

MINISTRY OF AGRICULTURE, FISHERIES AND FOOD
FISHERIES LABORATORY, LOWESTOFT, SUFFOLK, ENGLAND

1971 RESEARCH VESSEL PROGRAMME

REPORT: R V CORELLA: CRUISE 11

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

STAFF: A R Margetts
 J P Bridger
 B C Mumford
 B H Holford) 1st Part
 M R Vince)
 E Lambe)
 P M Hudson 2nd Part

DURATION: 21 June - 3 July

LOCALITY: English Channel

- AIMS:
1. To study the effect of a 10 m beam trawl fitted with tickler chains both on the sea bed itself and on the benthos.
 2. To collect some large live flatfish for Dr Greer Walker.
 3. To collect live plankton for Mrs Thompson.

NARRATIVE:

CORELLA left Lowestoft at 1900 hrs 21 June. Trial dives were made on the fishing grounds off Newhaven on 22 June. Conditions there were not entirely satisfactory so we continued westwards and worked beam-trawling and diving on 23 and 24 June at the east end of Lyme Bay. This work was continued under a lee in Start Bay on 25 June. On 26 June weather conditions restricted work to inside Tor Bay where eventually a combination of wind and yacht racing curtailed operations. Observations were made and cine and still photographs were taken by the divers both swimming around and especially behind the trawl and also after diving beside marks dropped directly in the wake of the trawl. Particular attention was paid to comparing the trawled ground with that to either side of it. In Tor Bay the divers also took down a hand-held television camera to show monitor watchers what the trawl track on soft ground looked like.

CORELLA berthed in Brixham at 1830 hrs 26 June. The diving team of Messrs Holford, Vince and Lambe left the ship when Mr Hudson joined on 27 June.

CORELLA left Brixham at 0600 hrs 28 June. Beam trawl hauls and underwater television observations were made near Teignmouth during 28 and 29 June, in Start Bay on 30 June, and off Brighton on 1 July. The technique used was to tow the trawl across the tide, drop two buoy marks from the rubber boat spaced apart in the wake of the trawl, and then anchor the ship so that, with the television suspended near the sea-bed, she dropped down-tide between the marks. The Skerries Bank off Start Point and rocky untrawlable ground off Tor Bay and off Brighton were also inspected by television. Conical dredge bottom samples were taken on each ground trawled.

After steaming overnight through thick fog, otter trawl hauls were made at Smith's Knoll on 2 July to obtain large live fish for Dr Greer Walker's use in acoustic tag experiments. The seabed there was seen on underwater television. Live plankton was collected near Smith's Knoll on 2 July.

CORELLA returned to Lowestoft at 0630 hrs 3 July.

RESULTS:

1. The grounds worked included mud, fine sand, coarse sand and shell, and mixtures of these. Water clarity was reasonably good for the English Channel and we were able to arrange the programme to suit the weather so as always to have calm conditions and be able to work on every day. The trawl used was a 9.5 m steel beam trawl fitted with a rubber disc groundrope and at first three and later four 16 mm tickler chains. Trawling speed was mostly about 2.5 knots, but slower when the divers were around the trawl.

On the grounds worked with the divers, about 10-20 minutes after the trawl had passed they were always able to discern its track, sometimes only just and sometimes clearly even to the extent of distinguishing where the trawl heads and tickler chains had been. The nature of the trawl tracks seemed to be associated with the type of sea-bed, both as to its composition and as to its conformation. On many occasions it was seen that tube worms re-emerged and benthic animals such as whelks and hermit crabs were quickly on the move again in the trawled track.

When underwater television was used, usually an hour or more elapsed between the trawling and the observation of the trawled area. Even so, on some grounds the tracks of trawl heads and chains were clearly seen but on other grounds, notably to the outside of Start Bay and off Brighton, the tracks were then indistinguishable or only very slightly different from the neighbouring ground. Off Brighton, where there was coarse sand, silt and broken shell and a brisk tide, the apparent effect of the trawl on the bottom was something like that of hosing down sandy soil. At Smith's Knoll in a strong tide, the sandy bottom seen close to by television resembled a miniature desert in a sand-storm.

An attempted comparison of the effectiveness of two different closed-circuit television systems was rendered impossible when one camera developed a fault.

2. Samples of entire plaice and mackerel were obtained from Start Bay for Dr Portman's (Burnham-on-Crouch laboratory) pollution studies. No whiting were caught.

3. Plankton collected near Smith's Knoll on the evening of 2 July was returned alive to the laboratory for Mrs Thompson.

4. Twenty-seven fish food packs of flatfish and large gadoids were brought to the laboratory for the aquaria.

5. Beam trawl hauls off Brighton and otter trawl hauls at Smith's Knoll yielded only very few large plaice and none of these was in perfect condition; the best were brought back alive to Lowestoft for Dr Greer Walker.

A R Margetts
6 July 1971

SEEN IN DRAFT: W Craig (Master)
C Snowling (Fishing Skipper)

INITIALLED: H A C

DISTRIBUTION:

Basic list	Mr Vince
Mr Margetts	Mr Lamb
Mr Bridger	Mr Hudson
Mr Mumford	Southern Sea Fisheries Cttee
Mr Holford	Sussex " " "
	Devon " " "