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Achill Herring Investigations  
(1962)

by

J. Bracken



The presence of a small inshore autumn-spawning fishery has been recorded by Farran (1946) in the neighbourhood of Clare Island and Achill Island off the west coast of Ireland. Landings from this fishery have never exceeded 1,500 crans per season during the period 1921 to 1959. In 1960 to 1962, inclusive, however, the yields were 7,500, 3,500 and 3,000 crans, respectively. Fishing opened on 12th September, 1962 and continued with regular landings until 12th October. Sporadic landings were made after 12th October. 17 boats, 11 using ring-nets and 6 mid-water trawls, took part in the fishery and landed their catches chiefly at Westport, Co. Mayo. Ring-nets accounted for 2,400 crans (80% of the landings).

Samples of ring-net caught herrings were examined at Westport during September, 1962 for length, sex, maturity, age,  $L_1$  distribution and racial type. The dominant ages recorded were 5- and 6-year olds. Over 82% of the fish examined were in a pre-spawning condition (Stage V), 6.5% were running (Stage VI) and approximately 10% were spent (Stage VII), (Table 1). Considering all the year-broods in Stage V, with the exception of the 1959, 1952, 1951 and 1949 year-classes where the numbers of fish are too low, it may be readily seen that the vertebral counts are typically autumn. This is further supported by the otolith types obtained. No evidence of any admixture of stocks was found in this fishery.

The  $L_1$  distribution is shown in Table 2 in  $\frac{1}{2}$  cm-groups. The dominant length-group occurring within year-classes varies from year to year. The 1958 year-brood shows the dominant group to be 11.0 cm. In the 1957 and 1956 year-broods, however, the dominant  $L_1$  groups were at 13.0 and 14.0 cm, respectively.

Echo-surveys. Extensive echo-surveys were carried out by the 'Cú Feasa' from 27th August to 14th September. The area searched included Clew Bay, Keel Bay, and the region extending 10-12 miles on the seaward side of a line joining Achill Head and Inisturk Island. The ELAC sounder and ASDIC were used continuously during these surveys. For each sub-area searched a systematic grid was set up consisting of a series of parallel lines, 1 mile apart, and usually 5 to 10 miles long.

Good fish markings were recorded in the Keel Bay area on 28th August. During the next few days other small markings were picked up in Keel Bay. The first catch of herrings was not made until 12th September, despite the fact that fish markings were recorded every day by the 'Cú Feasa'. The main catches during the season were taken in Keel Bay, close to the shore, in 10-15 fathoms.

The presence of pilchards and to a lesser extent sprats complicated matters and several mixed catches were reported in the area.

Table 1. Mean length and mean vertebral count per maturity stage per age-class

Year-brood	1959	1958	1957	1956	1955	1954	1953	1952	1951	1950	1949	Totals	
No. of winter rings	2	3	4	5	6	7	8	9	10	11	12		
Maturity Stage IV	-	-	-	1 32.10 57.00	1 32.00 57.00	-	1 31.80 56.00	-	-	-	-	Nos. 3	% 0.5
V	14 26.90 56.71	77 28.74 56.45	173 29.65 56.49	106 30.26 56.42	76 31.22 56.42	68 31.22 56.47	32 32.00 56.56	19 31.94 56.58	5 31.60 56.60	-	-	570	82.0
VI	1 26.80 57.00	6 28.32 56.33	11 29.47 56.46	10 30.16 56.70	7 31.14 56.33	4 31.20 56.25	3 32.26 56.33	-	2 31.45 56.50	-	1 32.70 56.00	45	6.5
VII	10 26.52 56.60	4 28.25 57.00	41 29.33 56.61	7 29.78 56.43	2 31.30 56.50	3 32.07 56.00	1 32.10 57.00	2 31.75 56.50	1 31.80 57.00	-	-	71	10.0
VIII	1 25.10 57.00	1 27.00 57.00	2 29.00 57.00	1 28.70 57.00	1 32.00 56.00	1						6	0.9
Totals	26	88	227	125	87	75	37	21	8	-	1	695	100.0

Table 2.  $L_1$  distribution

Length in $\frac{1}{2}$ cms	Number of winter rings								
	2 (1959)	3 (1958)	4 (1957)	5 (1956)	6 (1955)	7 (1954)	8 (1953)	9 (1952)	10 (1951)
7.5	-	-	-	-	1	-	-	-	-
8.0	-	1	3	-	-	-	-	-	-
8.5	-	-	2	-	1	-	1	2	-
9.0	2	4	1	3	1	3	-	1	-
9.5	-	2	4	1	-	1	1	-	-
10.0	-	6	9	4	3	6	1	-	1
10.5	-	-	6	4	3	3	-	1	-
11.0	1	13	10	3	1	4	1	-	1
11.5	-	2	8	10	1	3	-	-	1
12.0	1	10	24	17	11	4	7	1	1
12.5	1	4	15	3	3	3	4	1	1
13.0	4	7	28	10	6	11	2	7	1
13.5	2	4	17	7	5	7	1	2	-
14.0	4	6	23	23	11	9	2	1	-
14.5	2	3	15	9	6	-	4	1	-
15.0	2	4	17	11	8	4	3	2	-
15.5	2	4	7	2	4	4	1	1	-
16.0	1	3	8	-	10	5	2	1	1
16.5	-	1	2	3	-	-	-	-	-
17.0	-	-	1	-	2	2	-	1	1
17.5	-	-	1	-	-	-	1	-	-
18.0	-	-	1	1	1	1	-	-	-
18.5	-	2	-	-	-	-	-	-	-
19.0	-	-	1	-	-	-	-	-	-
Totals	22	76	203	111	78	70	31	22	8