

MINISTRY OF AGRICULTURE, FISHERIES AND FOOD
TORRY RESEARCH STATION, ABERDEEN, SCOTLAND
FISHERIES LABORATORY, LOWESTOFT, SUFFOLK, ENGLAND

1980 RESEARCH VESSEL PROGRAMME

REPORT: RV G A REAY: CRUISE 2

(PROVISIONAL: Not to be quoted without prior reference to the author)

STAFF:

C T Macer)
C G Brown) Lowestoft
R A Bray, British Museum
P Wilson, WFA to 18 March
K J Whittle)
J D M Smith) TRS, 18-23 March
A Johnson)

DURATION:

Left Aberdeen 1500 h, 28 February

Arrived Great Yarmouth 2100 h, 29 February

Left Great Yarmouth 2100 h, 1 March

Arrived Aberdeen 0715 h, 23 March

(All times are Greenwich Mean Time)

LOCALITY:

Bay of Biscay, Celtic Sea, West of Ireland

AIMS:

1. To conduct an echo/fishing survey for horse mackerel along the shelf edge.
2. To collect biological samples of horse mackerel.
3. To work an expendable bathythermograph (XBT) section through the Shamrock Canyon.
4. To collect fish parasites.
5. Equipment trials.
6. Processing trials.
7. To collect samples of mackerel muscle for enzyme analysis.

NARRATIVE:

After loading equipment and scientific staff at Great Yarmouth, G. A. REAY steamed south and into the English Channel. The start of the echo grid at 49°00'N 10°30'W was reached at 0830 h, 4 March and the survey proceeded in a south-easterly direction to the start of the XBT section at 48°06'N 07°18'W (Shamrock Canyon),

which was reached at 0840 h, 5 March. Small bottom traces on this section of grid were identified with the pelagic trawl as blue whiting.

The XBT section was completed at 2100 h, 5 March and the ship steamed towards La Chapelle Bank in deteriorating weather to resume the survey grid. On arrival at 0800 h, 6 March, work was precluded by a westerly gale and dodging commenced. At 2100 h, with a forecast of continuing NW gales, it was decided to run south towards the southern limit of the grid at 44°00'N 02°00'W, and this was reached at 1800 h, 7 March, when dodging recommenced.

The survey was resumed at 0830 h, 9 March and proceeded northwards. Typical scad traces were located in 70-80 fms from 44°30'N to 44°50'N and 4 pelagic trawl shots produced 32, 6, 11 and 4½ baskets of scad, sometimes mixed with mackerel, pilchard and blue whiting. On 10 March, the sector from 44°57'N to 46°41'N was covered and this produced one dense trace which yielded 10 baskets of mixed pilchards and small mackerel. The area around La Chapelle bank was surveyed on 11 and 12 March. Moderate traces about 40' ESE of the Bank yielded 10 baskets of juvenile scad, whilst on the bank a tow produced 15 baskets of blue whiting.

By 1700 h on 12 March the weather had deteriorated and since better weather was forecast to the south it was decided to return to the Gironde area. Surveying recommenced at 0800 h, 13 March and a shot on some light traces yielded a few small scad, before freshening winds necessitated dodging. With an improvement forecast to the north, the ship dodged, then steamed north-westwards and the survey was resumed at 0730 h, 15 March at 49°00'N 10°30'W. Surveying in a north-westerly direction, a dense scad-like trace was soon located in 100 fm on a steep shelf slope. On turning and resurveying, however, this trace could not be relocated. The shelf edge to the west of Ireland as far as 52°30'N was examined on 15 and 16 March but no further significant traces were found, and the ship set course for Falmouth at 1530 h, 16 March, arriving at 1000 h, 18 March.

Having embarked the 3 Torry staff, and disembarked Mr Wilson, by pilot boat, the vessel proceeded to a position off Start Point to commence surveying at 1700 h, 18 March. A haul with the pelagic trawl on numerous small midwater and bottom plumes 10' SE of Start Point produced 5 baskets of poor cod and 3 baskets of herring. A shot was then made at 2200 h 16' south of Start Point on a large trace which was being fished by the purser GRIMSBY LADY. This yielded 30 baskets of predominantly scad, but with an admixture of other species, mainly herring. A second shot, which had to be terminated prematurely due to net damage from a wreck, resulted in 18 baskets of a similar mixture, but with a greater proportion of herring.

The survey grid was resumed at 0100 h, 19 March but with freshening easterly winds it was terminated at 0900 h and shelter sought in Bigbury Bay, where a replacement pelagic net was rigged. During this survey, extensive traces had been located 11' S x E and 16' SW of Start Point. In company with several other ships the vessel remained sheltering from ENE/NE gales until 2300 h, 20 March when the return passage was commenced, Messrs Macer, Brown and Bray having been disembarked by pilot boat at Plymouth at 1600 h.

RESULTS:

1. The shelf edge at depths between about 75 and 120 fathoms was echo-surveyed with the Kelvin Hughes MS44 sounder from 44°00'N to 52°30'N. Horse mackerel traces were identified at two locations: 44°30'N to 44°50'N and 40' ESE of La Chapelle bank. The latter ground produced only non-commercial juvenile fish. In the former area, the traces were fairly widespread but not particularly dense. Four pelagic hauls were made, one in daylight which produced the best catch of about 1 tonne for a few minutes in the trace, and 3 in darkness which produced between 135 and 330kg per shot. (The pelagic net used was smaller than the Engel nets used by commercial

vessels.) Once found, the fish were often difficult to relocate, and net avoidance during a tow was also a problem. A trace which was thought to be horse mackerel was also located near the Little Sole Bank, but this was on the edge of precipitous cliff edge and probably unfishable.

The Start Point survey was curtailed by bad weather but in the small area surveyed fish traces were abundant and 3 dense and extensive traces were located. One of these at least was predominantly horse mackerel and was being fished by a purser. Our best catch was 0.9 tonne for 8 minutes in the trace. The purser informed us that his catches were predominantly of horse mackerel destined for fishmeal.

2. Horse mackerel were measured from all hauls where caught and samples frozen. Length details as follows:-

| | |
|-------------|---------------------------------|
| Biscay | Mode 29 cm, range 15-38 cm |
| La Chapelle | Modes 13, 18 cm, range 11-23 cm |
| Start Point | Mode 26 cm, range 22-36 cm |

3. The full section of 15 XBT casts was completed through the Shamrock Canyon.

4. Observations on parasites were made on a variety of species by Dr Bray.

5. Mr Wilson conducted experiments on the angles of inclination required to transport horse mackerel along chutes made of various metals, under varying conditions. TRS staff ran trials with a grading machine.

6. TRS staff froze horse mackerel after storage in ice and in chilled seawater to investigate the effect on subsequent processing.

7. A total of 55 muscle samples were frozen in liquid nitrogen from mackerel caught in the Bay of Biscay.

8. Samples of blue whiting and herring were frozen.

C T Macer
11 April 1980

SEEN INDDRAFT: WEC

INITIALLED: AJL

DISTRIBUTION:

Basic List, plus
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C G Brown
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J D M Smith) TRS
A Johnson)
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