

JOHN INNES HORTICULTURAL INSTITUTION
MOSTYN ROAD, MERTON PARK, LONDON, S.W.19

From the Director, DR C. D. DARLINGTON, LIBERTY 3645

14th March 1942.

Dear Professor,

Please excuse my letter being handwritten. My typewriter is away for cleaning.

I must thank you for reading my *Nature* article. I take it that you found no outrageous travesties of genetical history. I was very amused by Darlington wishing to have the rule "one organ-one locus", ~~as~~ you point out in your letter. It is quite in line with his other contributions to genetical theory.

I have gone through your *sun* ratio discussion, though I have not ~~do~~ reperated all the algebra. Hence, except from one point, I cannot comment on that. The one point is that in the table at the top of page 4, I expected to find the value of μ_{xy} from female parents

of the kind $X'X$ as well as the XX and $X'Y$ forms you give. I was not clear why they were omitted.

The conclusion that the depression of effective fertility of X' males is achieved by sexual selection gets over Shrivastava's difficulties beautifully. It would seem that sexual selection of this kind is of much greater importance in animals than is generally realized, as it also allows of adjustment of the inbreeding - outbreeding system in a way that we discussed, I believe, when I last saw you.

As to facts about sex-ratio, I can supply some & Darlington can also. I enclose a manuscript (Darlington asks you to please return it when convenient as it is his only copy) by Darlington & Polyansky. It is just published, omits the last paragraph which Polyansky could not swallow. The letter from Darlington gives some information too, indicating the implicit promise of more data in the nearish

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fulvum.

I have also worked over Sturtevant & Dolgolenko 1936 (Genetics 21: 473) who give some figures. Both ♀ & ♂ vary from Race A to Race B; ♀ Race A and ♀ from a (different) ♀ from that of all corresponding ♀♀. He writes ~~probably~~ that the data within races are heterogeneous for various reasons. Still the figures are as follows, for what they are worth.

			<u>X-chrs. used</u>
<u>D. pseudodouglasii</u>	{ Race A ♂♂	0.090	100
	♀♀	0.149	316
	Race B ♀♀	0.176	125
<u>D. obscurus</u>	{ ♂♂	0.000	9
	♀♀	0.048	
<u>D. affinis</u>	{ ♂♂	0.073	124
	♀♀	0.067	28
<u>D.</u>	<u>D. pseudodouglasii</u> { Race A	0.016 320	<u>plus varied</u> 6850
	{ --- B	0.082 076	8609

I hope that these figures will help you.
Your hope were a shade to high, or at least it was, even for rule 8.

Carter's cannot help us with the
Summer meeting of the Genetical Society. Crane
will see Hatten of East Malling on
April 1st & will ask him about
surveys at East Malling etc.

I got no go reply from Husley
about running round the Zoo on 16th April,
but I saw in the newspaper today
that he is in America still, & is
to be removed from his position at the Zoo,
so perhaps the lack of reply is not
so mysterious.

Yours sincerely

K. Mather