

Summary of Blood Typing Work during 7 Years (1955-1962)
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 for the
 Purebred Dairy Cattle Association
 (Ayrshire, Brown Swiss, Guernsey, Jersey and Holstein Friesian)

Table 1

	<u>Total</u>
Number of samples tested	12,192
*Number of parentage cases	1,259
**Number of parentage cases solved	1,129
Percent of parentage case solved	90%
Number of spot checks	859
Number of exclusions in spot checks	60
Percent of exclusions in spot checks	7%

* Omitting 28 special herd problems.
 ** 51 of the 130 cases not solved involved cases in which one parent was not available or bulls typed elsewhere were involved. Omitting these 51 cases, the percent solved would be 1129/1208 = 93.5%.

Table II

Frequency of blood group systems critically involved in solving parentage problems.

<u>*No. of Cases</u>	<u>B</u>	<u>C</u>	<u>F-V</u>	<u>Z</u>	<u>S</u>	<u>A</u>	<u>L</u>	<u>J</u>	<u>M</u>
1,259	74%	27%	12%	10%	11%	12%	7%	6%	3%

Average number of systems critically involved per case = 1.6%.

103/1259 = 8% of the cases were solved by phenogrouping that were not possible to solve by factor analysis.

* Approximately 90% Holstein-Friesian.

Example of a Parentage Problem in Cattle (Reference case no G1184)

Bull 1	$\frac{B}{O_1 I' /}$	$\frac{F-V}{F/F}$	$\frac{Z}{Z/Z}$	$\frac{J}{J}$
Bull 2	BGKD' / IQE' ₁	F/F	-/-	J
Dam	T ₁ B' / I'	F/F	Z/Z	-/-
Calf	BGKD' / T ₁ B'	F/F	Z/-	J

Analysis: The calf possesses phenogroups BGKD', F, J and "dash" in the Z system which must have been transmitted by the sire if the true dam is as indicated. Bull 1 lacks the critical phenogroups in the B and Z systems and, therefore, is excluded as the sire. Bull 2 possesses the necessary phenogroups and qualifies as the sire.