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

1998 RESEARCH VESSEL PROGRAMME

REPORT: RV CORYSTES: CRUISE 5a/98

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DURATION: 30 April - 09 May 1998

LOCALITY: English Channel

AIMS:

To survey areas in the English Channel previously sampled by Norman Holme in the 1950s using the following techniques:

1. Time permitting, side-scan sonar survey to ascertain the recent intensity of fishing at each site and to determine habitat characteristics.

2. Sample the epibenthic community in close proximity to Holme's stations using repeated tows (5 min duration) of a 2 m beam trawl fitted with a stills camera to obtain images of the seabed and quantitative estimates of epifauna.

3. Collect specimens of live bivalves at each station using an anchor dredge for determination of historical fishing intensity and community composition (NP0309).

4. Collect sediment samples at each station using a Day grab for sedimentological analysis.

5. To collect starfish using a 4 m beam trawl for laboratory experiments. Record the occurrence and damage rate of starfish and retain them for laboratory analyses.

6. Collect live lemon sole for Dr Howell.

NARRATIVE:

The scientific staff joined the ship at Lowestoft on 30 April 1998. CORYSTES sailed at 13.00 h that day and arrived off Margate at 19.00 h.

30 April: On arrival off Margate, the 4 m beam trawl was fished for 45 minutes followed by several short tows with the 2 m beam trawl. Starfish were collected for an experiment to compare the survival of those captured in commercial fisheries and those collected using small survey trawls.

01 May: Work began at Station 2 off Portland Bill at 13.00 h. Day grab samples were attempted but failed due to the rocky nature of the seabed. Five anchor dredge samples were then collected using the replica

Holme dredge. These revealed that much of the substratum was composed of flint stones with some gravel, coarse sand and shell. Only one sample was collected with the 2 m beam trawl as the ground was too hard to risk losing this gear with its camera equipment. It was decided to remove the camera gear the following day and deploy this using the towed camera sledge.

02 May: At station 3, work commenced with Day grab sampling at 06 30 h. The substratum was composed of coarse sand, gravel and shell material. Five anchor dredge and five 2 m beam trawl samples were also successfully collected. A video survey (not recorded) revealed that the gravel component of the substratum was mostly covered by a veneer of finer sand and silt.

03 May: Work commenced at Station 4 off Sainte Malo, France at 06 30 h. Five anchor dredges and 2 m beam trawl samples were successfully collected. Only two Day grabs were collected due to the very stoney nature of the seabed. A video survey revealed a cobble bottom with drifts of broken shell. Dredge samples were then collected at station 8. A video and side-scan sonar survey were also undertaken.

04 May: A complete set of dredge and Day grab samples were collected from stations 5 and 6. One video camera and still camera tow was made across the site. Beam trawls and side-scan sonar were not attempted due to the proximity of set fishing gear.

05 May: Five dredge samples were collected from station 7. Once again the proximity of static gears prevented us from attempting further sample collection and this site was abandoned.

06 May: Work began at station 9 and 10, collecting anchor dredges first, followed by 2 m beam trawls. Poor weather conditions prevented further sample collection.

07 May: Work began at station 11, collecting dredge and beam trawl samples. Three video surveys, one stills camera survey and two runs with the side-scan sonar were also completed. The vessel then returned to station 1.

08 May: Trawling was undertaken off Margate for the collection of starfish, studying the effects of tow duration on arm loss. With the work programme completed and supplementary experiments accomplished, Corystes sailed for Lowestoft, docking at 19 30 h.

RESULTS

Throughout the survey, we were particularly interested in collecting the bivalves *Glycymeris glycymeris* and *Paphia rhomboides* for comparisons with the Holme collection held at the Natural History Museum. Holme (1960) recorded either one or both of these species at each of the stations sampled in the present survey. Holme (1960) collected only one anchor dredge sample per station, whereas we have taken 5 samples from a bullring of radius 250 m. The centre of the bullring was taken as Holme's latitude and longitude coordinates given by Decca. The accuracy of Decca versus DGPS was measured on this voyage to account for inaccuracies during the original survey. Neither species was encountered at Station 2 in the present survey although there was evidence of dead *Glycymeris* shell. Large numbers of *Glycymeris* were collected at station 3, 4, 5, 6, although there were fewer at stations 9, 10 and 11. More than 40 *Paphia* were collected at stations 4, 5 and 6. The substratum at stations 4, 5 and 6 contained a high proportion of maerl, a calcareous alga. The numbers of bivalves collected in the present survey exceed those recorded from Holme's samples. Station 8 was a mixture of cobble and outcrops of stratified bedrock. This complex habitat was typified by beds of *Ophiothrix fragilis* which were found on both types of bottom, and a high abundance of fragile bryozoan colonies of *Pentapora* sp., and other sessile epifauna such as hydroids, anemones and dead men's fingers. Station 7 had a very stoney bottom with a high proportion of the community was composed of the bryozoan *Flustra foliacea.* This station appeared to have the highest diversity of species sampled by anchor dredge, but no bivalves as recorded by Holme, although there was evidence of dead shell. Stations 9, 10 and 11 had a sediment composed mainly of loose gravel and shell debris. Queen scallops, *Aequipecten opercularis,* were highly abundant on the ground (0.25/m^2). There

were few sessile epibenthic species. The most common species were small sea urchins, *Psammechinus miliaris*, and hermit crabs. A beam trawler or scallop dredger was seen actively fishing in the area at the time of sampling.

Only one lemon sole was captured during survey operations.

Dr M.J. Kaiser 08/05/98

INITIALLED:

B. Chapman, Master
R. Graham, Senior Fishing Mate R Graham.

DISTRIBUTION:
Basic list +
M J Kaiser
W J Meadows
D B Edwards
R P Flatt
Guernsey SFC
Jersey SFC
EPSHOM, France