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R. V. ERNEST HOLT

Report for Cruise 5/1968

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Duration: 1824 hours, 30 May -
0050 hours, 20 June.

All times are G.M.T.

Aims

1. To tag cod in the "West of Scotland" area, from Muckle Flugga to Northern Ireland.
2. To tag other gadoids, particularly coalfish and haddock.
3. To measure the relative abundance of blue whiting and hake when caught together.
4. To carry out handling trials of the modified Boothbay net and to calibrate for warp length/depth/ speed ratios.
5. To continue underwater camera trials with cameras mounted on the trawl headline.
6. To try to catch hake after dark with the Engels trawl.
7. To obtain blood samples for Dr. Jamieson and cod flesh samples for Dr. Walker.

Narrative

The ship left Grimsby at 1824 hours, 30 May and steamed to the area off the Longstone Light where dead fish had been reported earlier in the week. Plankton samples were taken with a fine silk net and water samples from surface and bottom were obtained with Nansen bottles. Visibility was poor, but there were no signs of dead fish or seabirds in the area. Course was then set for Aberdeen where an engineer from Walker Log Co. was put ashore via the pilot boat at 1744 hours, 31 May. During the afternoon of 1 June handling trials of the modified Boothbay net were carried out in deep water east of Shetland. Next morning fishing was started northwest of Muckle Flugga with four hauls in depths varying from 220 to 320 fathoms, but only one hake was caught. On 3 and 4 June, Otter Bank, Papa Bank and Solan Bank were fished, but catches were light and few cod were caught so course was set for grounds south of Sulisker where Fleetwood trawlers had been catching cod some days earlier. Before the grounds were reached the wind increased and southwesterly gales were forecast. With the increasing swell fishing would have been impossible so sheltered grounds in the North Minch were fished instead until the wind moderated on 7 June. Only small numbers of taggable cod and coalfish were caught in the Minch, but some large hauls of taggable haddock were made off Broad Bay and Tolsta Head. The Butt of Lewis grounds were fished on 7 June in company with seven Fleetwood trawlers. The skipper of the CAPTAIN RIOU (Lo72) gave us some very useful information on the fishing grounds in this area. Again catches were very light, so during the night an echo survey was made around the edge of Sulisker Bank on the way to North Rona. Near North Rona fishing was better but the ground was difficult to work and the gear was damaged on five out of fifteen tows. Catches were very variable in quantity and composition: cod, coalfish and haddock in turn being the most abundant fish. Up to 40 baskets per hour of cod were caught. In two days 461 cod, 14 haddock and 80 coalfish were tagged off North Rona.

Fuel and water were taken on at Stornoway on 10 June, blood samples were sent by air to Dr. Jamieson and the plankton and water samples from the Longstones were sent to Birkbeck College, London. Fishing was resumed on 11 June north of the Flannan Islands and the next four days were spent fishing, with echo surveys during the night, working south from the Flannans to the Stanton Banks. Very few cod were caught on the Barra Head grounds and on Stanton Banks. There was no time to extend the survey further south, so the ship returned to the Flannan Islands to fish there on 15 June. On 16 June an attempt to fish on echo traces observed during the steam from Barra Head resulted in severe damage to the trawl, so the remainder of that day was spent fishing for hake on deep water grounds northwest of the Flannans (these had first been surveyed by a research cruise in 1927). After leaving the Flannan Islands, one more day was spent fishing near North Rona where the cod fishing was still good and 441 more cod were tagged. Fishing there was finished during the night of 17/18 June. On the passage to Grimsby two more handling trials were made with the Boothbay net.

Except for the three days when gales restricted fishing to the comparatively sheltered waters of the North Minch, the weather during the cruise was excellent apart from fog, and no working time was lost. After a calm passage the ship reached the Humber at 2000 hours, 19 June and docked at 0050 hours, 20 June.

Results

Aims 1 and 2

1200 cod, 373 haddock and 199 coalfish were tagged - a total of 1772 fish. They were distributed as follows:-

	<u>Cod</u>	<u>Haddock</u>	<u>Coalfish</u>
Otter, Papa and Solan Banks	20	-	17
North Minch and Butt of Lewis	54	359	38
North Rona	902	14	90
Flannan Islands	197	-	50
Stanton Banks and Barra Head	27	-	4

At North Rona all the gadoid fish were feeding heavily on sand eels and the cod were in excellent condition for tagging. Elsewhere feeding was not so heavy and the fish were noticeably slimmer than those from North Rona.

Trawlers fishing at North Rona reported the recapture of several tagged fish.

Aims 3 and 6

Hake were caught in very small numbers even in deep water so there was no opportunity to attempt these aims.

Aim. 4

The modified Boothbay net was tried on three occasions. At first it was very unstable because the depressor and the tube of the frame were sealed and thus were too light in the water. Holes were drilled in the depressor so that it flooded and heavy weights were attached to the bottom of the frame: this made it much more stable but it appeared to tow with a marked tilt to starboard. This tilt probably contributed to the difficulty experienced in aligning the receiver and transmitter of the acoustic link. Some warp length/depth ratios were obtained at speeds of 3 and 4 knots, but at higher speeds and longer warp lengths no reliable depth readings were obtained. Shooting and hauling presented no problem, but a small gallows sheave is required to avoid damage to the bridles.

Aim 5

An underwater camera attached to the headline was used at 18 stations. One camera was damaged when the flash window cracked at a depth of 250 fathoms. All the films processed on board gave good pictures of the sea bed and fish under the headline. Detailed examination must await the printing of the monochrome films and processing of the colour films.

Aim 7

Blood samples from 191 cod and 18 hake were obtained for Dr. Jamieson and flesh samples from 30 cod were deep frozen for Dr. Walker.

Miscellaneous

All hake were measured and otolithed, and counts of fin rays and vertebrae were made. Flesh samples from 20 hake were deep frozen for the Torry Laboratory for comparison with the South African hake from KIRKELLA. 20 flesh samples from cod were also taken for the Torry Laboratory.

Spurdogs were caught on all grounds often in considerable quantities except in the deep water hauls. Two samples were measured. Large females occurred frequently.

Included in the catches off North Rona was a 1939/45 mine with its anchor which caused considerable damage to the trawl and some consternation until it was safely returned to the sea.

Meteorological observations were made for the short period when the ship was working more than 40 miles from land.

R. W. Blacker

20/6/68

Seen in draft: EAB

Initialed: AJL

Distribution:-

Basic list plus the following:-

R. W. Blacker
B. C. Bedford
M. Macdonald
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C. L. Whiting
L. Villegas