the sum of these four values equal to one) then $p_{12\cdots6}^{(n)} \to p_{12}p_{34}p_{56}$. If however for $m = 6$ merely $d_{12} = d_{34} = 1$ (realized if, in a notation analogous to (3), v_0, v_5, v_6, v_{56}, v_{12}, v_{34}, v_{125}, v_{126} are the only non-zero values of the l.d.) then $p_{12\cdots6}^{(n)} \to p_{12}p_{34}p_5p_6$.

In general, with a proof which consists in a modification of the reasoning (p. 41), of my earlier paper, we may state the following complement to the main limit theorem (9): *If the l.d. is such that $r < m$ disjoint groups G_1, G_2, $\cdots$ G_r of completely linked characters exist, i.e. such that within each group no crossover takes place, each group containing as many of the m numbers as compatible with the definition but not less than two, and all groups together containing $s \leqq m$ of the m elements, then, as $n \to \infty$, $p_{12\cdots m}^{(n)}$ converges towards the product of those marginal distributions (of the original generation) which correspond to these groups multiplied by the marginal distributions of order one of the remaining free elements which are not contained in any such group. In a formula:*

$$\lim_{n\to\infty} p_{G_1,G_2,\cdots G_r,\gamma_{s+1},\gamma_{s+2},\cdots\gamma_m} = p_{G_1}p_{G_2}\cdots p_{G_r}p_{\gamma_{s+1}}p_{\gamma_{s+2}}\cdots p_{\gamma_m}. \tag{10}$$

We may also characterize these linked groups of maximum size by stating that while within each group no crossover takes place there must be at least one c.p. $\neq 0$ among any two such groups and at least one among any group and any free element. It may however be noted that if there is one c.p. > 0 among two groups of complete linkage (or among a group and a free element) then all c.p.'s among these two groups are different from zero. In fact, it follows by repeated use of the triangular relation (2) that if one c.p. among two disjoint groups of complete linkage is zero, all of them are zero. If, e.g., (1, 2, 3) and (5, 6, 8) are two groups of complete linkage, i.e. $v_{123}(000) = 1$ and $v_{568}(000) = 1$ and if besides $c_{15} = 0$, then $v_{123568}(000000) = 1$ and these six elements form a group of complete linkage.

It may be noticed that the above statement of the generalized limit theorem becomes simpler and more elegant by counting "free elements" as groups. It might then run as follows: *If G_1, G_2, $\cdots$ $G_t(t \leqq m)$ are the maximal groups of completely linked characters, then, under the hypotheses of the earlier paper, the gene distribution in successive generations approaches a limit in which the original (marginal) probabilities within each group G_i are preserved and genes and sets of genes fromd ifferent groups are independently distributed.*

ON THE DEFINITION OF DISTANCE IN THE THEORY OF THE GENE

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In several letters to this author Dr. I. M. H. Etherington of the University of Edinburgh has raised questions concerning the author's definition of "distance" proposed in Section 10 of her paper on Mendelian heredity,[1] comparing it with

[1] *Annals of Math. Stat.*, Vol. 15 (1944), pp. 25–57.