by the correlation of homogamy and fertility would much aid us in comprehending the origin of species.

Although we are unable at present to account for the high coefficients of cross-assortative mating in man, it is possible to give an empirical formula, which will enable us to determine these coefficients in terms of the direct assortative mating coefficients and the organic correlations well within the limits of the probable errors of our results. Clearly the cross-assortative mating coefficients ought to vanish with both direct and organic correlations. Hence, if p, q refer to two organs in the husband and p', q' to the same pair in the wife, we should expect the cross correlation $r_{pq'}$ to be of the form:

$$r_{pq'} = Cr_{pp'}r_{p'q'} + C'r_{qq'}r_{pq}.$$

Having satisfied myself that C and C' might be taken as practically equal, I found C as the mean of the last six entries in Table II. There resulted the formulae

$$\left.\begin{aligned} r_{pq'} &= \cdot 5342\ (r_{pp'}r_{p'q'} + r_{qq'}r_{pq}), \\ r_{p'q} &= \cdot 5342\ (r_{pp'}r_{pq} + r_{qq'}r_{p'q'}), \end{aligned}\right\} \quad \text{.....(iii)}$$

whence I found the following results.

TABLE III *bis.*

Calculated and Observed Cross Coefficients in Husband and Wife.

Husband's Character	Wife's Character	Observed Value	Calculated Value	Difference
Span	Stature	·202	·198	+ ·004
Stature	Span	·182	·196	− ·014
Forearm	Stature	·178	·159	+ ·019
Stature	Forearm	·140	·157	− ·017
Span	Forearm	·153	·151	+ ·002
Forearm	Span	·155	·151	+ ·004

The differences are well within the probable errors, and the above formulae may I think be safely used, if the cross coefficients are unknown.

(vii) *Direct Parental Inheritance.*

For the resemblance in like organs between offspring and parents we have for our three organs twelve cases. The correlations deduced from Appendix Tables XXII.—XXXIII. are given in Table IV. below.

It is impossible to regard these results without extreme satisfaction, not only as confirmation of the general reliability of the material, but also for the weighty evidence they bring for the nature of inheritance in man. When one remembers the labour of collecting the measurements, the days spent in tabling and reducing it, and the doubts which not unnaturally arose as to its value and the value of the tedious labour spent on it, the sense of satisfaction felt may be considered pardonable. The surprising agreement of the results—well within the probable

errors—for each character is to be noted in the first place. Considering that the measurements are made on more than 4000 individuals of different sexes in more than 1000 families, the conviction is complete that these numbers correspond to a

TABLE IV.

Coefficients of Heredity. Parents and Offspring.

Character	Father and		Mother and	
	Son	Daughter	Son	Daughter
Stature	·514 ± ·015	·510 ± ·013	·494 ± ·016	·507 ± ·014
Span	·454 ± ·016	·454 ± ·014	·457 ± ·016	·452 ± ·015
Forearm	·421 ± ·017	·422 ± ·015	·406 ± ·017	·421 ± ·015

reality in nature. From them we may safely draw the following conclusions for the organs examined:

(*a*) The son and daughter are equally influenced by their father, and equally influenced by their mother.

While a change of sex does appear to weaken hereditary influence in the eye-colour of man*, it does not appear to have any perceptible influence on the size of the human frame.

(*b*) In their influence on offspring there is no average prepotency of either father or mother, whatever there may be in individual cases.

(*c*) The inheritance of all characters does not appear to be the same.

The inheritance of forearm is for all four cases sensibly less than the inheritance of span, and that of span less than that of stature. We might as a probability put forward the following statement for further investigation.

(*d*) The more complex a character the greater the intensity of hereditary resemblance.

The fact that the correlation falls below ·5 with the simplicity of the character under consideration seems to suggest, however, that the reduction of the intensity cannot be due to an "alternative inheritance" in the case of the simple components of the character†.

For the mean values we have the following results:

Mean parental inheritance, father to son: ·463
" " " " to daughter: ·462
" " " mother to son: ·452
" " " " to daughter: ·460
Mean parental inheritance for both sexes and all characters: 460.

* *Biometrika*, Vol. II. pp. 237—240.

† See *R. S. Proc.* Vol. 66, p. 142, and *Natural Inheritance*, p. 139.