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

1981 RESEARCH VESSEL PROGRAMME

REPORT: RV CORELLA: CRUISE 1
(PROVISIONAL: Not to be quoted without prior reference to the author)

STAFF:

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DURATION:

Left Lowestoft 0940 h, 6 January

Arrived Lowestoft 0800 h, 19 January

All times are Greenwich Mean Time

LOCALITY:

Southern Bight of the North Sea

AIMS:

To investigate the spawning behaviour of plaice in the Southern Bight by bottom and/or midwater trawling.

NARRATIVE

CORELLA sailed at 0940 h, 6 January and steamed to a position south west of the Brown Ridge, where possible bottom tows were investigated with the echosounder. Fishing began the following morning and continued until 2000 h, 11 January, with an interruption for bad weather during the afternoon and evening of 10 January. CORELLA fished an otter trawl with a 36.6 m footrope, 36 cm diameter rubber bobbins and a blinder in the 70 mm mesh cod end. Short strops (3 m) were used in place of bridles. Tickler chains - midwing, wing-end and bunt - were added progressively once it was found that the gear could be towed without damage over the large sand ridges (height 6-8 m; wavelength 150-200 m) in the area.

On conclusion of the bottom trawling CORELLA steamed overnight to IJmuiden to take on freshwater and change to midwater gear. But persistent gales kept her storm-bound in IJmuiden until 0950 h, 16 January. CORELLA then steamed back to the working area but only one shot was possible with the midwater trawl before deteriorating weather forced her to dodge. Work resumed at 1000 h, 17 January and continued until 2100 h, 18 January. CORELLA then left the working area, arriving in Lowestoft early the following morning.

RESULTS

1. Bottom trawling. CORELLA worked 17 stations in the area of plaice spawning delimited by RV CIROLANA. Hauls were generally of 1 to 1½ h duration. Four hauls were made on northgoing tides, 8 on southgoing tides and 5 over periods of slack-water. Nine hauls were made at night and 8 by day. A total of 2095 plaice was caught, 1237 by night and 858 by day giving a night to day ratio of 1.4:1.

Sex ratios. The overall sex ratio was 3:1 in favour of the males but a very large proportion (89%) of the females were immature. Among the mature fish the sex ratio was 22:1 in favour of the males; among the immatures it was 1.7:1 in favour of the females.

Maturity stages. Most of the male fish (77%) were running ripe in maturity Stage VI, a small number (6%) were maturing (Stages II-V) and there was one spent fish. Among the females 11% were maturing; there were three spents (Stage VII) but none was running ripe.

2. Midwater trawling. CORELLA made 5 valid midwater tows, each of approximately 3 h duration extending over the period of maximum tidal speed. A further short haul was made during a low water slack (LWS) immediately after sunset. The gape of the net was approximately 10 m and the gear was fished with the foot rope 4-8 m above the bottom, as allowed by the sandridges.

A total of 40 plaice was caught in midwater of which 2 were caught by day and 38 by night. The sex ratios and maturity stages of these fish were dramatically different from those caught with the bottom trawl. The sex ratio was 2.3:1 overall in favour of the females and 2.4:1 among the mature fish, also in favour of the females. All of the mature males were running ripe in maturity Stage VI. Five of the 22 females were also running and the remaining 17 were maturing, most in Stage V and very close to spawning.

G P Arnold

2 February 1981

SEEN IN DRAFT: GS
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