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Notes on Salmon caught in Greenland 1966

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1. Arrangements were made to continue and extend the tagging operations on salmon caught on the Greenland coast during 1966. Two teams, each consisting of a member from England, Denmark and Scotland, caught and tagged salmon in the Godthab district from 19th September to 13th November.
2. During the first half of this period two main sites were used, the large fjord at Praestefjord ($64^{\circ} 01' N 51^{\circ} 19' W$) and a smaller area to the south at Kigdlut iluat ($63^{\circ} 54' N 51^{\circ} 25' W$), but occasional visits were made to Agpanguit iluat. During the second half of the period, from mid-October to mid-November, only the more sheltered area at Praestefjord was fished.
3. The nets used were shore-set gill-nets similar to those used in 1965; the Norwegian 'Kilenot' was not fished. Most of the nets were between 79 and 119 m. (43 to 65 fathoms) in length and between 14 and 16 m. (8 to 9 fathoms) in depth. The mesh size ranged from 12.0 to 16.0 cm. ($4\frac{3}{4}$ to $6\frac{1}{4}$ inches) stretched. Attempts were made to fish nets with mesh 10.0 cm. (4 inches) stretched but these were not successful.
4. The Scottish yellow plastic, double plate tag, was again used. This bore a serial number on one face and DA4 on the other. In 1965 silver wire was used for the attachment of the tag, but in 1966 both silver and steel wire attachments were used in alternate batches of ten.
5. During the period of 79 days fishing, a total of 2137 fish was caught, of which 801 (37%) were alive and, of these, 728 were tagged. Some of the live fish were retained for blood and parasite studies. The general condition of the salmon tagged was very similar to that of the fish tagged in 1965, but there was some improvement in the handling of the fish when they were being taken from the nets and transferred to the tagging vessel. The proportion of live fish in the daily catches appeared to be largely dependent on the speed with which the nets could be examined and the fish extracted; the proportion was higher in those nets examined immediately after daybreak. Practically all the tagged fish were released some distance from the netting area.
6. Six tagged fish were caught, five of these carried Canadian tags and one had been tagged in the River Axe (England). Unfortunately all these fish were dead when caught. It is presumed that all these were tagged as smolts in 1965.
7. A total of 27 local recaptures were recorded, of which three-quarters were recaptured within four days of release and, with two exceptions, all were taken in the Godthab district. The two fish caught outside the Godthab area were both recaptured in the Fiskenaasset area, about 50 miles south of the tagging site. Only one local recapture was recorded in 1965 and the increase in 1966 may have been due to (a) an increased fishing effort by the Greenlanders, (b) better co-operation in returning tags or, (c) to the better condition of the tagged fish.

8. To date, one long-distance recapture has been reported. This was a fish tagged in Praestefjord on 14th October 1966 which was recaptured by net and coble on the River Tweed on 18th March 1967. Thus it had travelled about 2000 miles in 155 days (an apparent speed of 13 miles/day) and, during this period, it had increased in length from 64.0 cm. to 68.5 cm.
9. An analysis of the length measurements for each locality is shown in Tables 1 and 2. This sample only includes fish caught during the tagging operation. Further material was collected from settlements to the north and south of the Godthab area, but this is still being analysed.
10. These figures show that the overall length distribution of the fish caught was very similar to that of the fish caught in 1965. The overall average lengths of the fish caught during the first period in Praestefjord and Kigdlut iluat were 64.2 cm. and 64.6 cm. respectively, whereas in Praestefjord, for the second period, the average length was 66.0 cm.
11. The average weight for the whole sample was much the same as that of the 1965 sample (3.4 kg.).
12. There was again a high proportion of female fish in the catch. Where internal examination was possible (i.e. the untagged fish) the ratio during the first period was 3.4 females to one male and, for the second period, 2.2 females to one male.
13. It has not been possible to complete the examination of the large collection of scale material which came from several districts in Greenland, but 883 sets of scales, taken from fish caught in Praestefjord during the first period, have been examined. As in 1965, 98% of the fish caught had spent one winter in the sea, less than 1% had spent two winters in the sea and less than 1% were previous spawners. Table 3 below gives further details.

Table 3 Results of Scale Examinations

<u>Age of Smolts at Migration (yrs)</u>	<u>Winters in Sea</u>			<u>Totals</u>	<u>Percentage Composition (1965)</u>
	1.	2.	SM.		
1	21	0	0	21	2.4
2	343	4	0	347	39.2
3	389	5	4	398	45.1
4	73	0	1	74	8.4
5	36	0	0	36	4.1
6	7	0	0	7	0.8
7	0	0	0	0	-
	869	9	5	883	

14. Smolts which migrated when two or three years old again formed the bulk of this population, but the relative importance of the two-year and three-year old smolts was reversed in 1966.
15. The stomach contents were examined from 988 of the fish caught. Capelan (Mallotus villosus) formed about 97% of the food organisms present and euphausiids were also present in small numbers. About 11% of the stomachs were empty, compared with about 25% in 1965.

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Table 1 Analysis of Length Measurements of Fish Caught

<u>Location</u>	<u>Period</u>	<u>Length(cm) (from tip of snout to fork of caudal fin)</u>								<u>Total</u>	
		45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85-89	
Praestefjord	Sept.-Oct.	1(0.1)	9(1.0)	65(7.1)	401(43.7)	365(39.8)	60(6.5)	12(1.4)	3(0.3)	1(0.1)	917
Kigdlut iluat	Sept.-Oct.	1(0.1)	3(0.4)	70(9.4)	290(39.0)	310(41.7)	60(8.2)	4(0.5)	5(0.7)	0(0.0)	743
Praestefjord	Oct. -Nov.	0(0.0)	1(0.2)	13(3.0)	147(33.7)	200(45.9)	64(14.7)	6(1.4)	2(0.4)	3(0.7)	436
		2(0.1)	13(0.6)	148(7.1)	838(40.0)	875(41.7)	184(8.8)	22(1.0)	10(0.5)	4(0.2)	2096

Figures in parenthesis indicate percentages

Table 2 Length and Ungutted Weight

<u>Location</u>	<u>Period</u>	<u>Length(cm) (from tip of snout to fork of caudal fin)</u>								<u>Total</u>	
		45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85-89	
Praestefjord	Sept.-Oct.	0	5	41	277	224	42	10	2	1	602
		-	2.5	2.5	3.0	3.6	4.5	5.2	8.2	8.0	3.4
Kigdlut iluat	Sept.-Oct.	0	1	42	126	128	28	2	3	0	330
		-	1.7	2.4	3.0	3.6	4.3	5.3	7.2	-	3.3
Praestefjord	Oct. -Nov.	0	1	9	95	140	49	5	2	2	303
		-	2.1	2.5	3.2	3.7	4.5	5.3	7.6	8.7	3.8
		0	7	92	498	492	119	17	7	3	1235
		-	2.4	2.5	3.1	3.7	4.4	5.3	7.6	8.5	3.5

^a As the tagged fish were not weighed, the numbers recorded are those of fish dead when caught or not fit for tagging