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

1989 RESEARCH VESSEL PROGRAMME

REPORT: RV CORYSTES: CRUISE 6

STAFF:

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DURATION:

Left Lowestoft 0800 h 18 May
Arrived Lowestoft 0540 h 31 May
(All times GMT)

LOCALITY:

Bristol Channel

AIMS:

1. To carry out plankton surveys using the 76 cm High Speed Townet to determine the extent and timing of sole spawning off Travose Head and of bass spawning in the Bristol Channel.

2. To sample bass eggs and larvae and adults to investigate spawning behaviour.

3. To deploy an ARGOS drifting buoy and sea surface drifters in a bass spawning focus to follow the dispersal of spawning products.

4. To obtain surface water samples for tritium and salinity analysis between Hinkley Point and Cardiff.

5. To incubate bass eggs at a range of temperatures for development studies.

NARRATIVE

CORYSTES sailed from Lowestoft at 0800 h, 18 May and spent 2 hours testing the log speed controls in Corton Roads. After putting the LSE engineer ashore, CORYSTES steamed to the start of the sole egg/larvae high speed townet (HSTN) grid, commencing station 1 at 2119 h, 19 May, see Figure 1. The survey was completed at 0808 h, 23 May (St. 65) and CORYSTES detoured to take water samples for tritium analysis between Cardiff and Hinkley Point (Sts. 66-70). Attempts were made to fish for adult bass with the Engels 800 trawl in 20-30 m of water outside the Scarweather and Helwick Banks, but were discontinued due to gear handling difficulties in this depth of water. CORYSTES then sailed to a position (A) off Trevose Head where most bass eggs had been found when sorting the HSTN samples, and the ARGOS buoy was deployed at 0014 h, 24 May. A secondary HSTN grid of 9 stations (72-80) was then sampled around this position to obtain more bass egg distribution information, and the opportunity was taken to prove the fishing operation of the Engels trawl in deep water.

CORYSTES moved to a position (B) in Carmarthen Bay where hourly HSTN samples were taken over a tidal cycle (Sts 82-95) to investigate the occurrance of bass larvae. This was followed by a series of larvae collection tows to the east, off the Gower coast and into Swansea Bay, using the HSTN and the 1.5 m ring net (Sts 96-105), following which CORYSTES steamed offshore overnight to reballast with clean water. As the ring net appeared to fish the most effectively in heavy phytoplankton, it was then used on 26 May for a second 12-hour series of larvae collections stations (at position C), being fished alternately at 5 and 15 m every half hour, and then along a transect (Sts 140-165) due south, from Oxwich Bay to Ilfracombe. On 28 May ring net (and 3 HSTN) collection samples were taken in Bideford Bay (Sts 166-175) and Padstow Bay (Sts 176-186) before CORYSTES steamed for Lowestoft, arriving 0540 h, 31 May.

During the cruise sea surface temperature and salinity data were recorded at all stations and most had salinity samples taken. All plankton samples were sorted for larvae and sea surface drifters were released at 4 positions; A, B, C and D.

RESULTS:

1. The sole/bass HSTN grid was completed successfully and preliminary sorting indicates that spawning by both species was at a low level, with all 6 bass eggs being found in stratified water offshore between Trevose Head and Hartland Point, Figure 2.

2. The apparent scarcity of bass eggs precluded further investigation of spawning behaviour and emphasis was placed on larval studies. Bass larvae were found scattered through the Bristol Channel, with the greatest numbers being taken off the south Gower coast around 2-5 miles offshore. Larvae were found within the range 5-11 mm (approx 15-50 days old) and the catch rate at a depth of 15 m was almost twice that in the top 5 m of the water column.

   Individual larvae (89 in all) were photographed and preserved for histological examination at Univ. Coll., Swansea. Data on larvae of other genera were obtained for comparison of distribution and relative abundance with bass.

3. The ARGOS buoy and sea surface drifters were released in the only bass spawning area located, though unfortunately the former was recovered by an unidentified vessel within 24 h of deployment. Sea surface drifters were also released inshore at positions judged likely to be the origins of bass post-larvae recruiting to the Gower nursery areas.

4. Five water samples were obtained between Hinkley Point and Cardiff.

5. No adult bass were caught.

M G Pawson
29 May 1989

SEEN IN DRAFT: M J Willcock (Master)
R Graham (Fishing Skipper)

INITIALLED: J G S

DISTRIBUTION: On separate page

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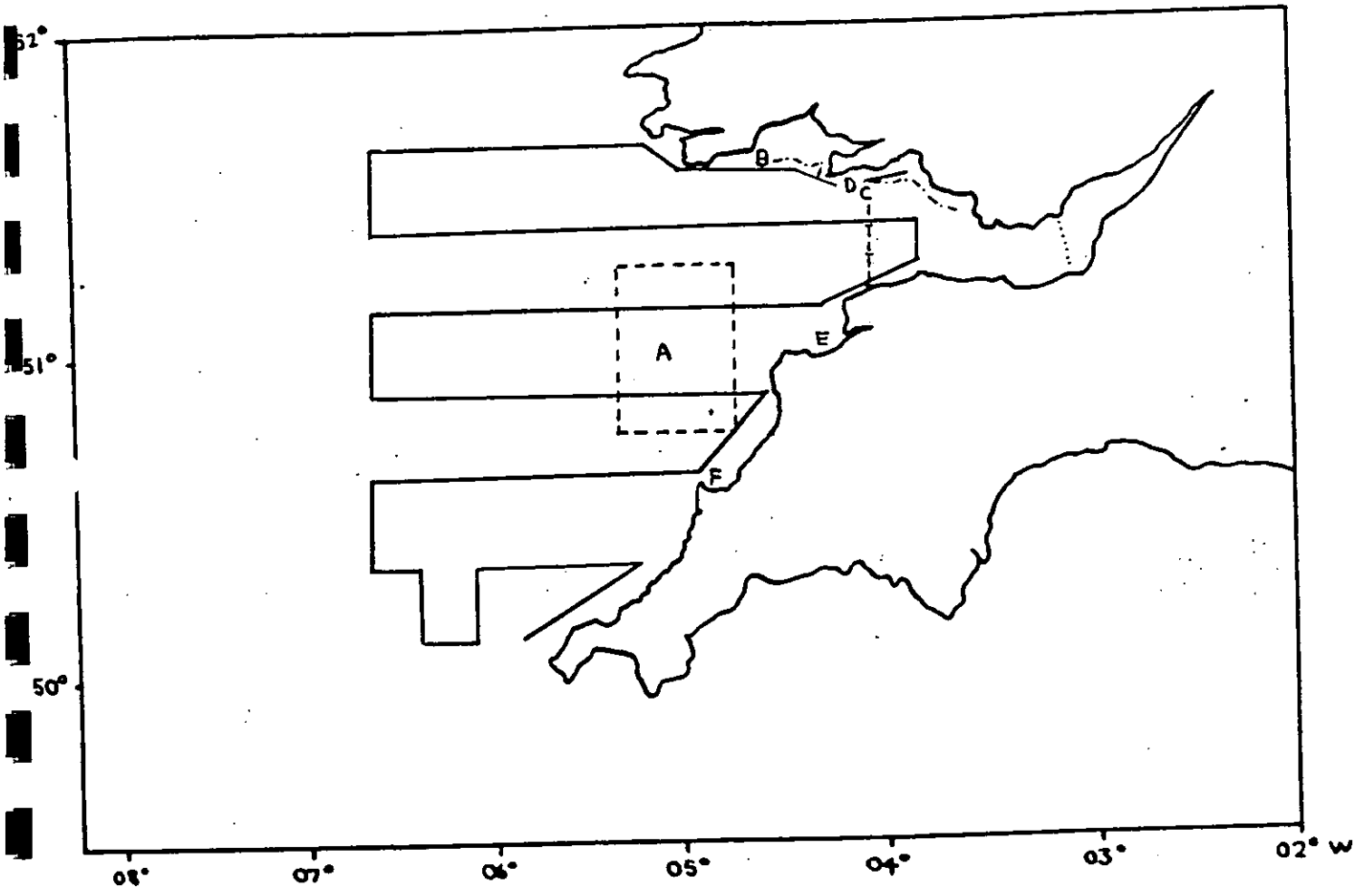
Figure 1

CORYSTES 6/89

TRACK OF SHIP 21·19 19/05/89 - 22·30 28/05/89



——— 21·19 19/05/89 - 08·08 23/05/89 STATIONS 1-65

..... 13·33 23/05/89 - 14·20 23/05/89 STATIONS 66-70

A 00·14 24/05/89 RELEASE OF ARGOS BUOY STATION 71
DRIFTERS RELEASED 42000 - 42099

---- 02·48 24/05/89 - 13·44 24/05/89 STATIONS 72-80

B 19·02 24/05/89 - 09·14 25/05/89 STATIONS 82-95
TIDAL CYCLE SAMPLING: DRIFTERS RELEASED.
42100 - 42149 02·52 25/5/89
42150 - 42199 09·02 25/5/89

-·-·- 10·34 25/05/89 - 20·51 25/05/89 STATIONS 96-105 COLLECTIONS

C 07·37 26/05/89 - 00·30 27/05/89 STATIONS 106-139
TIDAL CYCLE SAMPLING: DRIFTERS RELEASED.
42200 - 42249 09·53 26/05/89
42250 - 42299 15·43 26/05/89

-·-·- 07·33 27/05/89 - 22·27 27/05/89 STATIONS 140-165

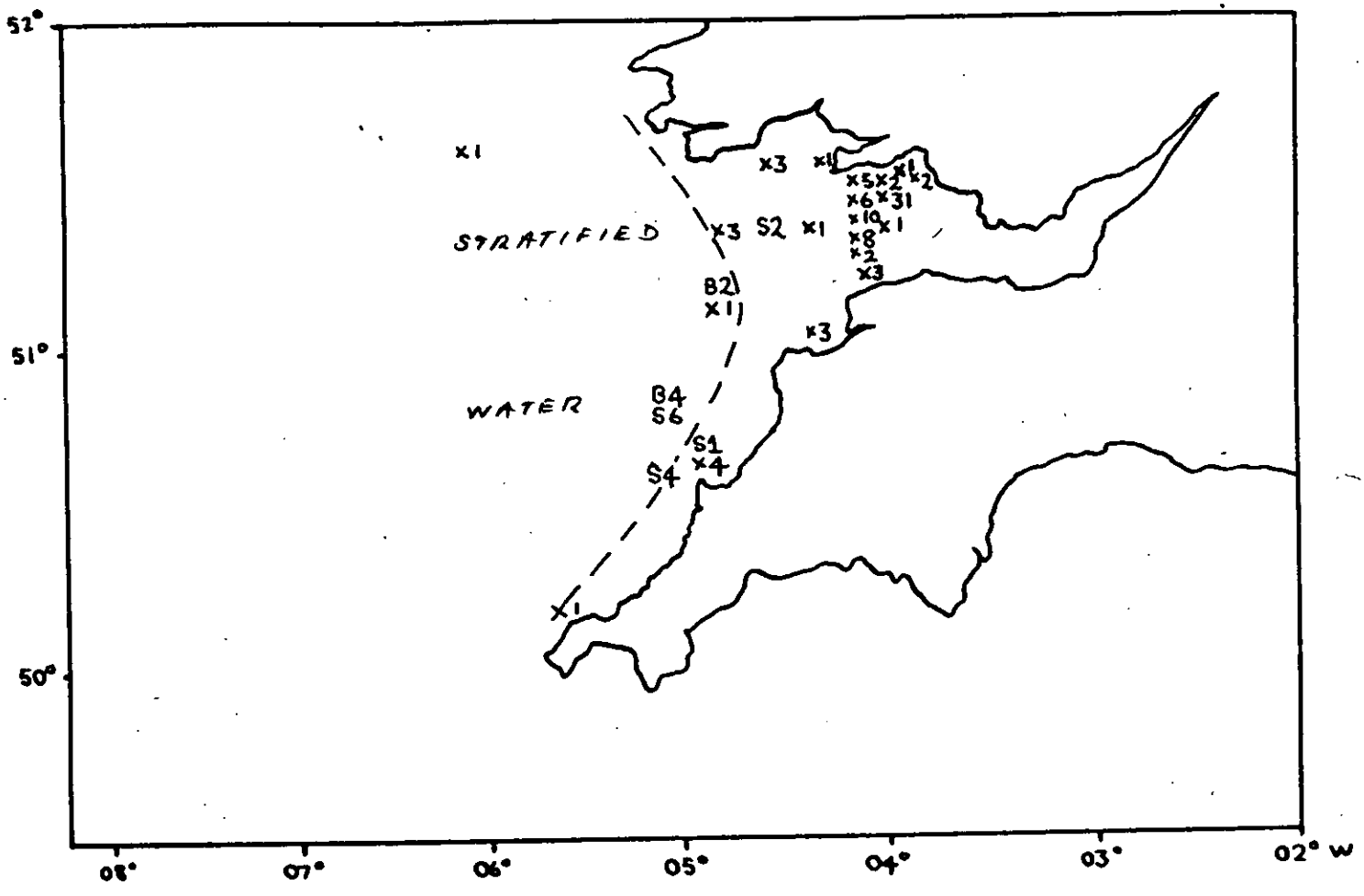
D 08·00 27/05/89 DRIFTERS RELEASED
42300 - 42349 08·00 27/05/89

E 07·35 28/05/89 - 14·01 28/05/89 STATIONS 166-175

F 17·39 28/05/89 - 22·30 28/05/89 STATIONS 176-186

Figure 2

CORYSTES 6/89
PRESENCE OF BASS EGGS AND LARVAE AND SOLE EGGS.



x SITE OF BASS LARVAL CAPTURE / Nō SPECIMENS CAPTURED

B SITE OF BASS EGG CAPTURE / Nō SPECIMENS CAPTURED

S SITE OF SOLE EGG CAPTURE / Nō SPECIMENS CAPTURED

SAMPLING EFFORT AND METHOD NOT CONSISTENT