

If we take two "breeds" denoted by

$$\{p^2(DD) + 2pq(DR) + q^2(RR)\}^n \quad (a)$$

and

$$\{P^2(DD) + 2PQ(DR) + Q^2(RR)\}^n \quad (b)$$

respectively, and cross them at random, it is not difficult to show that the array of the resulting hybrid offspring is given by

$$\{Pp(DD) + (Pp + pQ)(DR) + Qq(RR)\}^n \quad (c)$$

Now, the mean number of recessive elements in these families is

$$(a) \quad \frac{q^2}{(p+q)^2} \times n$$

$$(b) \quad \frac{Q^2}{(P+Q)^2} \times n$$

$$(c) \quad \frac{qQ}{(p+q)(P+Q)} \times n$$

Thus the mean of (c) is the *geometric* mean of (a) and (b).

Since the geometric mean is always less than the arithmetic mean, it follows that the mean number of recessive elements (of the type (RR)) in (c) is less than the collective mean of the families (a) and (b) treated as one population. Moreover, since the recessive elements are fewer, the aggregate elements of the types (DD) and (DR) must be greater.

If, now, it be assumed that dominance is positively correlated with vigor, we have the final result that the crossing of two pure breeds produces a *mean* vigor greater than the collective mean vigor of the parent breeds.

By similar methods it can be shown that the "inbreeding" of a Mendelian population leads to a decrease in the mean number of elements of the types (DD) and (DR).

I am aware that there is no experimental evidence to justify the assumption that dominance is correlated with a "blending" character like vigor; but the hypothesis is not an extravagant one, and may pass until a better takes the field.

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#### THE INHERITANCE OF BODY HAIR

READING a book on South African stories called "By Veldt and Kopje," by William Charles Scully (London, T. Fisher Unwin, 1907), I was struck by a statement which may be of interest alike to anthropologists and students of "Mendelism," and as the book may not have been seen by either, I will quote the passage.

In a chapter on "Kaffir Music," written jointly by Mr. Scully and his wife and originally published in the *Pall Mall Magazine*, incidental mention is made of Madikanè, once reigning chief of the Baca tribe of Bantus, who was killed in battle on December 19, 1824. The Bacas lived on and about the present site of Pietermaritzburg, Natal, until driven into exile by the Zulus or the Amangwanè.

There is some ground for thinking that Madikanè's mother was an European, possibly a waif from one or other of the vessels which are known to have been wrecked on the east coast of southern Africa toward the end of the last century.

All authorities agree that Madikanè was of great stature, that he was light in color, and that his hair and beard were long. It was his habit to carry his snuff-spoon stuck in the hair of his chest. One of the writers has examined a number of his male descendants, and found about *one in every four* with traces of hair on the chest. It is, it may be stated, very unusual to find any hair on the body of a Bantu. [The italics are mine.]

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#### THE REFORMED CALENDAR AND A UNIVERSAL SABBATH

TO THE EDITOR OF SCIENCE: The reform of the calendar is at present so hopelessly academic, that it may not be amiss to add another thought. The Jewish Sabbath, or seventh day of rest, has been adopted by both Christians and Mohammedans—but with changes of the actual week-day in order to emphasize division.

In the proposed new calendar the old regular recurrence of named-days would be altered by the odd no-day yearly, and the actual Sabbath-succession destroyed, despite the re-