

Herring Investigations on the South and East Coasts of

Ireland - 1961/62.

Samples of adult herrings from Dunmore East and Rosslare were examined throughout the season. Beach-seining for whitebait (immature or small herring sometimes mixed with other species) was continued on the south and east coasts from July to October 1961, the effort being concentrated on the east coast from Rosslare Strand, Co. Wexford, to Carlingford Lough, Co. Louth. Commencing in January the exploratory vessel "Cú Feasa" carried out 3 monthly larval tin-tow net surveys using a modified Gulf III High Speed Tow Net. These surveys extended, as in the previous season, from the Fastnet, Co. Cork, to Cahore Point, Co. Wexford. In addition, the "Cú Feasa" also carried out extensive echo-surveys in the Dunmore fishery.

1. The Dunmore East Herring Fishery 1961/62: Fishing opened on October 11th, 1961 but had to be suspended a few days later because of a prolonged period of unfavourable weather. Fishing was resumed at the end of October and continued with regular landings up to February 8th, 1962 when the main fleet left the grounds. Landings made after February 8th up to the close of the season at the end of that month did not amount to more than about 900 crans. Fifty-seven boats taking part in the fishery landed at Dunmore East and used the following types of gear:-

| | |
|------------------------------------|----|
| Trawls and purse seines | 31 |
| Ring nets | 21 |
| Drift nets (boats of about 28') | 5 |

Landings were made on 78 days out of a possible 118. Altogether, 29.120 crans were landed during the season - a decrease of 35.324 crans (approximately 55 % on the corresponding figures for 1960/61). Ring nets accounted for 12.080 crans, the remainder being taken by bottom or mid-water trawls, purse-seines and drift nets. As in previous seasons, the major portion of the catch before Christmas was landed from ring-nets. After Christmas, the landings by trawlers increased and predominated by the end of the season. Samples of herrings were obtained from October 12th until January 30th. These samples were examined for length, sex, maturity and age. Meristic characters, including vertebral counts and otolith types, were also recorded. Table 1 summarises the age distribution of the fish examined. (p.2)

The dominant age groups were found to be 3 and 4 year olds. The 1957 year-class which entered the fishery as a very strong recruit brood (3-year-olds) during the 1960/61 season was again dominant. A reasonably good recruitment of the 1958 year-class also took place. The maturity stages of the fish examined showed slight variations over those of the previous three seasons. In October, November and December the gonads were developing (early Stage V) becoming full in late January (Stage VI). A small percentage of spents was present in the catches throughout the season. The maturity stages of the fish examined before Christmas indicated that fishing could have extended in 1962 well beyond the normal point.

The location and extent of the fishery in 1961/62 were similar to that of the previous season. The shoals were first located off the Keraghs, close to the shore, in ten fathoms. Estuarine fishing was again predominant during the November/December period. After Christmas fishing was confined mainly to Baginbun Bay.

2. Sampling adult herrings from Rosslare: The 1961/62 season commenced in November and continued until the end of December. Fishing was confined to a narrow ^{coastal} strip 1 to 2 miles off Rosslare Strand. A total of 266 fish were examined during the season and the age distributions obtained are summarised in Table 2.

Table 2. Age distribution - 1961

| Age in years | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Unreadable | Total |
|---------------------|----|-----|----|---|---|---|---|------------|-------|
| No. of Winter Rings | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | |
| No. of Fish | 28 | 194 | 37 | 1 | 1 | - | 1 | 4 | 266 |

The dominant age groups recorded were 3, 4 and 2-year-olds. The length range was 21 to 28 cm., the dominant length groups being 23-25 cm. The racial and meristic characteristics obtained from these fish, particularly the first year length measurements (calculated from the scales) and the mean vertebral counts show a close affinity to the Dunmore fish and appear to belong to the same stock.

3. Beach-seine and sprat weir data: Since November, 1959 a large scale study of the 0-group herring has been undertaken on the east, south-east and south coasts of Ireland. The earlier samples came from the so-called sprat-weirs on the estuary of the Blackwater, Co. Cork and Waterford Harbour. Monthly beach-seining investigations were later carried out on the south and south-east coasts from Knockadoon Bay, Co. Cork, to Blackwater Head, Co. Wexford, during the period July to October, 1960. In the summer and autumn of 1961 the main beach-seining effort was concentrated on the south-east and east coasts from Rosslare, Co. Wexford, to Carlingford Lough, Co. Louth. Sampling on the south coast during 1961 was confined to Waterford Harbour and the estuary of the Blackwater.

Generally 0-group herring were found to be abundant in these two estuaries. Only small numbers were taken in the intervening regions which include Ardmore and Dunbrattin, Co. Waterford. No young herring were taken west of Youghal, Co. Cork. To the east of Waterford Harbour 0-group herring were sparsely distributed although fair numbers had been taken at Rosslare Strand, Co. Wexford, in 1960. Despite a concentrated effort on the east coast from Rosslare to Howth, Co. Dublin, during 1961 no young herring were taken. From Clogherhead to Carlingford Lough, Co. Louth, however, 0-group herring were found to be fairly abundant.

Recruitment in the Dunmore fishery can occur over three age classes - 2, 3 and 4-year-old fish. The main recruitment of a particular year brood takes place when the fish are 3 years old. The 1959 year brood entering the Dunmore fishery during the 1962/63 season as 3-year-old recruits has already been examined as 0-group herring from the sprat-weirs on the south coast. By calculating the L_1 distribution of these fish and comparing the results with the 0-group length measurements of 1959 it will be possible to show whether or not the 0-group length measurements obtained are representative.

4. Larval surveys off the south and east coasts: Monthly larval surveys have been undertaken during the past two seasons in conjunction with the adult sampling programme at Dunmore East. The "Cú Feasa", using a modified Gulf III High Speed tow net, sampled an area extending from Cahore Point, Co. Wexford, to Fastnet, Co. Cork. The 1960/61 results show that the main spawning period during that season was in January, 1961. The 1961/62 larval surveys show that up to the end of February, 1962 no major concentration of larvae was found. This evidence, together with the adult maturity data collected in Dunmore, indicates that the 1961/62 season could have been prolonged well beyond the normal limit.

 Table 1 Age distribution for 1961/62

| Age in years | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 10 + | Total |
|--------------|----|-----|-----|-----|----|----|----|----|----|------|-------|
| No. of rings | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 > | |
| October | 1 | 9 | 28 | 41 | 5 | 9 | 5 | 3 | 2 | 2 | 105 |
| November | 28 | 229 | 254 | 49 | 24 | 13 | 13 | 6 | 5 | 4 | 625 |
| December | 43 | 167 | 397 | 59 | 19 | 38 | 15 | 19 | 11 | 8 | 776 |
| January | 16 | 65 | 111 | 18 | 10 | 12 | 6 | 5 | 5 | 2 | 250 |
| Totals | 88 | 470 | 790 | 167 | 58 | 72 | 39 | 33 | 23 | 16 | 1,756 |