

**Mathemaical contributions to the theory of evolution. / By Karl Pearson
[and others].**

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Second Colt.

TABLE VII.—Collateral Inheritance. First Degree. (Half-Brothers.)
Colts and Colts. Same Mare but different Sires.

First Colt.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	Totals.
	bl.	bl./br.	br./bl.	br.	br./b.	b./br.	b.	b./ch.	ch./b.	ch.	ch./ro.	ro./ch.	ro.	ro./gr.	gr./ro.	gr.	
1	2	1	0	6	0	1	8	0	0	5	0	0	0	0	0	0	23
2	0	0	0	2	0	0	5	0	0	6	0	0	0	0	0	0	13
3	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2
4	4	3	0	44	0	10	72	0	0	34	0	0	0	0	1	0	168
5	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
6	1	0	0	4	0	10	19	0	0	8	0	0	0	0	0	0	42
7	5	3	2	62	1	19	242	0	0	119	0	0	0	0	0	1	454
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
10	2	2	0	24	0	5	119	0	0	134	0	0	0	0	0	0	286
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	1	0	0	2	0	0	3	0	0	0	0	0	2	8
Totals...	14	9	2	143	1	46	470	0	0	311	0	0	0	0	1	3	1000















































































































































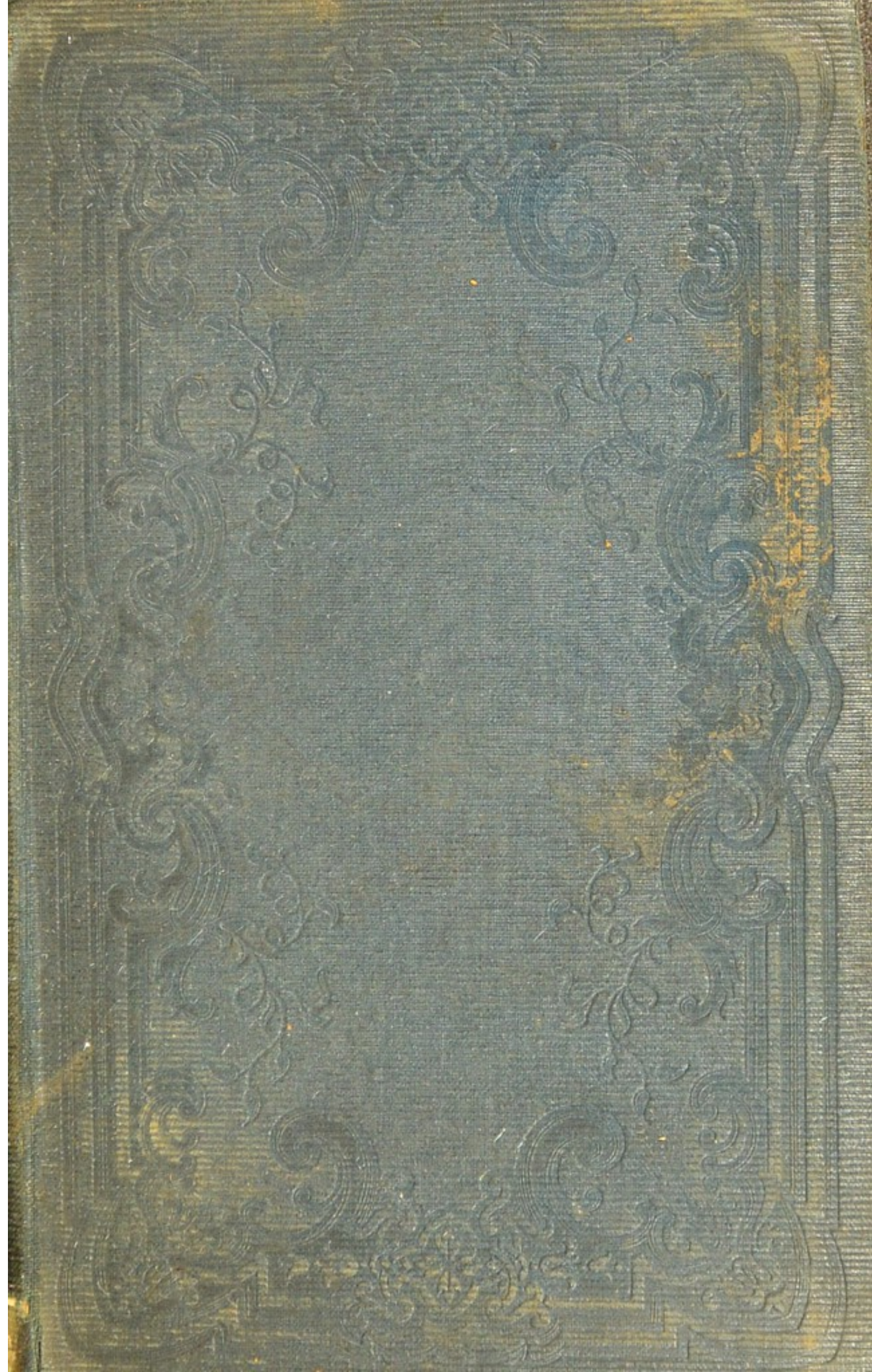




































































































fertilisation on homotypy deserve still fuller and more direct investigation.* I feel we know little as to the influence of external causes even on the completeness or incompleteness of self-fertilisation. So far as homotypy in the pods of leguminous plants is concerned, I would draw conclusions based solely on averages, and state that :—

(i.) The homotypy in the case of either ripe or aborted seeds in the pods or plants seems weakened to one-half the average value it has in the case of characters not depending on fertilisation. Thus DARWIN's view, that differences in the number of ripe seeds depend upon the constitution of the plants, seems to be only partially true. Extraneous causes about which we are not very clear appear to be generally influential.

(ii.) The extraneous causes which act in a random manner on the homotypic correlation seem to affect both self-fertilised and cross-fertilised plants, and this both with regard to ripe and to aborted seeds.

(iii.) The order of intensity of homotypic correlation is ovules, ripened seeds, and aborted seeds.

The reduction of homotypic correlation in the case of the fertility of pods may be profitably compared with the like reduction which we find in the case of the coefficients of inheritance of fertility and fecundity in man and the horse.†

Other points worth noting, I think, in our results are those of Table LII., which gives the correlation between ovules and ripe and aborted seeds. As we might anticipate, the more ripe the fewer aborted seeds, and *vice versa*. The correlation is negative, high for the everlasting pea, remarkably low for the tare vetch. It is interesting to see that the correlation between the ovules and either ripe or aborted seeds is not very high. A large number of ovules not necessarily connoting either a very large number of ripe or of aborted seeds. In fact, in the case of the everlasting pea, the number of ovules has very small influence indeed on the number of seeds which ripen. In the tare vetch only is the relationship more marked. Professor F. O. OLIVER tells me that in certain cases evolution appears to be tending in the direction of the pod containing one ripe seed only. It seems, therefore, that such relations as are indicated in Table LII. (and others of a like kind, for further observations ought certainly to be made) may be useful in indicating the degree of fixity between the number of ovules and the number of ripe or aborted seed which are ultimately to be found in the seed vessel.

While the ovules have the least and the aborted seeds the greatest variability, as measured by the coefficient of variation, the ovules have the most and the aborted seeds the least homotypic correlation. This might at first sight appear to be opposed to the view expressed on p. 363, that there is no relationship between the intensities

* It seems to me that investigations of this kind ought to be carried out by those who have, what I unfortunately have not, the needful land for experimental investigations.

† 'Phil. Trans.,' A, vol. 192, p. 277 *et seq.*











































