2 April 1932.

Dr. H.D. Goodale,
 Mount Hope Farm,
  Williamstown,
   Mass., U.S.A.

Dear Dr. Goodale.

Thanks for your letter of 19 March.

With the aid of your table (page 2 of your letter) I can put my point much more clearly.

You have noticed that for sires and dams of given yield $2D - H$ will have double the range (that is four times the variance) of $D - \underline{OH}$, but that as between different classes of dams mated to the same sire the former formula has no variance while the latter has considerable.

All that I need to point out now is that the average scores recorded for the bulls are twice as far apart for $2H - D$ than for $H - OD$.   In fact you show in your table

True value	5000	10000	15000
H - OD	75000	10000	12500
2H - D	5000	10000	15000

Since $2H - D$ spreads the estimated bull matings twice as wide as does $H - OD$ it can afford to have four times the error variance (as it has in groups from the same sire and the same class of cow)

so that its advantage over H - OD lies wholly in the absence
of variance between matings of the same bull by mating
with different classes of dams.   As our object is to rate the
bull, such variance is clearly pure error.

I submit that you can only justify the belief that the
yield factors are chiefly dominant, on the basis of some
Cow-heifer records for a number of bulls.   The calculation
I suggest to obtain the best value of k in

$$H - kD$$

would be less tedious than the application of it to obtain
bull matings.   If you like i could illustrate it on
Gowen and Pearls old data, but it may not be worth doing.

Yours sincerely,