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Analysis of salmon blood samples taken off West Greenland, 1970-1972

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Research has continued to be concentrated on the polymorphic transferrins, which, when analysed by electrophoretic techniques, separate into distinct bands; these have been numbered Tf1, 2, 3, and 4. So far, only Tf1, Tf2 and Tf1/2 have been found in British rivers, and Tf1, Tf4, Tf1/3, Tf1/4, Tf3/4 in a small sample from Canada. The percentage occurrence of Tf1/2 and Tf2 in UK rivers is very low, ranging from 6.5% in the R Teign, Devon, to 0.1% in E Scottish rivers; the percentage occurrence of the Tf3 and 4 bands in the few Canadian samples was much higher.

The 1972 West Greenland samples have now been analysed and the distribution of transferrin bands is shown in Table 1 below.

Table 1. Transferrin phenotypes in salmon sera 1972.

Fishing Area	Tf1	Tf1/4	Phenotypes (%)			Total sample
			Tf4	Tf1/3	Tf1/2	
I North of 69°N Disko	100	-	-	-	-	9
II 66°N - 69°N St Hellefiskebank	88	3	9	-	-	67
III 64½°N - 66°N Il Hellefiskebank	92.5	4	2	0.5	1	211
IV 63°N - 64½°N Fyllasbank	93	2	4	0	2	47
V 62°N - 63°N Danasbank	88	4.5	3	1.5	3	67
VI 61°N - 62°N Frøderikshåbbank	90	6	4	-	-	51
VII 60½°N	97	-	3	-	-	34
VIII 57°N	89	3	8	-	-	64

Salmon with a distinctive Canadian band were caught in fishing areas II-VIII (See Figure 1) although their percentage occurrence was small, and those with distinctive UK transferrins were found in the samples from areas III, IV and V respectively. This might imply that the UK salmon were concentrated in a specific area off W Greenland, but the small number of samples from each area prevents any firm conclusion being made.

The percentages occurrences of the distinctive UK and Canadian bands found in the 1972 samples are compared with those obtained in the 1970 and 1971 sampling season in Table 2. The high percentage occurrence of Tf1/2 bands in 1970 was associated with a large number of UK smolt tags returned from the Greenland fishery; fewer tags were returned in 1971.

Efforts are still being made to isolate a biochemical marker which is specific for national stocks and which exists in a high percentage of the population.

Year	Area sampled	Phenotypes (%)		
		Tf1	Tf1/2	Tf1/3, 1/4, 1/4,4
1970	I-II	82.0	1.8	16.2
1971	III	88.6	0.4	10.8
1972	I-VIII	91.0	1.0	8.0

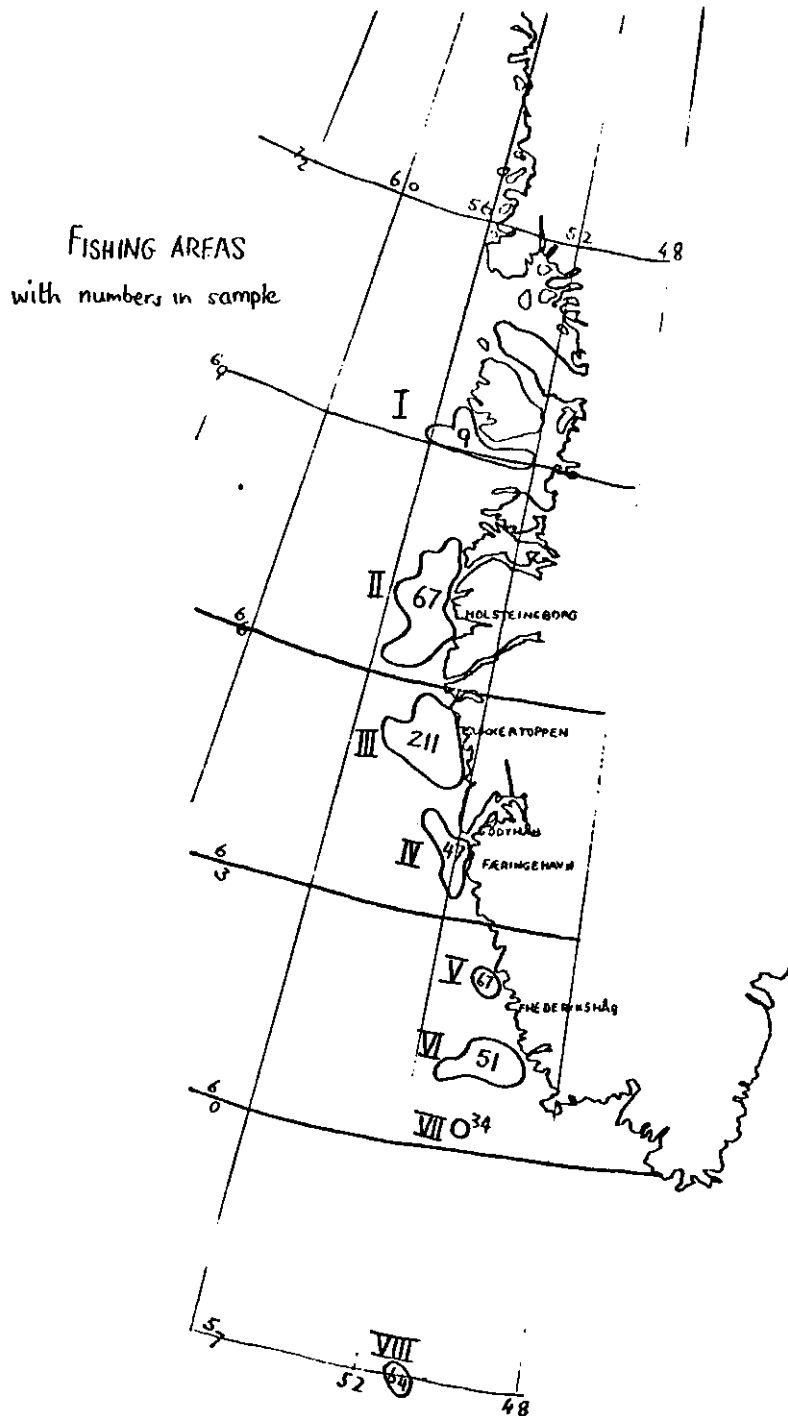


Fig. 1.