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

1986 RESEARCH VESSEL PROGRAMME

REPORT: -RV CIROLANA: CRUISE 4
(PROVISIONAL: Not to be quoted without prior reference to the author)

STAFF

- | | |
|----------------------|-----------------------------|
| Part (a) 18-22 April | Part (b) 22-29 April |
| R. B. Mitson (SIC) | R. B. Mitson (SIC) |
| J. W. Ramster | J. W. Ramster |
| E. G. Shreeve | E. G. Shreeve |
| W. L. Huggins | B. F. Riches |
| B. F. Riches | N. D. Pearson (22-26 April) |
| B. C. Mumford | D. Bucke |
| R. P. Flatt | S. W. Feist |
| S. M. Blazeby | D. R. Eaton |
| C. Symons (CSA Ltd) | B. D. Rackham |
| M. Symons | A. Diamant (DAFS) |

DURATION

18-29 April

LOCATION

Irish Sea

AIMS

1. Multi-net sampler performance measurements.
2. Performance and use of SM600 sonar.
3. Test parts of Scanmar trawl measurement equipment.
4. Sample commercial fish in the Irish Sea; record diseases and parasites.
5. Take selected samples from catches of commercial fish for histological examination.
6. To lay three current meter moorings.
7. Re-lay the tetrapod off Sellafield.
8. Collect a mud sample for AEP4.

NARRATIVE

CIROLANA left Lowestoft at 1500h GMT and proceeded to the South Coast. Passage was continued until midday on 19 April when trials of the multi-net plankton sampler commenced. In the early evening a forecast of strong south-westerly winds was received so CIROLANA moved towards the north Cornish coast.

On 20 April the wind was 6-7 westerly but after dodging for a time the vehicle was launched with the ship running before the wind. A number of tows were carried out with adjustments and modifications being made as required. During the day the sonar was operated for training purposes including the tracking of the multi-net sampler and results were recorded on video tape.

Work was continued in St Georges Channel on the following day when most of the necessary measurements of vehicle trim were completed. Some difficulty with the net operating mechanism led to an investigation of the causes. A heavy fall on to the ramp during launching on 22 April caused some damage to the tail section. After this was repaired a connection to the battery became open-circuit and there was insufficient time to deploy again after this was repaired.

The staff changeover took place during the afternoon at Holyhead by means of the ships' boat. Course was then set for St Bees Head where on the morning of 23 April the tetrapod was lowered to the seabed. Current meter stations P,Q,R were then laid, clearing the decks for fishing and a tow was made during the evening in summerlike conditions.

~~CIROLANA steamed overnight to Dundrum Bay and shot the trawl before breakfast,~~ a small catch of fish and several rocks were brought aboard. Further tows were made during the day and satisfactory samples of plaice and dabs obtained. The Scanmar trawl headline height and wing spread system was used with a receiving transducer towed over the side. Results were very good. The small boat made a survey of the area where a current meter mooring was reported to be on the bottom but nothing was found. Two current meters and an acoustic release unit were brought out to CIROLANA together with two subsurface floats all of which had been washed up on a local beach. After fishing was finished for the day the multi-net sampler was launched and some useful results obtained.

On 25 April fishing began in the Liverpool Bay area. Catches were small for all of the five tows but sufficient for specialist examination. In the late afternoon a message was received which necessitated the landing of a crew member urgently and course was set at full speed for Whitehaven. Soon after this thick fog developed but CIROLANA arrived off Whitehaven at 2100h.

Fishing started again before breakfast on 26 April with a basket of plaice and a few dabs resulting from the first tow, but very little, except for thirty Maxmullaria lankastri, caught on the second. A sample of the latter was preserved for AEP4. In mid-morning the ship moved into the triangle of toroids guarding the tetrapod which was raised without difficulty. Data tapes were removed, batteries replaced and after test the system was again lowered to the seabed and released. Mr Pearson was disembarked by the ships' boat shortly after mid-day. ~~It was noted that moorings P and Q were still in position as CIROLANA passed~~ through the area.

A further trawl haul was made in the same position as the first tow of the day and this yielded a good catch of plaice and dabs. The Day grab was then used at station PRO2R to obtain 125 litres of mud sample after which a course was set towards Cardigan Bay.

Trawling started at 0430h on 27 April, the first and second hauls producing mainly skate. Very few plaice and dabs were caught on the two subsequent hauls, one of which produced a large quantity of weed, but a further haul in the early afternoon gave adequate numbers to meet the scientific requirements. One small Squatina was sampled for Dr Mackenzie (DAFS).

At 1330h CIROLANA set off on the return journey to Lowestoft and docked at 1230h on 29 April.

RESULTS

Aim 1. It was possible to verify that the principles behind the design of the multi-net sampler were sound and that the active control system could trim the vehicle satisfactorily under most conditions. A full analysis of the measurements will be necessary before a final assessment can be made of the performance. The motion of the ship was coupled to the vehicle in rough sea conditions when the cable length was small. Some snagging of the net bars occurred and modifications were made to the end runners but subsequent tests were not conclusive because of another problem which developed after the heavy drop onto the ramp. Although trivial this took time to repair and could not be completed before the staff changeover took place.

Further trials were possible later. Although these were held in very calm conditions there was sufficient evidence to show that the operation of the nets was much improved.

Aim 2. The Simrad SM600 sonar was used extensively for training purposes. A simplified set of operational notes was prepared and video recordings made of various situations. These included the tracking of the multi-net sampler through a wide range of depths. Insufficient time was available to measure the performance of the system.

Aim 3. The Scanmar trawl parameter measurement system is supplied with a transducer for attachment to the hull or to be lowered down a tube. However, the ships' instrument tube was not serviceable, so the towed transducer belonging to the wide-graph echo-sounder was used, deployed from the starboard forward baggage davit. Continuous and reliable signals were received using this system. Wing end spread and headline height showed little variation at the depth/warp ratios used, but the sensitivity of the net aperture to deviations of the ship from a straight course were clearly evident. A cable fault prevented a check on the system during the last haul.

Aim 4. A total of 19 trawl hauls were made with the Portuguese high headline trawl. Fishing began off St Bees Head but one tow only was possible on the 23 April, followed on consecutive days by five tows in Dundrum Bay, five tows off Point of Ayr, three further tows off St Bees Head and five tows in Cardigan Bay. Sufficient numbers of dab and plaice were caught from all four areas in order to record gross anomalies and provide material for Aim 5.

Other commercial fish, although low in numbers (apart from good catches of skate in Cardigan Bay) were examined for gross anomalies. External anomalies in dab and plaice, including Lymphocystis, epidermal hyperplasia and epidermal ulcers were recorded in fairly high numbers from the Point of Ayr area. Few diseases were observed in dab and plaice from the other areas. Photographs of examples of fish diseases were taken.

Sampling requirements for this study were attained and the work load was accomplished by a team of six scientists without any problems.

In addition, otoliths were taken from 5 witches, 1 pollack and 32 plaice to augment the market sampling programme.

Aim 5. From each of the four areas covered in the fish disease investigations samples of internal organs from dab and plaice were fixed in 10% formalin for subsequent histological examination at FDL. In addition, liver samples were taken from all remaining plaice and dab for similar examination. A small number of tissues were preserved for examination with the electron microscopes at FDL and DAFS.

Aim 6. The current meter moorings P, Q, R were laid on 23 April in the required position.

Aim 7. Re-laying the tetrapod and recovering it three days later were extra tasks for this cruise. In addition to the normal complement of instruments a MAFF prototype acoustic back-scatter measurement probe was fitted, programmed to

collect three days data. When the recovery was made, both of the data tapes were fully wound on as expected, so these tapes were removed and returned to the laboratory for analysis. The instruments were serviced and checked before again being deployed in the same position.

Aim 8. Using the Day grab sufficient mud samples were obtained from position 54°20.9'N 03° 38.8'W to fill five 25 litre containers for AEP4.

R B Mitson
2 May 1986

SEEN IN DRAFT: M J Willcock - Master
Fishing Skipper

INITIALLED: HWH

DISTRIBUTION

Basic List +

R B Mitson

J W Ramster

E G Shreeve

W L Huggins

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M Symons (CSA Ltd)

N D Pearson

D Bucke

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