

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

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## CRUISE REPORT

FRV "GOLDSEEKER"

5 - 20 November 1969

### NARRATIVE:

"Goldseeker" was prevented by gales from leaving Buckie until 08.00 hrs on 5 November, when she made a passage to the West Coast via the Caledonian Canal. Persistent gales resulted in her arrival at Tarbert being delayed until 10 November, when she was joined by the scientific staff.

On the 11 November, "Goldseeker" collaborated with the submersible "Pisces" and her parent ship "Vickers Venturer" off Clunaig Bay. "Goldseeker" towed dredges and beam trawls on a queen bed, and Messrs Mason & Hemmings observed the gear directly from "Pisces".

The remainder of the cruise was devoted to dredging and beam trawling on known scallop and queen grounds, though persistent strong and gale force westerly winds limited the amount of diving, which was confined to the sheltered Clunaig Bay. Four feet standard and sledge dredges and 8 ft beam trawls were used.

The cruise ended at Ardrishaig at 09.40 hrs on 20 November.

### Scallop and queen fishing

Scallops (Pecten maximus) were scarce in all the places sampled, off Clunaig Bay, north Arran, Inchmarnock and in Loch Fyne. The best catch totalled only nine in a 15 min. haul off the Cock of Arran. Eight-ring scallops predominated, accounting for more than half the scallops caught.

Queens (Chlamys opercularis) were abundant off Pirnmill (Arran) and Clunaig Bay. The bed off Pirnmill was being exploited commercially by a fleet of boats based on Tarbert. Two-ring queens constituted 71% and three-ring queens 23% of the beam-trawl catch.

Off Clunaig Bay, the queens were too small to form the basis of a fishery, 51% having two rings and 44% one ring. Catches were good, up to two baskets (ca 2000 queens) per 10 min. beam-trawl haul. The mean size of the 1+ queens was 49 mm, and since these should achieve commercial size during 1970 there are prospects of a good fishery in the Clunaig Bay area next winter.

As on the previous cruise, better catches of queens were obtained with the beam trawl than with the standard scallop dredge.

### Underwater observations

The first use of "Pisces" to observe fishing gear in action, by attaching the submersible to the gear, demonstrated its potential usefulness in gear research.

During diving operations use was made of diver-to-surface communication equipment which made it possible to tape record a commentary on the performance of the gear. All the observations were on a sandy bottom, and confirmed earlier observations that the mouth of the traditional toothed dredge soon became blocked. That this is not due to currents caused by the netting bag was shown by removing the netting, when blockage still occurred.

Observations showed that, while the standard dredge and beam trawl operated successfully with an amount of wire warp equal to 3x the depth, the sledge dredge required more warp, approximately 4½x the depth proving satisfactory.

The reaction of the queen to approaching objects was seen to account for the greater success of the beam trawl in catching queens. Whereas the scallop tends to close its shell and thus sink into its recess, the queen reacts by swimming violently upwards and away from a dredge or trawl when it has approached within 1-2 feet. Dense clouds of queens were seen escaping in this way. Having a greater height (the beam was 17 in. above the runner compared with the 9 in. height of the back of the standard dredge), the beam trawl captured more of the fleeing queens. Even so, many escaped above the beam and a higher beam might well result in even better performance.

James Mason  
28.1.70