Provisiona:: Not to be quoted without reference to the writer

R. V. TELLINA

Report for Cruise 6/1967

(The cruise was divided into three parts, a. b and c)

Aims

- The main aim of the cruise will be to study the recruitment of O-group plaice into Red Wharf Bay and their subsequent mortality. This will be done by regular sampling every few days on standard lines off the beach and parallel to the beach with the 4 metre beam trawl and push net.
- 2. A study of predation on O-group plaice by the collection of larger fish for stomach content analysis using the otter trawl and beach seine as well as the 4 metre beam trawl.
- 3. Tank experiments on predation and digestion rates (part a).
- Trials of air-lift apparatus for sampling benthos and plankton (a). 4.
- 5. Gear trials to assess the efficiency of the 4 metre and 2 metre beam trawls on the smallest 0-group fish (b and c).
- 6. Comparison of catches of metamorphosing post-larvae with the beam trawl and the sledge net towed by CLIONE (b) (see also programme of CLIONE Cruise 4).
- 7. To service the Plessey current meters off Red Wharf Bay as necessary.

Part (a)

Staff: C. T. Macer 19-25th May
M. E. Hurst 23-24th May

Duration: 19th-25th May

P/E

M. R. Vince) shore-based - diving

TELLINA left Falmouth on the morning of 17th May and, after sheltering briefly at Newlyn, arrived at Holyhead at 0800/19th where the scientific staff joined. She remained at Holyhead due to freshening westerly winds until the next day, when she steamed to Red Wharf Bay. Work proceeded here for the next five days and with almost continuous strong to gale S.W. winds, a further $1\frac{1}{2}$ days were lost. Work ended on 25th and the boat docked at Port Dinorwic on 26th.

Results

Aim 1. Standard parallel hauls in $1\frac{1}{2}$, 2 and 4 fathoms. (chart datum) and perpendicular hauls at transects 1, 3 and 5 were made regularly. In the latter tows, about sixty O-group plaice per haul were caught, the length range being Three later-marked I-group plaice were caught.

Aim 2. There was insufficient time to use the other trawl or the beach seine but some stomachs were examined. The most interesting discovery was the occurrence of a I-group plaice (9 cm) in the stomach of an angler fish (22 cm) and a I-group dab (9 cm) in the stomach of another angler (20 cm).

Aim 3. These experiments were hampered by the fact that it was very difficult to keep the O-group plaice alive, since they were so small and fragile. In the only successful experiment, Carcinus and Portunus readily ate dead plaice (10-15 mm) but none that were still alive were seen to be eaten.

Aim 1. Tests on the Barnett Air-lift apparatus showed it to be a very useful instrument for benthos sampling. A flow rate of 180 gallons/minute up the 3" pipe was achieved. It was not tried on plankton.

Additional aim. Tests with the new magnet-operated beam trawl speed and distance measurer were completely satisfactory.

Part (b)

Staff: J. D. Riley

Duration: 2nd-13th June

P. Walker M. Hurst

B. H. Holford) Part-time Shore-based
W. Blacknell)

Staff and crew travelled to North Wales on 1st June. From 2nd to 13th no time was lost because of bad weather and all the work was done in Red Wharf Bay. At the end of this part of the cruise TELLINA was berthed at Port Dinorwic in the early afternoon of 14th June.

Results

Aim 1. Three right angle tows on transects 1, 3 and 5 and three parallel tows were repeated three times during this part of the cruise.

Aim 5. Seven tows off the beach on transect 1 were made with up to five beam trawls in series. Analysis of catches in the series should show the proportion of fish not being caught due to inadequate disturbance by the tickler chains. Patch covers on the leading 4 metre beam trawl in three different poisitons on the 96 rows/yard belly and square caught several flatfish but these were largely metamorphosing dabs. Analysis and measuring of this naterial has been delayed because of the very large numbers of dabs in the bay (outnumbering plaice by at least ten to one).

Seven latex tagged plaice were caught from those released in September -October 1966.

Aim 6. Four parallel tows fishing with CLIONE were made, two against the tide and two with the tide: in one of each pair CLIONE was just outside TELLINA and, in the other just inside TELLINA. Catches consisted almost exclusively of dabs, but comparative efficiencies of the 4 metre beam trawl (TELLINA) and the sledge net (CLIONE) on the metamorphosing flatfish can be made.

J. D. Riley

Part (c)

Staff: J. Corlett

P. Walker

Duration: 21st-29th June

TELLINA left Port Dinorwic at 0815 on the 21st and after a short call at Menai Bridge, sailed to Red Wharf Bay. The pattern of subsequent work was that TELLINA sailed from Menai Bridge at about 0700 each day for Red Wharf Bay and returned in the afternoon or evening when the programme for the day was completed or work had to be stopped for bad weather. For most of the time the weather was good and we were able to work on each of the nine days. On three days we had to stop work early when the wind increased to strong or gale force in the afternoon, and sometimes we had to stop fishing because we had such large catches to sort and measure. It was not possible to count or measure the O-group plaice and dabs from all the hauls and they have been brought back to the laboratory. All the I-group and larger fish were counted and examined and most were measured on board.

On the afternoon of the 29th most of the heavy gear was loaded on to a lorry at Menai Bridge and TELLINA sailed to Caernaryon. She left Caernaryon at 0400 on the 30th and, after a good passage, reached Lowestoft on the afternoon of the 4th.

Results

Ain 1. Tows off the beach with the 4 metre beam trawl were made on Transects 1, 3 and 5 and on most occasions a series of tows was made out to about 10 fms. Transect 1 was sampled on 22nd, 26th and 29th, Transect 3 on 22nd and 25th and Transect 5 on 22nd, 25th and 27th. On Transects 2 and 4 series of parallel tows were made in different depths. On Transect 2 five tows were made on 21st

and three on 28th and on Transect 4 seven depths were sampled on 23rd. Push netting was done at low water on the 26th at Benllech (Transect 1). It is not possible yet to give any indication of the numbers of 0-group fish in the tows. O-group plaice were common in all tows in less than three fathoms and small, newly-metamorphosed dabs were abundant in most tows between 2 and 6 fathoms.

The maximum numbers of I-group plaice were caught in tows between about $4\frac{1}{2}$ and $7\frac{1}{2}$ fathoms. From the beam trawl and push-net catches 1,540 I-group plaice were examined and three of these were latex-marked fish from last September's releases.

Aim 2. The otter trawl was used on 24th and on the second haul in 7 fathoms (about $4\frac{1}{2}$ fth. C.D.) about 8 baskets of plaice and other fish were caught in forty minutes. Many of the plaice were I-group and II-group fish. From this haul stomachs from seven species of fish were preserved for subsequent examination. Some I-group fish from various depths inshore were also preserved.

Aim 5. On one occasion a series of two 4 metre beam trawls, two 2 metre beam trawls and a push net were towed off the beach at Benllech, one fastened behind the other. Some 0-group dabs and plaice were caught in all the nets but I-group fish were caught only in the two 4 metre nets: plaice - 81 in the first and 12 in the second and dabs - 67 and 4.

J. Corlett 6th July 1967

Seen in draft: W. B.

Initialled: A. J. L.

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