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Notes on Recent Research Progress
at the M.A.F.F. Salmon & Freshwater Fisheries Laboratory
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Electrophoretic analysis of serum samples from salmon caught in river estuaries in England, Wales, Scotland, Ireland and Canada has revealed an extensive transferrin polymorphism which we believe to be the product of four co-dominant allelomorphic genes: Tf1, Tf2, Tf3 and Tf4.

The Tf1 gene has been demonstrated to be present in salmon populations on both sides of the Atlantic Ocean, but Tf2 is apparently restricted to certain populations of European salmon while Tf3 and Tf4 are restricted to North America.

Therefore there are eight possible transferrin phenotypes:

Tf1 found in both European and North American populations of salmon.

Tf1-Tf2

Tf2 found only in European populations.

Tf1-Tf3

Tf1-Tf4

Tf3

Tf4

Tf3-Tf4 found only in North American populations.

As the result of the collecting programme in the Davis Strait during the late summer of 1970 the total number of serum samples available for analysis is 987 of which number 189 were provided by the Fisheries Research Board of Canada.

Analysis for transferrin phenotype of 733 of this Greenland collection has made it possible to classify beyond doubt the continent of origin of 22% of the fishes sampled. This aspect of the analytical procedures is continuing.

Of the material analysed to date, 20.4% is of North American origin and 1.8% is European (excluding Scandinavian). It must not be taken that these figures represent the true proportions of European and North American salmon in the Davis Strait, this is merely the percentage of the sample which can be positively identified without consideration of the genetics involved. Further research on the distribution of these transferrin alleles throughout the range of the species is continuing and can be expected to provide an accurate assessment of national stock contribution to this fishery.