing and hydrographic sections were carried out at Danas, Fyllas and Banana Banks, in favourable weather conditions and with comparatively few bergs or growlers.

The vessel entered Godthaab at 1300 h, 9 November and left at 1230 h the next day. A message concerning the progress of the survey was left for the German scientists aboard RV WALTER HERWIG, which is expected to reach Godthaab in early December.

The remainder of the cruise was a compromise between making up for lost time, and completing unfinished parts of the survey, without getting caught up in the severe weather which was still apparent out in the Davis Strait.

Combined with the generally unfavourable nature of the bottom for trawling along most of the coast, these factors restricted further fishing to a few hauls at Frederikshaab and Malenefjeld Banks. Hydrographic sections were worked at Cape Desolation and Nanortalik.

At Cape Farewell, which was reached on 13 November with a full northerly gale in opposition to strong tides it proved impossible to either fish or carry out hydrographic work. In view of continuing bad weather prospects, the line of hydrographic stations was replaced by a series of XBT casts, and the vessel then set course for Cape Wrath at 1800 h, 13 November. The homeward passage was uneventful until Cape Wrath; from there it was again necessary to proceed at reduced speed, owing to bad weather almost to Grimsby. The vessel docked at Royal Dock at 0130 h, 20 November.

RESULTS

A chart showing the stations worked is attached. Although fewer trawl hauls were made than in the corresponding survey of 1972 (CIROLANA 8) the main banks were equally well surveyed, and hydrographic work carried out on all five sections.

1. Groundfish: Tables 1-3 summarize the main results of fishing in terms of mean weight of fish caught per hour on each ground, mean numbers per hour, and percentage composition by weight of the total catch. Three species of catfish - blue (Anarhichas lupus), spotted (A. minor) and jelly (Lycichthys denticulatus) were present on all banks; cod and long rough dabs occurred in most hauls. These made up the major part of the catch; other species - halibut (Hippoglossus hippoglossus) and Greenland halibut (Rheinhardtius hippoglossoids), redfish (Sebastes marina, S. mentella) and sandeels were more sporadic in occurrence but sometimes contributed significantly to the catch.

Quantitatively, Nanortalik and Banana Banks were the least productive. Proceeding from south to north, catfishes and dabs tended to replace cod in both kg/h and % by weight. The haul at Malenefjeld, which yielded nearly $3\frac{1}{2}$ tons of lively medium-sized cod was exceptional; it paralleled a similar catch in 1972 at Cape Farewell and showed the spotty nature of distribution of this species. Both these Banks are relatively little fished commercially. The catches in kg/h are on average a little above those of Cruise 8/1972, but differences in position of tows, and time of year, would probably reduce the significance of this difference.

2. Midwater traces occurred extensively in the northern part of the survey area. The Boothbay net caught only a few small capelin, redfish and euphausiids. Cod in some hauls were feeding on both sandeel and small redfish. Owing to lack of control over the net, the Boothbay was only launched once.
3. Bottom temperatures were taken after every trawl haul. Except for Banana Bank, and one position at Fyllas, temperatures exceeded 3°C. Only at one position, at Banana Bank, was a bottom temperature below 2°C obtained on any fishing bank. No correlation could be found between bottom temperature and the abundance of any of the fish species.
4. Samples of blood and tissues were obtained from 380 cod (Aim 3) and serum samples from 5 species of fish (Aim 4).
5. Other fishing vessels: Two or three pairs of vessels were working at Danas and Fyllas. These were identified in Godthaab as Spanish stern trawlers, working as pair-boats but the nature of their catch was not discovered. Apart from one liner at Fyllas, no other fishing vessels were observed.
6. Ice conditions: At Nanortalik and Malenefjeld as many as 20-30 large bergs were in view at a time, and many growlers. Above Danas, the number of bergs fell to 3-4. At Cape Farewell, a large field of polar ice was reported west of the Cape, and many bergs were seen here early and late in the cruise.
7. A number of fishspecimens were deep-frozen whole for the Exhibition Committee. About 100 kg of sandeels were deep frozen for use in Biology Section.
8. At the height of the storm (3 November) a large herd of small whales was wave-riding around the vessel. The herd extended for at least $1\frac{1}{2}$ x $\frac{1}{2}$ miles and several dozen whales could be seen at any one time. Although they could not be positively identified, shark and porpoise were eliminated.
9. XBT casts were made at the synoptic hours on passages across the North Atlantic and also on the run from Banana Bank to Cape Farewell.

L Birkett
29 November 1973

SEEN IN DRAFT: T H Finn

W J Saxby

INITIALLED: AJL

DISTRIBUTION:

Basic List

L Birkett

B C Bedford

D Thompson

P M Connor (Burnham)

M W Easey

M Macdonald

T Watson

B Knights

A King (Lowestoft)

SUMMARY OF CATCHES

1. mean kg/hour

	Nan- ortalik	Malene- fjeld	Frederiks- haab	Danas	Fyllas	Banana
Hauls (hours)	5	1	1	3	5	3
Catfish	67	63	235	253	376	85
Cod	150	3574	159	195	41	23
LRD(a)	18	8	8	205	378	208
Others	18	52(b)	1582(c)	30	200(d)	66(d)
Total	254	3697	1984	683	995	382

2. mean % of total weight

Catfish	26	2	12	37	38	22
Cod	59	96	8	28	4	6
LRD	8	-	1	30	38	55
Others	7	2	79	5	20	17
	100	100	100	100	100	100

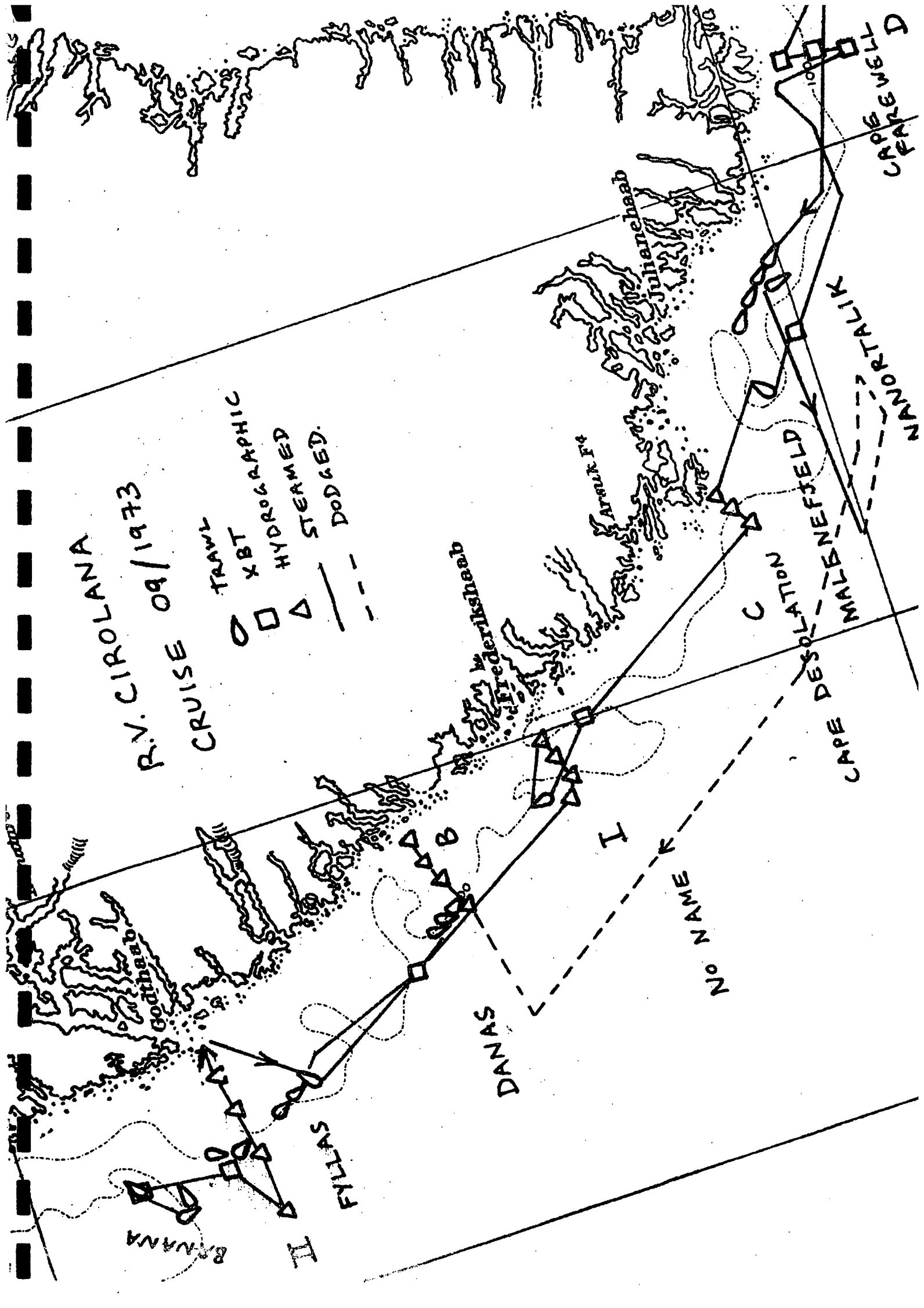
3. mean number/hour

Catfish	28	5	46	106	220	59
Cod	56	1924	38	57	21	2
LRD	168	(e)	(e)	794	1450	1150

- NOTES: (a) LRD = long rough dab
 (b) mostly *Sebastes marina*
 (c) *S. marina* with *S. mentella*
 (d) sandeels
 (e) present, not counted

R.V. CIROLANA
CRUISE 09/1973

○ TRAWL
□ XBT
△ HYDROGRAPHIC
--- DODGED.



BANANA

II

FILITAS

DANAS

I

NONAME

C

CAPE DESOLATION

MALENEFELD

CAPEWELL

NANORTRALIK

Godthaab

Medelsknebb

Julianehaab

ARNAK F4