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In confidence: Not to be quoted without reference
to the laboratory.

CRUISE REPORT

F.R.S. "EXPLORER"

27th March-17th April, 1966

Narrative

"Explorer" sailed from Aberdeen on 27th March but encountered bad weather and was forced to shelter before starting work on the 30th. Dr. Steele joined the ship at Stavanger on the 31st and a combined programme of hydrographic stations and parachute-drogue tracking was carried out until the 8th April when "Explorer" returned to Stavanger, where Dr. Steele, Mr. Martin and Mr. Whyte left the ship.

Saville, Bruce and Sangolt joined "Explorer" in Stavanger on the evening of the 9th April, the ship sailing on the morning of the following day to Utsøra Patch where good herring traces and a fleet of Russian drifters had been observed in the earlier part of the cruise. As no Norwegian purse-seiners were expected in the area until the evening of the 12th, because of the Easter holiday, it was decided to spend the intervening period sampling the stock by herring trawl. In all, six hauls were done in daylight in this area from which catches of herring varied from nil to 475 per hour's trawling. Catches of other fish were also light with mackerel, saithe and M. poutassou being the most numerous species. One specimen of Macrurus rupestris and one specimen of Chimaera monstrosa were caught and preserved for laboratory examination.

One Norwegian purse seiner appeared on the grounds on the evening of the 11th and made a good catch from which herring were obtained for tagging. Thereafter the fleet built up to about 30 vessels but catches were generally very light. This was largely due to the fact that the herring were not rising to a level where they could be fished by purse-seine. Heavy traces were fairly widely spread over the area but rarely rose above 50 fathoms even at night. As far as we could judge from the nets we saw being hauled the Russian drifters were not having productive fishing either during the time we were in the area.

In spite of this a total of 5,157 herring were tagged and released consisting of 3,323 Scottish Combination Tags, 1,640 Internal Tags and 194 Spaghetti tags. The fish tagged appeared to be in good condition and this method of getting herring for tagging appears highly satisfactory under good weather conditions but would be impracticable otherwise. In addition to the samples caught by trawl two samples of purse-seine caught herring were also worked up. The samples from the two methods of capture agreed in showing a population with a very wide size range from 20-35 cm., bimodal with modes at about 23 cm. and 30 cm., with nearly equal numbers around each mode. The fish were predominantly recovering spents although a small proportion of ripe fish were taken. The meristic character data would suggest that autumn spawned fish were the dominant constituent in each modal group.

The success of this part of the cruise owed much to the experience and enthusiasm of Mr. Sangolt and to the skill with which Captain Bruce handled the ship and the patience he showed under what were sometimes rather trying circumstances.

Results

I Hydrography: Ten parachute-drogues were released at various depths in the Norwegian Deep along Lat. 59°N. Current strengths at 25 m were generally less than 0.3 knots in a north-easterly direction. A south-going

current of about the same magnitude was found at 200 m on the western side of the deeps. The interpretation of results was complicated by the presence offshore of an inertial ellipse with amplitudes of 1.0 and 0.7 miles on the major and minor axis. Inshore this degenerated into a linear oscillation.

J.H. STEELE
A. SAVILLE
16th May, 1966