

1st September, 1960

Dr. N.S. Noble,
Editor,
C.S.I.R.O.,
314 Albert Street,
EAST MELBOURNE, C.2. Vic.

Dear Dr. Noble,

Thank you for your letter of 30th August enclosing the referee's report on my paper on multiple alleles.

Of the 2 points on which my comments are requested the first is strictly irrelevant. Wright, in his recent paper, does not say that the hypothetical sub-division of the population would be irrelevant to the question of the number of alleles nor, I think, does he say that he agrees with my point of view, even so far as to commend my suggestion that the size of the species must have diminished greatly since the last period of glaciation. One could scarcely expect Sewall Wright to comment on the point of my present paper which he has not heard of, namely that sub-division of the species would not, in the light of my solution published a few years ago on the distribution of frequency in multiple alleles, help to increase the number of alleles maintained.

The only possible answer to the second point is for the referee to re-examine Emerson's data and, if he pleases, to recalculate the significance test I have proposed. The data, of course, include a number of queries and I believe any honest summary of them would be effectively equivalent to that which I have given. If the alleles are more widely spread than I have gathered from Emerson's data as the referee suggests, this would, of course, only strengthen the point I am making.

The reviewer is quite right on one point. In re-reading my paper before receiving his comments, I had altered in one or two places the word isolation to the word differentiation. What is demonstrated statistically is that the sub-division of the species are not differentiated.

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In our ignorance of the process and means by which new alleles come into existence, it is still possible that the sub-divisions are completely isolated and are drawing new alleles by mutation from a common pool in such a way as to remain undifferentiated. On this view also, sub-division into sub-populations has no contribution to make to the explanation of the number of alleles observed in the species.

Finally, I should note that the phrase used in the referee's first sentence "implying a long standing controversy" is untrue and I presume is intended to be prejudicial.

Sincerely yours,

R.A. FISHER