TABLES.

TABLE 1.

STRENGTH OF PULL. 519 Males aged 23–26. From measures made at the International Health Exhibition in 1884.			
		Percentages.	
Strength of Pull.	No. of cases observed.	No. of cases observed.	Sums from beginning.
Under 50 lbs.	10	2	2
,, 60 ,,	42	8	10
,, 70 ,,	140	27	37
,, 80 ,,	168	33	70
,, 90 ,,	113	21	91
,, 100 ,,	22	4	95
Above 100 ,,	24	5	100
Total	519	100	

TABLE 2.

DATA FOR SCHEMES OF DISTRIBUTION of various qualities and faculties among the persons measured at the Anthropometric Laboratory in the International Exhibition of 1884.

Subject of measurement.	Age.	Unit of measurement.	Sex.	No. of persons in the group.	Values at the undermentioned Grades, from 0° to 100°.										
					5°	10°	20°	30°	40°	50°	60°	70°	80°	90°	95°
Height, standing, without shoes	23–51	Inches	M.	811	63·9	64·5	65·8	66·5	67·3	67·9	68·5	69·2	70·0	71·3	72·4
			F.	770	58·9	59·9	61·3	62·1	62·7	63·3	63·9	64·6	65·3	66·4	67·3
Height, sitting, from seat of chair	23–51	Inches	M.	1013	33·6	34·2	34·9	35·3	35·4	36·0	36·3	36·7	37 1	37·7	38·2
			F.	775	31·8	32·3	32·9	33·3	33·6	33·9	34·2	34·6	34·9	35·6	36·0
Span of arms	23–51	Inches	M.	811	65·0	66·1	67·2	68·2	69·0	69·9	70·6	71·4	72·3	73·6	74·8
			F.	770	58·6	59·5	60·7	61·7	62·4	63·0	63·7	64·5	65·4	66·7	68·0
Weight in ordinary indoor clothes	23–26	Pounds	M.	520	121	125	131	135	139	143	147	150	156	165	172
			F.	276	102	105	110	114	118	122	129	132	136	142	149
Breathing capacity	23–26	Cubic Inches	M.	212	161	177	187	199	211	219	226	236	248	277	290
			F.	277	92	102	115	124	131	138	144	151	164	177	186
Strength of pull as archer with bow	23–26	Pounds	M.	519	56	60	64	68	71	74	77	80	82	89	96
			F.	276	30	32	34	36	38	40	42	44	47	51	54
Strength of squeeze with strongest hand	23–26	Pounds	M.	519	67	71	76	79	82	85	88	91	95	100	104
			F.	276	36	39	43	47	49	52	55	58	62	67	72
Swiftness of blow	23–26	Ft. per second	M.	516	13·2	14·1	15·2	16·2	17·3	18·1	19·1	20·0	20·9	22·3	23·6
			F.	271	9·2	10·1	11·3	12·1	12·8	13·4	14·0	14·5	15·1	16·3	16·9
Sight, keenness of — by distance of reading diamond test-type	23–26	Inches	M.	398	13	17	20	22	23	25	26	28	30	32	34
			F.	433	10	12	16	19	22	24	26	27	29	31	32

TABLE 3.

DEVIATIONS from **M** in each of the series in Table 2, after reduction to a Scale in which $Q' = 1$, where Q' is the *Mean* of the observed Deviations at the Grades 20°, 30°, 70°, and 80°.

Subject of measurement.	Unit of measurement in Table 2.	Values of Q'	Sex.	No. of persons	Deviations reckoned in units of Q'.										
					5°	10°	20°	30°	40°	50°	60°	70°	80°	90°	95°
Height, standing, without shoes	Inches	1·72	M.	811	2·73	1·98	1·22	0·81	0·35	0	0·35	·76	1·22	1·98	2·61
		1·62	F.	770	2·71	2·10	1·23	·74	·37	0	·37	·80	1·23	1·91	2·46
Height, sitting, from seat of chair	Inches	0·95	M.	1013	2·52	1·89	1·15	·73	·63	0	·31	·73	1·15	1·79	2·31
		0·82	F.	775	2·55	1·95	1·22	·73	·36	0	·36	·85	1·22	2·07	2·55
Span of arms	Inches	2·07	M.	811	2·36	1·83	1·30	·82	·43	0	·33	·72	1·16	1·79	2·36
		1·87	F.	770	2·35	1·87	1·23	·69	·32	0	·37	·80	1·28	1·98	2·67
Weight in ordinary indoor clothes	Pounds	10·00	M.	520	2·20	1·80	1·20	·80	·40	0	·40	·70	1·30	2·20	2·90
		11·00	F.	276	1·80	1·60	1·10	·70	·40	0	·60	·90	1·30	1·80	2·40
Breathing capacity	Cubic Inches	24·50	M.	212	2·32	1·68	1·28	·80	·32	0	·28	·68	1·16	2·32	2·84
		19·00	F.	277	2·39	1·87	1·20	·73	·36	0	·31	·67	1·35	2·03	2·49
Strength of pull as archer with bow	Pounds	7·50	M.	519	2·39	1·86	1·33	·80	·40	0	·40	·80	1·06	1·99	2·92
		5·22	F.	276	1·92	1·06	·80	·53	·27	0	·27	·53	·93	1·46	1·86
Strength of squeeze with strongest hand	Pounds	7·75	M.	519	2·32	1·81	1·16	·77	·39	0	·39	·77	1·29	1·93	2·45
		7·50	F.	276	2·12	1·73	1·20	·66	·40	0	·40	·80	1·33	1·99	2·66
Swiftness of blow	Ft. per second	2·37	M.	516	2·06	1·68	1·22	·80	·34	0	·42	·80	1·18	1·77	2·31
		1·55	F.	271	2·71	2·13	1·35	·84	·38	0	·38	·71	1·10	1·87	2·26
Sight, keenness of — by distance of reading diamond test-type	Inches	4·00	M.	398	3·00	2·00	1·25	·75	·50	0	·25	·75	1·25	1·75	2·25
		5·22	F.	433	2·66	2·28	1·52	·95	·38	0	·38	·57	·95	1·33	1·52
SUMS					43·11	33·12	21·96	13·65	7·00	0	6·57	13·34	21·46	33·96	43·82
MEANS					2·40	1·84	1·22	0·76	0·39	0	0·37	0·74	1·19	1·89	2·43
					2·44	1·87	1·24	0·77	0·40	0	0·38	0·75	1·21	1·92	2·47
MEANS multiplied by 1·015, to change unit to $Q = 1$					2·44	1·90	1·25	0·78	0·38	0	0·38	0·78	1·25	1·90	2·44
Normal Values, when $Q = 1$					2·44	1·90	1·25	0·78	0·38	0	0·38	0·78	1·25	1·90	2·44

Tables 4 to 8 inclusive give data for drawing Normal Curves of Frequency and Distribution. They also show the way in which the latter is derived from the values of the Probability Integral.

The equation for the Probablity Curve[1] is $y = k\, e^{-h^2 x^2}$ in which h is "the Measure of Precision." By taking k and h each as unity, the values in Table 4 are computed.

TABLE 4.

Data for a Normal Curve of Frequency.

$$y = e^{-x^2}$$

x	y	x	y	x	y	x	y
0	1·00	± 1·0	0·37	± 2·0	0·0183	± 3·0	0·0001
± 0·2	0·96	± 1·2	0·23	± 2·2	0·0079		
± 0·4	0·85	± 1·4	0·14	± 2·4	0·0032	± infi-	
± 0·6	0·70	± 1·6	0·78	± 2·6	0·0012	nity	0·0000
± 0·8	0·53	± 1·8	0·40	± 2·8	0·0004		

TABLE 5.

Values of the Probability Integral, $\dfrac{2}{\sqrt{\pi}} \displaystyle\int_{0}^{t} e^{-t^2}\, dt$, for Argument t.

$t\ (=hx)$	·0	·1	·2	·3	·4	·5	·6	·7	·8	·9
0	0·00	0·11	0·22	0·33	0·43	0·52	0·60	0·68	0·74	0·80
1·0	0·843	0·880	0 910	0·934	0·952	0·966	0·976	0·984	0·989	0·923
2·0	·9953	·9970	·9981	·9989	·9993	·9996	·9998	9999	·9999	·9999
infinite	1·0000									

When $t = \cdot4769$ the corresponding tabular entry would be ·50; therefore, ·4769 is the value of the "Probable Error."

[1] See Merriman *On the Method of Least Squares* (Macmillan, 1885), pp. 26, 186, where fuller Tables than 4, 5, and 6 will be found

TABLE 6.

Values of the Probability Integral for Argument $\frac{t}{0.4769}$; that is, when the unit of measurement = the Probable error.

Multiples of the Probable Error.	·0	·1	·2	·3	·4	·5	·6	·7	·8	·9
0	0·00	0·65	0·11	0·16	0·21	0·26	0·31	0·36	0·41	0·46
1·0	·50	·54	·58	·62	·66	·69	·72	·75	·78	·80
2·0	·82	·84	·86	.88	·89	·91	·92	·93	·94	·95
3·0	·957	.964	·969	·974	·978	·982	·985	·987	·990	·992
4·0	·9930	.9943	·9954	·9963	·9970	·9976	·9981	·9985	·9988	·9990
5·0	·9993	·9994	·9996	·9997	·9997	·9998	·9998	·9999	·9999	·9999
infinite	1·000									

Tables 5 and 6 show the proportion of cases in any Normal system, in which the amount of Error lies within various extreme values, the total number of cases being reckoned as 1·0. Here no regard is paid to the sign of the Error, whether it be *plus* or *minus*, but its amount is alone considered. The unit of the scale by which the Errors are measured, differs in the two Tables. In Table 5 it is the "Modulus," and the result is that the Errors in one half of the cases, that is in 0·50 of them lie within the extreme value (found by interpolation) of 0·4769, while the other half exceed that value. In Table 6 the unit of the scale is 0·4769. It is derived from Table 5 by dividing all the tabular entries by that amount. Consequently one half of the cases have Errors that do not exceed 1·0 in terms of the new unit, and that unit is the Probable Error of the System. It will be seen in Table 6 that the entry of ·50 stands opposite to the argument of 1·0.

If it be desired to transform Tables 5 and 6 into others that shall show the proportion of cases in which the *plus* Errors and the *minus* Errors respectively lie within various extreme limits, their entries would have to be halved.

Let us suppose this to have been done to Table 6, and that a new Table, which it is not necessary to print, has been thereby produced and which we will call 6*a*. Next multiply all the entries in the new Table by 100 in order to make them refer to a total number of 100 cases, and call this second Table 6*b*. Lastly make a converse Table to 6*b*; one in which the arguments of 6*b* become the entries, and the entries of 6*b* become the arguments. From this the Table 7

is made. For example, in Table 6, opposite to the argument 1·00, the
entry of ·50 is found; that entry becomes ·25 in 6*a*, and 25 in 6*b*.
In Table 7 the argument is 25, and the corresponding entry is 1·00.
The meaning of this is, that in 25 per cent. of the cases the greatest
of the Errors just attains to ± 1·0. Similarly Table 7 shows that
the greatest of the Errors in 30 per cent. of the cases, just attains
to ± 1·25 ; in 40 per cent. to 1·90, and so on. These various per-
centages correspond to the centesimal Grades in a Curve of Distri-
bution, when the Grade 0° is placed at the middle of the axis, which
is the point where it is cut by the Curve, and where the other
Grades are reckoned outwards on either hand, up to + 50° on the
one side, and to — 50° on the other.

To recapitulate :—In order to obtain Table 7 from the primary
Table 5, we have to halve each of the entries in the body of Table 5,
then to multiply each of the arguments by 100, and divide it by
·4769.   Then we expand the Table by interpolations, so as to
include among its entries every whole number from 1 to 99 inclusive.
Selecting these and disregarding the rest, we turn them into the
arguments of Table 7, and we turn their corresponding arguments
into the entries in Table 7.

TABLE 7.

ORDINATES TO NORMAL CURVE OF DISTRIBUTION

on a scale whose unit = the Probable Error ; and in which the 100 Grades run
from 0° to +50° on the one side, and to − 50° on the other.

Grades.	0	1	2	3	4	5	6	7	8	9
0	0·00	0·04	0·07	0·11	0·15	0.19	0·22	0·26	0·30	0·34
10	0·38	0·41	0·45	0·49	0·53	0·57	0·61	0·65	0·69	0·74
20	0·78	0·82	0·86	0·97	0·95	1·00	1·05	1·10	1·15	1·20
30	1·25	1·30	1·36	1·42	1·47	1·54	1·60	1·67	1·74	1·82
40	1·90	1·99	2·08	2·19	2·31	2·44	2·60	2·79	3·05	3·45

But in the Schemes, the 100 Grades do not run from—50° through
0° to + 50°, but from 0° to 100°.   It is therefore convenient to
modify Table 7 in a manner that will admit of its being used
directly for drawing Schemes without troublesome additions or
subtractions.   This is done in Table 8, where the values from
50° onwards, and those from 50° backwards are identical with
those in Table 7 from 0° to ± 50°, but the first half of those
in Table 8 are positive and the latter half are. negative.

TABLE 8.

ORDINATES TO NORMAL CURVE OF DISTRIBUTION on a scale whose unit = the Probable Error, and in which the 100 Grades run from 0° to 100°.

Grades	0	1	2	3	4	5	6	7	8	9
0	− ∞	− ·3·45	− 3·05	− 2·79	− 2·60	− 2·44	− 2·31	− 2·19	− 2·08	− 1·99
10	− 1·90	− 1·82	− 1·74	− 1·67	− 1·60	− 1·54	− 1·47	− 1·42	− 1·36	− 1·30
20	− 1·25	− 1·20	− 1·15	− 1·10	− 1·05	− 1·00	− 0·95	− 0·91	− 0·86	− 0·82
30	− 0·78	− 0·74	− 0·69	− 0·65	− 0·61	− 0·57	− 0·53	− 0·49	− 0·45	− 0·41
40	− 0·38	− 0·34	− 0·30	− 0·26	− 0·22	− 0·19	− 0·15	− 0·11	− 0·07	− 0·04
50	0·00	+ 0·04	+ 0·07	+ 0·11	+ 0·15	+ 0·19	+ 0·22	+ 0·26	− 0·30	+ 0·34
60	+ 0·38	+ 0·41	+ 0·45	+ 0·49	+ 0·53	+ 0·57	+ 0·61	+ 0·65	+ 0·69	+ 0·74
70	+ 0·78	+ 0·82	+ 0·86	+ 0·91	+ 0·95	+ 1·00	+ 1·05	+ 1·10	+ 1·15	+ 1·20
80	+ 1·25	+ 1·30	+ 1·36	+ 1·42	+ 1·47	+ 1·54	+ 1·60	+ 1·67	+ 1·74	+ 1·82
90	+ 1·90	+ 1·99	+ 2·08	+ 2·19	+ 2·31	+ 2·44	+ 2·60	+ 2·79	+ 3·05	+ 3·45

Examples of the way in which Table 8 is to be read :—

The ordinate at 0° is −infinity ; at 10° it is −1·90 ; at 11° it is −1·82 ; at 25° it is −1·00 ; at 75° it is +1·00. The Table does not go beyond Grade 99°, where the ordinate is + 3·45. At the Grade 100°, the ordinate would be + infinity.

TABLE 9.

MARRIAGE SELECTION IN RESPECT TO STATURE.

The 205 male parents and the 205 female parents are each divided into three groups—T, M, and S, and *t*, *m*, and *s*, respectively—that is, Tall, Medium, and Short (medium male measurements being taken as 67 inches, and upwards to 70 inches). The number of marriages in each possible combination between them were then counted, with the result that men and women of contrasted heights, Short and Tall, or Tall and Short, married about as frequently as men and women of similar heights, both Tall or both Short; there were 32 cases of the one to 27 of the other.

S., t. 12 cases.	M., t. 20 cases.	T., t. 18 cases.
S., m. 25 cases.	M., m. 51 cases.	T., m. 28 cases.
S., s. 9 cases.	M., s. 28 cases.	T., s. 14 cases.

Short and tall, 12 + 14 = 32 cases.
Short and short, 9 ⎫ = 27 cases.
Tall and tall, 18 ⎭

We may therefore regard the married folk as couples picked out of the general population at haphazard when applying the law of probabilities to heredity of stature.

TABLE 9A.

MARRIAGE SELECTION IN RESPECT TO EYE-COLOUR

in 78 Parental Couples.

Eye Colour of		No. of cases observed.	Per Cents.				Eye Colour of Husband and Wife.
Husband	Wife.		Obs.	Chance.	Observed.	Chance.	
Light Hazel Dark	Light Hazel Dark	29 2 6	37 3 8	37 2 7	48	46	Alike
Light Hazel	Hazel Light	18	23	15	28	22	Half-contrasted
Hazel Dark	Dark Hazel	4	5	7			
Light Dark	Dark Light	19	24	32	24	32	Contrasted

The chance combinations in pairs are calculated for a population containing 61·2 per cent. of Light Eye-colour, 12·7 of Hazel, and 26·1 of Dark.

TABLE 9B.

MARRIAGES OF THE ARTISTIC AND THE NOT ARTISTIC.

Rank in Pedigrees.	No. of persons.	Percentages.									
		Males.		Females.		Pairs of artistic and not artistic persons.					
						Marriages observed.			Chance combinations.		
		art.	not.	art.	not.	both art.	1 art. 1 not.	both not.	both art.	1 art. 1 not.	both not.
Parents	326	32	68	39	61	14	31	50	12	46	42
Paternal grandparents ..	280	27	73	30	70	12	31	57	8	41	51
Maternal grandparents..	288	24	76	28	72	9	41	50	7	39	54
Totals and means...	894	28	72	33	67	12	36	52	9	42	49

Tastes of Husband and Wife—alike	$12 + 52 = 64$	$9 + 49 = 58$
,,　　　　,,　　　　,,　　　contrasted.......	36	42

TABLE 10.

EFFECT UPON ADULT CHILDREN OF DIFFERENCES IN HEIGHT OF THEIR PARENTS.

Difference in inches between the Heights of the Parents.	Proportion per 50 of cases in which the Heights[1] of the Children deviated to various amounts from the Mid-filial Stature of their respective families.					Number of Children whose Heights were observed. (Total 525.)
	Less than 1 inch.	Less than 2 inches.	Less than 3 inches.	Less than 4 inches.	Less than 5 inches.	
Under 1 inch	21	35	43	46	48	105
1 and under 2	23	37	46	49	50	122
2　,,　　3　.....	16	34	41	45	49	112
3　,,　　5　......	24	35	41	47	49	108
5 and above..	18	30	40	47	49	78

[1] Every female height has been transmuted to its male equivalent by multiplying it by 1·08, and only those families have been included in which the number of adult children amounted to six, at least.

NOTE.—When these figures are protracted into curves, it will be seen—(1) that they run much alike; (2) that their peculiarities are not in sequence; and (3) that the curve corresponding to the first line occupies a medium position. It is therefore certain that differences in the heights of the Parents have on the whole an inconsiderable effect on the heights of their Offspring.

TABLE 11 (R.F.F. Data).

NUMBER OF ADULT CHILDREN OF VARIOUS STATURES BORN OF 205 MID-PARENTS OF VARIOUS STATURES.
(All Female Heights have been multiplied by 1·08.)

Height of the mid-parents in inches.	Heights of the adult children.														Total number of		Medians or Values of M.
	Below	62·2	63·2	64·2	65·2	66·2	67·2	68·2	69·2	70·2	71·2	72·2	73·2	Above	Adult children.	Mid-parents.	
Above 72·5...	...	...	...	...	...	...	...	...	...	...	...	1	3	...	4[1]	5[1]	
72·5...	...	...	...	...	...	...	...	1	2	1	2	7	2	4	19	6	72·2
71·5...	...	...	...	...	1	3	4	3	5	10	4	9	2	2	43	11	69·9
70·5...	1	...	...	1	1	1	3	12	18	14	7	4	3	3	68	22	69·5
69·5...	...	...	1	4	16	17	27	20	33	25	20	11	4	5	183	41	68·9
68·5...	1	...	5	13	16	25	31	34	48	21	18	4	3	...	219	49	68·2
67·5...	...	3	9	20	5	36	38	28	38	19	11	4	...	...	211	33	67·6
66·5...	...	3	3	5	2	17	17	14	13	4	...	...	...	...	78	20	67·2
65·5...	1	1	4	9	7	11	11	7	7	5	2	1	...	...	66	12	66·7
64·5...	1	...	5	5	...	5	5	...	2	...	...	...	...	...	23	5	65·8
Below ...	1	...	5	2	...	2	2	1	1	...	...	...	...	...	14	1	
Totals	5	7	32	59	48	117	138	120	167	99	64	41	17	14	928	205	
Medians	...	66·3	67·8	67·9	67·7	67·9	68·3	68·5	69·0	69·0	70·0	...	...	...			

Note.—In calculating the medians, the entries have been taken as referring to the middle of the squares in which they stand. The reason why the headings run 62·2, 63·2, &c., instead of 62·5, 63·5, &c., is that the observations are unequally distributed between 62 and 63, 63 and 64, &c., there being a strong bias in favour of integral inches. After careful consideration, I concluded that the headings, as adopted, best satisfied the conditions. This inequality was not apparent in the case of the mid-parents.

[1] I have reprinted this Table without alteration from that published in the *Proc. Roy. Soc.*, notwithstanding a small blunder since discovered in sorting the entries between the first and second lines. It is obvious that 4 children cannot have 5 Mid-Parents. The first line is not considered at all, on account of the paucity of the numbers it contains. The bottom line, which looks suspicious, is correct.

TABLE 12 (R.F.F. Data).

RELATIVE NUMBER OF BROTHERS OF VARIOUS HEIGHTS TO MEN OF VARIOUS HEIGHTS, FAMILIES OF SIX BROTHERS AND UPWARDS BEING EXCLUDED.

Heights of the men in inches.	Heights of their brothers in inches.														Total Cases.	Medians.
	Below 61.7	62.2	63.2	64.2	65.2	66.2	67.2	68.2	69.2	70.2	71.2	72.2	73.2	Above 73.2		
Above 73.7...	...	...	...	...	1	...	1	...	1	4	3	3	3	2	18	
73.2...	1	...	...	...	...	...	1	1	2	1	3	4	...	3	16	
72.2...	1	...	1	2	1	1	...	8	6	8	11	5	4	3	51	70.3
71.2...	...	...	...	4	4	4	9	11	15	12	8	11	3	3	84	69.3
70.2...	1	...	2	4	3	7	6	12	25	18	11	8	1	3	101	69.3
69.2...	...	...	4	6	13	12	18	29	29	24	15	6	2	1	159	68.6
68.2...	1	...	...	3	6	7	15	16	29	12	11	8	1	...	109	68.9
67.2...	1	...	4	3	8	14	21	15	19	6	9	...	1	1	102	67.7
66.2...	...	...	1	7	10	12	14	7	12	7	4	1	...	...	75	67.2
65.2...	...	1	1	4	13	9	8	6	13	3	4	1	...	1	64	67.2
64.2...	...	1	...	6	4	7	3	3	6	·4	4	2	...	...	40	67.3
63.2...	...	...	...	...	1	1	4	...	4	2	...	1	...	...	13	
62.2...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	
Below 61.7...	...	...	...	...	1	...	1	1	...	1	...	1	1	...	5	
...	5	2	13	39	65	74	101	109	161	102	83	51	16	17	838	

P

TABLE 13 (Special Data).

RELATIVE NUMBER OF BROTHERS OF VARIOUS HEIGHTS TO MEN OF VARIOUS HEIGHTS, FAMILIES OF FIVE BROTHERS AND UPWARDS BEING EXCLUDED.

Heights of the men in inches.	Heights of their brothers in inches.													Total cases.	Medians.
	Below 63	63·5	64·5	65·5	66·5	67·5	68·5	69·5	70·5	71·5	72·5	73·5	Above 74		
74 and above	1	1	...	...	...	...	...	1	1	...	5	3	12	24	
73·5	...	...	...	...	...	1	3	4	8	3	3	2	3	27	71·1
72·5	...	...	...	...	1	1	6	5	9	9	8	3	5	47	70·2
71·5	...	1	1	1	2	8	11	18	14	20	9	4	...	88	69·6
70·5	...	...	1	1	7	19	30	45	36	14	9	8	1	171	69·5
69·5	...	1	2	9	11	20	36	55	44	17	5	4	2	198	68·7
68·5	...	1	5	26	18	38	46	36	30	11	6	3	...	203	67·7
67·5	2	4	8	33	35	38	38	20	18	8	1	1	...	199	67·0
66·5	4	3	10	18	28	35	20	12	7	2	1	...	...	155	66·5
65·5	3	3	15	15	33	36	8	2	1	1	...	...	...	110	65·6
64·5	3	8	12	15	10	8	5	2	1	...	...	...	...	64	
63·5	5	2	8	3	3	4	1	1	...	1	...	...	1	20	
Below 63	5	5	3	3	4	2	...	...	...	...	...	...	1	23	
Totals	23	29	64	110	152	200	204	201	169	86	47	28	25	1329	

TABLE 14 (Special Data).

DEVIATIONS OF INDIVIDUAL BROTHERS FROM THEIR MID-FRATERNAL
STATURES.

Number of brothers in each family......	4	5.	6	7
Number of Families.........................	39	23	8	6
Amount of Deviation.	Number of cases.	Number of cases.	Number of cases.	Number of cases.
Under 1 inch...................................	88	62	20	21
1 and under 2............................. ...	49	30	18	14
2 and under 3...............................	15	17	5	6
3 and under 4...............................	4	3	3	1
4 and above...................................	...	3	2	...

TABLE 15.

FREQUENCY OF DIFFERENT EYE-COLOURS IN FOUR SUCCESSIVE GENERATIONS.

No. of cases of eye-colour observed.

Sex and the No. of the (ascending) generation.	1. Light blue.	2. Blue. Dark blue.	3. Grey. Blue-green.	4. Dark grey. Hazel.	5. Light brown.	6. Brown.	7. Dark Brown.	8. Very dark brown. Black	Totals.
Males { IV	13	177	136	40	2	39	44	12	463
Males { III	19	234	233	84	3	79	97	24	773
Males { II	30	167	236	108	8	83	74	36	742
Males { I	3	89	82	47	1	37	31	9	299
General	65	687	687	279	14	238	246	81	2277
Females { IV	7	132	114	48	2	70	58	19	450
Females { III	22	173	241	89	7	100	98	17	742
Females { II	21	210	241	98	3	78	60	24	735
Females { I	6	78	82	55	5	33	22	5	286
General	56	593	678	290	17	281	233	65	2213
Males and Females { IV	20	309	240	88	4	109	102	31	913
Males and Females { III	41	407	474	173	10	179	190	41	1515
Males and Females { II	51	377	477	206	11	161	134	60	1477
Males and Females { I	9	167	164	102	6	70	53	14	585
General	121	1260	1365	569	31	519	479	146	4490

Percentages.

Sex and the No. of the (ascending) generation.	1. Light blue.	2. Blue. Dark blue.	3. Grey. Blue-green.	4. Dark Grey. Hazel.	5. Light brown.	6. Brown.	7. Dark brown.	8. Very dark brown. Black	Totals.
Males { IV	2·8	38·2	29·4	8·6	0·4	8·4	9·5	2·6	99·9
Males { III	2·4	30·3	30·1	10·9	0·4	10·1	12·6	3·1	99·9
Males { II	4·0	22·5	31·8	14·6	1·1	11·2	10·0	4·8	100·0
Males { I	1·0	28·9	27·4	15·7	0·3	12·4	10·4	3·0	100·0
General	2·9	29·3	30·2	12·3	0·6	10·4	10·8	3·6	100·0
Females { IV	1·5	29·3	25·3	10·7	0·4	15·6	12·9	4·2	99·9
Females { III	2·9	23·3	32·5	12·1	0·9	13·5	12·5	2·3	100·0
Females { II	2·9	28·6	32·8	13·3	0·4	10·6	8·2	3·3	100·1
Females { I	2·1	27·3	28·7	19·2	1·7	11·5	7·7	1·7	99·0
General	2·5	26·8	30·6	13·1	0·8	12·7	10·5	2·9	99·9
Males and Females { IV	2	34	27	10	1	12	11	3	100
Males and Females { III	3	27	31	11	1	12	12	3	100
Males and Females { II	3	26	32	14	1	11	9	4	100
Males and Females { I	1	29	28	18	1	12	9	2	100
General	2·7	28·1	30·4	12·7	0·7	11·6	10·7	3·3	100·2

TABLE 16.

THE DESCENT OF HAZEL-EYED FAMILIES.

	Total cases.	Observed.			Percentages.		
		Light.	Hazel.	Dark.	Light.	Hazel.	Dark.
General population	4490	2746	569	1175	61·2	12·7	26·1
III. Grandparents...	449	267	61	121	60	13	27
II. Parents	336	165	85	86	49	25	26
I. Children................	948	430	302	216	45	32	23

TABLE 17.

CALCULATED CONTRIBUTIONS OF EYE-COLOUR.

Contribution to the heritage from each.	Data limited to the eye-colours of the					
	2 parents.		4 grandparents.		2 parents and 4 grandparents.	
	I.		II.		III.	
	Light.	Dark.	Light.	Dark.	Light.	Dark.
Light-eyed parent.........	0·30	...	...	...	0·25	..
Hazel-eyed parent.........	0·20	0·10	...	...	0·16	0·09
Dark-eyed parent	...	0·30	...	...	...	0·25
Light-eyed grandparent..	...	...	0·16	...	0·08	...
Hazel-eyed grandparent.	...	...	0·10	0·06	0·05	0·03
Dark-eyed grandparent...	...	...	...	0·16	...	0·08
Residue, rateably assigned	0·28	0·12	0·25	0·11	0·12	0·06

TABLE 18.

EXAMPLE OF ONE CALCULATION IN EACH OF THE THREE CASES.

Ancestry and their eye-colours.	I.			II.			III.		
	No. about whom data exist.	Contribute to		No. about whom data exist.	Contribute to		No. about whom data exist.	Contribute to	
		Light.	Dark.		Light.	Dark.		Light.	Dark.
Light-eyed parents.	2	0·60	...	...	...	...	...	...	...
Hazel-eyed parents.	...	...	...	...	...	...	1	0·16	0·09
Dark-eyed parents .	...	...	...	...	...	...	1	...	0·25
Light-eyed grand-parents..............	...	...	...	1	0·16	...	1	0·08	...
Hazel-eyed grand-parents.......... ...	...	...	...:	2	0·20	0·12	2	0·10	0·06
Dark-eyed grand-parents..	...	...	...	1	...	0·16	1	...	0·08
Residue, rateably as-signed..............	...	0·28	0·12		0·25	0·11		0·12	0·06
Total contributions	...	0·88	0·12		0·61	0·39		0·46	0·54
		1·00			1·00			1·00	

TABLE 19.

OBSERVED AND CALCULATED EYE-COLOURS IN 16 GROUPS OF FAMILIES.

Those families are grouped together in whom the distribution of Light, Hazel, and Dark Eye-colour among the Parents and Grandparents is alike. Each group contains at least Twenty Brothers or Sisters.

Eye-colours of the						Total children.	Number of the light eye-coloured children.			
Parents.			Grandparents.				Ob-served.	Calculated.		
Light.	Hazel.	Dark.	Light.	Hazel.	Dark.			I.	II.	III.
2	...	...	4	...	...	183	174	161	163	172
2	...	...	3	1	...	53	46	47	44	48
2	...	...	3	...	1	92	88	81	67	79
2	...	...	2	1	1	27	26	24	18	22
...	...	2	2	...	2	22	11	6	12	6
1	1	...	3	1	...	62	52	48	51	51
1	1	...	3	...	1	42	30	33	31	32
1	1	...	2	2	...	31	28	24	24	20
1	1	...	2	...	2	49	35	38	28	34
1	1	...	2	1	1	31	25	24	21	23
1	...	1	3	...	1	76	45	44	55	46
1	...	1	2	...	2	66	30	38	38	35
1	...	1	2	...	1	27	15	16	18	16
I	...	1	1	...	3	20	9	12	8	9
1	...	1	1	1	2	22	8	13	11	11
...	1	1	1	1	2	24	9	14	12	10
						629	623	601	614

NATURAL INHERITANCE.

TABLE 20.

OBSERVED AND CALCULATED EYE-COLOURS IN 78 SEPARATE FAMILIES, EACH OF NOT LESS THAN SIX BROTHERS OR SISTERS.

Eye-colours of the						Total children.	Number of the light eye-coloured children.			
Parents.			Grandparents.				Observed.	Calculated.		
Light.	Hazel.	Dark.	Light.	Hazel.	Dark.			I.	II.	III.
2	...	...	4	...	...	6	6	5·3	5·3	5·6
2	...	...	4	...	...	6	6	5·3	5·3	5·6
2	...	...	4	...	...	6	6	5·3	5·3	5·6
2	...	...	4	...	...	6	5	5·3	5·3	5·6
2	...	...	4	...	...	7	7	6·2	6·2	6·6
2	...	...	4	...	...	7	7	6·2	6·2	6·6
2	...	...	4	...	...	7	7	6·2	6·2	6·6
2	...	...	4	...	...	7	7	6·2	6·2	6·6
2	...	...	4	...	...	7	7	6·2	6·2	6·6
2	...	...	4	...	...	8	8	7·0	7·1	7·5
2	...	...	4	...	...	8	8	7·0	7·1	7·5
2	...	...	4	...	...	8	8	7·0	7·1	7·5
2	...	...	4	...	...	8	8	7·0	7·1	7·5
2	...	...	4	...	...	8	7	7·0	7·1	7 5
2	...	...	4	...	...	8	7	7·0	7·1	7·5
2	...	...	4	...	...	12	12	10·6	10·7	11·3
2	...	...	3	1	...	7	7	6·2	5·8	6·4
2	...	...	3	1	...	10	4	8·8	8·3	9·1
2	...	...	3	1	...	12	12	10·6	10·0	10·9
2	...	...	3	...	1	7	6	6·2	5·1	6·0
2	...	...	3	...	1	8	8	7·0	5·8	6·9
2	...	...	3	...	1	9	9	7·9	6·6	7·7
2	...	...	3	...	1	9	9	7·9	6·6	7·7
2	...	...	3	...	1	9	7	7·9	6 6	7·7
2	...	...	3	...	1	10	10	8·8	7·3	8·6
2	...	...	2	2	...	7	7	6·2	5·4	6·2
2	...	...	2	2	...	10	9	8·8	7·7	8·8
2	...	...	2	1	1	6	6	5·3	4·0	5·0
2	...	...	2	1	1	10	10	8·8	6·7	8·3
...	2	...	2	1	1	7	4	6·2	4·7	4 6
...	2	...	2	...	2	8	5	5·4	4·6	4·8
...	...	2	3	...	1	6	2	1·7	4·4	2·2
...	...	2	2	...	2	9	1	2·5	5·1	2·5
...	...	2	1	...	3	6	1	2·7	2·5	1·2
...	...	2	1	...	3	11	3	3·1	4·5	2·2
...	...	2	1	1	2	6	...	1·7	3·0	1·5
...	...	2	1	1	2	7	4	2·0	3·6	1·8
1	1	...	3	1	...	6	6	4·7	5 0	4·9
1	1	...	3	1	...	7	6	5·5	5·7	5·7
1	1	...	3	1	...	8	6	6·2	6·6	6 6
1	1	...	3	1	...	9	7	7·0	7·5	7·4
1	1	...	3	1	...	11	10	8·6	9·1	9·2

TABLE 20—*continued*.

Eye-colours of the						Total children.	Number of the light eye-coloured children.			
Parents.			Grandparents.				Observed.	Children.		
Light.	Hazel.	Dark.	Light.	Hazel.	Dark.			I.	II.	III.
1	1	...	3	...	1	9	6	7·0	6·6	6·9
1	1	...	3	...	1	11	7	8·6	8·0	8·5
1	1	...	2	2	...	7	6	5·5	5·4	4·4
1	1	...	2	2	...	9	9	7·0	6·9	5·7
1	1	...	2	2	...	11	1	8·6	8·5	6·9
1	1	...	2	...	2	6	6	4·7	3·4	4·1
1	1	...	2	...	2	6	4	4·7	3·4	4·1
1	1	...	2	...	2	8	5	6·2	4·6	5·5
1	1	...	2	...	2	9	7	7·0	5·1	6·2
1	1	...	2	1	1	6	6	4·7	4·0	4·4
1	1	...	2	1	1	10	9	7·8	6·7	7·4
1	1	...	1	3	...	9	4	7·0	5·5	6·8
1	1	...	1	1	2	8	5	6·2	4·1	5·3
1	...	1	4	...	...	7	3	4·1	6·2	4·8
1	...	1	3	...	1	6	4	3·5	4·4	3·7
1	...	1	3	...	1	7	3	4·1	5·1	4·3
1	...	1	3	...	1	8	6	4·6	5·8	4 9
1	...	1	3	...	1	8	5	4·6	5·8	4·9
1	...	1	3	...	1	8	4	4·6	5·8	4·9
1	...	1	3	...	1	9	6	5 2	6·6	5·5
1	...	1	3	...	1	9	5	5·2	6·6	5 5
1	...	1	2	...	2	6	5	3·5	3·4	3·2
1	...	1	2	...	2	6	3	3·5	3·4	3·2
1	...	1	2	...	2	8	4	4·6	4·6	4·2
1	...	1	2	...	2	10	2	5·8	5·7	5·3
1	...	1	2	...	2	14	9	8·1	8·0	7·4
1	...	1	2	1	1	7	5	4·1	4·7	4·1
1	...	1	1	2	1	7	3	4·1	4·3	3·9
1	...	1	1	1	2	7	4	4·1	3·6	3 5
1	...	1	1	...	3	8	4	4·6	3·3	3 6
1	...	1	1	...	3	8	3	4·6	3·3	3·6
1	...	1	...	1	3	6	3	3·5	2·1	2·6
...	1	1	2	...	2	6	3	4·8	3·4	2·6
...	1	1	2	1	1	9	4	7·0	6·0	4·4
...	1	1	1	...	3	13	8	10·1	5·3	4·7
...	1	1	...	4	...	7	2	5·5	4·6	3·4

TABLE 21.

ERROR IN CALCULATIONS.

Numbers of Errors of various Amounts in the 3 Calculations, Table 20, of the
Number of Light Eye-coloured Children in the 78 Families.

Data employed referring to	Amount of Errors.					Total Cases.
	0·0 to 0·5.	0·6 to 1·1.	1·2 to 1·7	1·8 to 2·3	2·4 and above.	
I. The 2 parents only	19	30	18	5	6	78
II. The 4 grandparents only.....	16	28	10	10	14	78
III. The 2 parents and 4 grand-parents........................	41	17	8	4	8	78

TABLE 22.

INHERITANCE OF THE ARTISTIC FACULTY.

Parents.	Children.							
	Observed.			Per cents.				
				Observed.		Calculated,		
	Number of Fraternities.	Total children.	Of whom are artistic.	art.	not art.	art.	not art.	
Both artistic	30	148	95	64	36	60	40	
One artistic; one not..	101	520	201	39	61	39	61	
Neither artistic..... ...	150	839	173	21	79	17	83	
Totals................	281	1507	469	100	100	100	100	

The "parents" and the "children" in this Table usually rank respectively as
Grandparents and Parents in the R.F.F. pedigrees.