

3rd. February, 1930.

A.D. Buchanan Smith, Esq., M.A.,
Animal Breeding Research Department,
King's Buildings,
West Mains Road,
EDINBURGH.

Dear Buchanan Smith,

I do not think there is anything to be despondent about. The results obtained are really relevant to your original problem. Take only the correlations from the four well represented groups

Whole sisters (same sire, same dam)	$1 - \frac{24822}{43915} = .4348$
Paternal $\frac{1}{2}$ sisters (same sire, dams not sisters)	$1 - \frac{35698}{43915} = .1871$
Maternal $\frac{1}{2}$ sister (Sires not brothers, same dam)	$1 - \frac{32834}{43915} = .2522$
Unrelated	

The numbers in these four cases are all fairly big, and though the basic variation for unrelated cows may be uncertain, it does not affect the comparisons of the two sorts of $\frac{1}{2}$ sisters.

I should interpret these data as opposed to the view that the milk yield depends much on the X-chromosome, which should if I have rightly got the hang of a complicated matter, increase the correlations for paternal $\frac{1}{2}$ sisters.

The correlations seem reasonable in magnitude, and by taking account of the real complexity of the relationships you have certainly obtained better values than were available before.

No, I am too appallingly busy to write about it.

Of course, I recognise that more data would be needed before the series of mean squares will run smoothly, and it would be a great triumph to carry the thing as far as that; but the results so far are probably as valuable as all the other work put together.

Yours sincerely,

Animal Breeding Research Department

DIRECTOR:

PROF. F. A. E. CREW, M.D., D.Sc., Ph.D.

ANIMAL HUSBANDRY

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UNIVERSITY OF EDINBURGH

KING'S BUILDINGS

WEST MAINS ROAD

TEL. 42887

3rd February, 1930.

Dear Dr. Fisher,

Herewith I enclose two papers which I have recently received from America. You will notice that they deal only with butterfat whereas my work has dealt only with total milk yield.

I should be very glad, if you can spare the time, to have your observations upon the method employed in obtaining the correlation figures etc..

Yours sincerely,

A. D. Buchanan Smith

Dr. H.A. Fisher,
Rothamsted Experimental Station,
Harpenden,
HERTS.