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MINISTRY OF AGRICULTURE, FISHERIES AND FOOD  
FISHERIES LABORATORY, LOWESTOFT, SUFFOLK, ENGLAND NR33 OHT

1989 RESEARCH VESSEL PROGRAMME

REPORT: RV CORYSTES: CRUISE 1/89  
(PROVISIONAL: Not to be quoted without prior reference to the author)

STAFF

A P Scott  
P Witthames  
R J Turner  
B Holford  
D Power  
A Canario (visitor)

DURATION

5 January to 19 January 1989

LOCALITY

North Sea - south of 54° and west of 3°.

AIMS

1. Collect stage IV plaice gonads for fecundity studies (DDB2).
2. Collection of stage IV to VII female plaice - trawling at tidal slacks and over 24 hour periods.
3. Collection of plaice pituitaries for subsequent gonadotrophin purification.
4. Collection of blood and urine from mature female dabs for steroid identification.
5. Collection of cod guts (Royal Holloway College).
6. Collection of cod gonads for genetic studies (Birmingham University).
7. Plaice ovary incubations (steroid bioassay).

NARRATIVE

CORYSTES left her berth at 1910 hours on 5 January and headed south for the Drillstones fishing grounds. Two hauls were made with the Granton trawl in the morning. The ship then steamed to a point NE of the Hinder, where we had fished successfully for plaice two years previously. Two hauls were made here and one slightly further north on the Brown Ridges. These yielded very few plaice indeed. It was therefore decided to search for plaice on fishing grounds further to the north (working on the hypothesis that the plaice had not yet migrated far enough south).

We steamed to Smiths Knoll on the night of 6 January and carried out a two hour trawl in the morning. The yields of plaice were still poor. At midday, we trawled on the Rising Ground, and in the early afternoon on the Botney Ground. It was here that we started to pick up plaice in reasonable quantities (3/4 baskets per haul). The proportion of stage V to VII females, however, was not sufficient to start a 24 hour collection.

We steamed back to the Brown Ridges on the night of 7 January in an effort to increase the catch from this ground, and because P Witthames needed his stage IV female plaice 'fecundity' sample from this area. We fished all through the day but only caught 14 stage IV female plaice.

We steamed to Markhams Hole on the night of 8 January. We carried out 7 hauls on this ground on 9 January and caught good quantities of large plaice (1 to 1½ baskets per haul). Most of the females were at stage IV. Some stage V to VII females were caught, however.

We moved slightly further north overnight to the southern border of the Silver Pits. Three hauls were made on the morning of January 10, but yields of plaice were not as good as those in Markhams Hole. We decided to move slightly south again. However, the ships engine developed a fault and fishing had to be abandoned for the rest of the day.

On January 11, we fished the Botney Ground and on January 12 we fished Markhams Hole again. The yields of plaice were again good in Markhams Hole, and we gradually built up a good collection of bloods and urines from stage V to VI female plaice. Our efforts had to be curtailed, however, because of a depression approaching from the west.

We steamed to Mablethorpe on the night of January 12 to avoid severe gale force westerly winds that were being predicted on the weather forecast. Throughout January 13, we trawled around the Mablethorpe and Wash area but caught insignificant quantities of plaice.

We steamed towards Corton Roads on the morning of January 14 and anchored, while some ovary incubations were set up. We then headed for the Drillstones to do some evening fishing. Fishing was carried out on the Drillstones throughout January 15. Good quantities of stage IV and VII female plaice were caught but, interestingly, there was not a single V or VI.

We returned to the Hinder area on January 16. The Granton trawl was shredded during the first haul and had to be replaced. This delayed fishing for the morning. During the second haul the new net was also torn! This delayed fishing a further 3 hours. Eventually, we carried out three night-time hauls on the Brown Ridges. Only one stage IV female was caught. Most of the plaice were small two year-old males.

After this further convincing evidence that female plaice were not spawning or even coming near the Brown Ridges/Hinder area, it was decided to return to Markhams Hole. Fishing was carried out here throughout January 17 and most of January 18.

CORYSTES returned to port at 0700 h on January 19.

## RESULTS

The lengths of all plaice that were caught were recorded. The numbers and distributions of stages showed interesting patterns:

small stage VI males only on the Brown Ridges;  
equal numbers of males and females on the Drillstones - stage IV or VII females only;

equal numbers of males and females in Markhams Hole - stages IV to VII present (best area for spawning fish on present cruise).

Over 200 blood, urine and ovary samples were collected from stage V to VI female plaice. These will be analysed later in the laboratory.

All plaice pituitaries were frozen and will be used for gonadotrophin purification. Pituitaries of a range of different species were frozen and/or fixed for immunohistological investigation.

Cod guts and ovaries were collected and frozen.

Six ovary incubations were carried out. All but one worked successfully.

Regular trawling on the tidal slacks was not carried out, as we wanted to trawl as much as possible to optimise yields of mature plaice. However, we covered all times of the day.

We only collected 19 stage IV female plaice in the Hinder/Brown Ridges area for the long-term fecundity study. This was most unfortunate, as stage IVs were abundant everywhere else.

A P Scott  
3 February 1989

SEEN IN DRAFT: Capt French  
P MacKay

INITIALLED: DJG

DISTRIBUTION:

Basic List  
A P Scott  
P Witthames  
R J Turner  
B Holford  
D Power  
A Canario (visitor)

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SHOWING:  
CRUISE TRACK  
STATION NUMBER  
COASTLINE

