

LIBRARY

R.V. ERNEST HOLT

Report on Cruise 8/68

Staff:

Duration:

- (a) T. D. Iles
P. Scholes
W. G. Parnell
G. J. Howlett
S. R. Jones
A. A. Johns
(Walker Log Company)
- 24 September - 2 October
(All times are B.S.T.)
- (b) T. D. Iles
P. G. W. Jones
P. Scholes
D. J. Ellett
G. J. Howlett
S. R. Jones
- 3 - 16 October
- (c) P. G. W. Jones
P. Scholes
D. J. Ellett
G. J. Howlett
S. R. Jones
- 17 - 22 October
- (d) C. E. Purdom
P. G. W. Jones
D. J. Ellett
- 22 October

Aims

- (a) (i) Tin Towner herring larval survey - Shetland (ICES programme)
(ii) Collection of material for genetic studies.
(iii) Testing of Chloride and Ramsay freezing point determination apparatus under sea conditions.
- (b) (i) Comparative fishing on Rockall Bank (with R.V. EXPLORER, Aberdeen)
(ii) Hydrography of Rockall Bank.
(iii) Testing of Chloride and freezing point determination apparatus under sea condition (cont.)
- (c) Tin-towner herring larval survey - Whitby.
- (d) Collection of live plaice for breeding experiments.

/Narrative

Narrative (All times are B.S.T.)

The ERNEST HOLT left Grimsby at 18.57 hours, 24 September and on 25 September three hauls were made with the French Trawl, in the vicinity of $55^{\circ}51\frac{1}{2}'N$ $0^{\circ}18'E$ for a total of $45\frac{1}{2}$ baskets of mixed fish including cod, haddock and mackerel. Blood samples were taken. The ship steamed north at 17.10 hours, 25 September stopping off Aberdeen at 04.00 hours, 26 September to put off Mr. Johns in the Pilot Boat. The first T.T.N. station was reached at $59^{\circ}57\frac{1}{2}'N$ $0^{\circ}15'E$ at 1900 hours, 26 September and the grid was worked until late the next day when deteriorating conditions made sampling impossible. After dodging for a few hours the ERNEST HOLT made the 20 miles to anchorage in Lerwick harbour where she remained until the morning of 29 September. Stations were resumed at 08.40 hours and the Shetland grid completed by late on 1 October, there being one further break forced by bad conditions.

Stornoway harbour was entered on 2 October when the scientific staff was changed.

R.V. EXPLORER docked at Stornoway at 17.00 hours 2 October and a meeting of N.I.C's. took place.

On 3 October the ERNEST HOLT steamed towards Rockall reaching the first hydrographic station at $58.00N$ $11^{\circ}20'W$ by 05.57 hours, 4 October. Sampling continued until late on 8 October, a long steam between two stations affording the opportunity to shoot the trawl gear and relay the warp on the winch drum on 7 October. Late on 8 October wind and sea conditions were bad enough to halt sampling and the whole of 9 October was spent dodging. Conditions continued to be adverse and on 10 and 11 October stations were sampled only intermittently; by 12 October storm force winds had developed and the ship dodged until the morning of the next day. Sampling was then resumed and the basic grid of stations was completed by 19.48 hours, 14 October. During this period daily contact with the EXPLORER was maintained but because of the weather and the subsequent lost time, as well as engine trouble in the EXPLORER itself the comparative fishing exercise was abandoned by mutual agreement.

The ship steamed towards the Pentlands stopping on the 22.05 hours, 15 October, for two hauls with the Granton in position $58^{\circ}41'N$ $4^{\circ}00'W$. A total of 40 baskets of mixed fish including cod, haddock and young hake were caught and cod blood samples were taken for Mr. Scholes. Bottom temperature observations were made at the trawl stations. The ship continued towards Aberdeen and berthed there at 1500 hours 11 October.

The ship departed from Aberdeen at 0700 hours 17 October and commenced the herring larval survey by tin tow net off Whitby at 2058 hours the same day. The grid was completed at 1850 hours 21 October in good weather conditions. The ship then made for Yarmouth Roads and scientific staff were exchanged by the Pilot boat at 0800 hours 22 October.

The ship left Yarmouth Roads for Smiths Knoll at 0900 hours. Trawling began at 11.15 hours and finished at 16.00 hours (when sufficient plaice for hatchery use had been obtained). Three short tows were made with the tin tow net to obtain live copepods for the laboratory, after which, the ship sailed for Yarmouth arriving at midnight.

/Results

Results

1. Herring Larval Surveys.

The full ICES Shetland grid was sampled; larvae did not appear to be plentiful.

Few larvae were observed in the samples taken in the Whitby area - even though the fine weather made it possible to sample over a wide area.

2. Hydrography.

61 hydrographic series stations were worked over 7 sections radiating from Rockall Bank and over another section crossing George Bligh Bank. Bottom temperatures of about 9°C were recorded on Rockall Bank both along the northern end and at 56° to 56°30'N towards its southern extension. This represents an uplift of the 9°C isotherm by some 600 m compared to its level in the Rockall channel and by some 300-400 m compared to its depth in the water west of the Bank. Over the George Bligh Bank the isotherm rose by 200-300 m compared to levels east and west in deeper water.

Bathythermograph sections were made at 50 stations to indicate a shallower thermocline above the Bank than over deep water. Water bottle observations at 10 m depth intervals in the vicinity of the bottom at a number of stations were made to investigate the possibility of a cascading effect.

3. Testing the Chloride determination and Ramsay-Brown freezing point depression apparatus.

No snags or difficulties were experienced in using the Chloride meter under sea conditions.

It was difficult to read the Beckmann thermometer in the Ramsay-Brown machine when the ship was rolling badly, (conditions frequently enjoyed on this cruise), because of "pumping" of the mercury column. However, when the ship was manoeuvred to give the most stable working platform accurate observations could be made while under way.

Blood plasmas of 13 cod, 3 from one haul (Bottom temperature 7°C) and 10 from another (Temperature 12°C) were analysed.

Haematocrit determinations were made on a sample from this second haul.

4. Genetic Studies

A small sample of good quality mackerel plasma was taken for analysis of esterase polymorphism.

5. Comparative Fishing on Rockall

This was not realised.

6. Plaice collection

A collection of some 100 live plaice was brought back to the laboratory. They have been transferred to holding tanks and are reported to be in fine condition.

/7.

7. Miscellaneous

The Walker-Log was tested satisfactorily.

Meteorological observations were made when the ship was sufficiently far from shore.

A number of bathythermograph messages were sent to the laboratory.

Live copepods were collected for the laboratory during the latter part of the cruise.

T. D. Iles
24.10.68.

Seen in draft: E. A. B.
G. W. A.

Initialled: A. J. L.

Distribution:

Basic list, plus the following:

Mr. Iles
Mr. Scholes
Mr. Parnell
Mr. Howlett
Mr. S. Jones
Mr. Johns
Dr. P. Jones
Mr. Ellett
Dr. Purdom