

Not to be quoted without reference to the writer

R. V. TELLINA

Report for Cruise 14/1968

Staff: C. N. Humphreys      Duration: 10.00 hrs 5 August -  
          J. de W. Ritchie (Student)      13.30 hrs 14 August

Aims

1. To continue fecundity studies within the ray survey area off the north Norfolk coast.
2. To obtain small live gadoids for tank experiments.

Narrative

TELLINA sailed from Lowestoft at 1000 hours on 5 August, and proceeded to the Wash, where she anchored in the lee of the north shore for the night. On the morning of the 6th only one haul was made in the Roaring Middle area before strong north-easterly winds made fishing impossible. This haul yielded only two large mature female rays and 120 small immature rays. After dodging for seven hours waiting for the tide the ship docked at Kings Lynn at 1645 hours.

On the 7th, 8th and 9th the ship remained in port with east to north-east winds of between force 5 and 8, making working conditions at sea impossible.

The ship sailed on the morning tide of the 10th and commenced work in the Lynn Well and Burnham Flats area, where eight hauls were made, producing only five mature rays. Owing to a poor weather forecast TELLINA again lay at Kings Lynn for the night and, the following morning, sailing was delayed until 0900 because of poor visibility. It was decided to work in the vicinity of the previous day's fishing and during the day slightly better results were obtained with a total of eight mature rays coming from six hauls; seven of these fish were females, five of which contained capsules.

After taking on fresh provisions for the remainder of the voyage TELLINA steamed to the east of the grounds already surveyed, where it was hoped that better catches might be obtained. Four hauls made in water of between 5 and 8 fathoms in the Bridgirdle Buoy, and Blakeney Overfalls area yielded only two mature female rays, neither of which contained any capsules or large ovarian eggs. After anchoring for the night, one further haul was made in shallow water, again producing one mature ray without capsules or large ovarian eggs.

It was therefore decided to try the deeper water in the vicinity of the Sheringham Shoal, where a further 5 hauls in water of mainly 11 to 14 fathoms produced only six mature rays, none of which was a female R. clavata.

Increasing north to north-west winds made anchoring in the Wash impossible. The ship therefore steamed south until a lee anchorage was found off Happisburgh. The following day, the 14th, it was decided to fish off the south Scroby Elbow, this being the only sheltered ground with strong north-north-westerly winds blowing. Here two hauls produced only one mature male R. clavata, but no small gadoids suitable for tank experiments. With the wind increasing and veering to a northerly direction it was decided to abandon fishing and return to Lowestoft.

TELLINA docked at 13.30 hours on 14th August.

## Results

A total of twenty-two mature rays were obtained from 25 hauls made in the Wash area; of these six were male and eleven were female R. clavata, and three male and two female R. nontagui.

Dissection revealed that of the eleven female R. clavata, five contained no capsules and of these three fish obtained from the more easterly grounds had greatly reduced ovaries, suggesting that termination of capsule production had already occurred. Of the remaining six fish, five contained hard capsules and one contained soft capsules. Both the female R. nontagui were found to contain hard capsules and a number of large ovarian eggs.

On all mature rays observations were made of length, width, and stomach content and in the case of females, in addition, measurements of cloaca and observations of state of ovaries and number of capsules found to be present were recorded.

A total of 25 vertebrae samples were taken together with 6 shell gland samples for further examination at the laboratory.

Blood samples were taken from eighteen mature rays and preserved in a solution of 1% merthiolate for Dr. R. M. E. Parkhouse of the National Institute for Medical Research.

Tests were made using a solution of methylene green to determine the presence of sperm in both male and female R. clavata. As no positive results were obtained, this work was abandoned.

Codend cover catches in the Wash contained large quantities of small whiting ranging from 15 to 25 cm with a modal peak of 20 cm. Examination of an otolith sample taken from these fish revealed that they were mainly from the 1967 year class.

In the vicinity of the Bridgirdle Buoy a catch of  $\frac{1}{2}$  basket of small clupeoids was taken in the codend cover, and a sample of these fish was preserved in spirit for routine analysis at the laboratory.

C. N. Humphreys  
15.8.68.

Seen in draft: W. B.

Initialled: H. A. C.

Distribution:

Basic list, plus the following:

Mr. Humphreys (2)  
Mr. Legget, Wells-on-Sea